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**Abstracts listed by session times**



## Abstracts listed by session times

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**Code Descriptions:**

C = Customer Case Study  
P = Panel Discussion  
T = Technical Training  
W = Workshop

“1-5” at the end of a session code indicates the length of the session. “1” being a one-hour session, “2” being a two-hour session, etc.

“A, B or C” at the end of a session code indicates the session is given more than one time. “A” represents the first time the session is being offered, “B” the second time, and “C” the third time. If an A, B or C does not follow a session code, the session is given only once.

## Tuesday, March 24

### SESSION 1: 9:30 a.m. – 10:30 a.m.

#### **CPO-01-1 Reducing carbon footprint and improving efficiency through advanced transmission systems**

Difficulties in locating proper sites for generation interconnection and transmission line are expected in today's environment. However, the use of advanced transmission systems like FACTS is allowing companies to improve voltage stability, support the system immediately following critical contingencies, increase power throughput on congested lines and cope with the quickly changing generation interconnection and power flow patterns.

#### **CRS-01-1 Enhancing productivity through improved plant reliability: Maintenance outsourcing case study**

This presentation explores how a leading manufacturer partnered with ABB Full Service®, a partnership arrangement that improves plant operations through maintenance excellence, and enhanced focus on its core processes. Through this partnership, the manufacturer has achieved significant process improvements, increased overall equipment effectiveness, and reduced total maintenance costs. Moreover, the partnership was able to transform the mill's paper machine performance, when it jumped from being ranked as the worst paper machine within the company globally to number one. In this presentation, participants will gain insights into how the pulp and paper manufacturer achieved these results.

#### **PPO-02-1 Career management panel discussion: Managing career growth as a new engineer**

Career management is an important topic to engineers just entering the work force. This session will discuss topics to aid new engineers in their career path planning, as well as tips to help them obtain their career goals. A panel of engineers in the field will provide their thoughts and open for a discussion amongst those in the session. Different career paths will be discussed to provide examples of various options a new engineer could work towards in starting a career.

#### **TCS-08-1A Freelance 800F overview and update**

The Freelance 800F Compact Control System is ABB's offering for small to medium sized automation in the process industries. This workshop provides general information about the system as well as an update on the latest news. Learn about the building blocks of this system as well as the brand new AC 700F controller, which bridges the gap between PLC and DCS.

#### **TCS-15-1 Collaborative manufacturing: Managing the complex manufacturing environment**

For the past 20 years, manufacturers have been trying to eliminate the "islands of information" that exist in a traditional facility. Today, a typical manufacturing facility has between 10 and 50 shop floor systems, ranging from traditional MES (Manufacturing Execution System) "track and trace" functions to LIMS (Laboratory Information Management System), maintenance or attendance systems. This workshop will explore how ABB's solutions integrate automation, manufacturing and business environments to form a truly collaborative manufacturing facility.

#### **TCS-23-1A System 800xA introduction**

This training session will introduce the System 800xA Extended Automation System and the benefits it delivers. This overview presentation will exhibit how System 800xA extends functionality beyond that of other control systems through unparalleled connectivity, integrated applications and its many industrial IT enabled partners. This presentation sets the stage for many subsequent sessions and shouldn't be missed.

#### **TFM-03-5 (NOTE: 5 hour session)**

##### **Operating and maintaining Stressometer Master Piece system - Part 1**

This course teaches students basic, theoretical and practical flatness measurement and flatness control using Stressometer Master Piece system. The training targets people who will perform operation, service and maintenance on Stressometer Master Piece system. It is desired that students have knowledge of the target process and basic knowledge of mechanics and electronics. Upon completion of this course, students will be able to describe the basic design principles of Stressometer Master Piece and its range of functions, and perform basic operation, maintenance and service of the Stressometer Master Piece system.

#### **TIN-02-1A Digital valve positioners: Advantages, selection, setup and optimization made easy**

Digital positioners deliver accuracy for the process, are efficient with plant air and offer good diagnostic features. This workshop will detail the available positioner options and their advantages. Attendees will discuss the selection of required features from the available options, as well as learn how digital valve positioners are fast and easy to setup. ABB digital valve positioner offers on-line optimization of the positioner's performance.

**TLC-10-1 eCo and power-packed: The breakthrough - New ABB AC500-eCo Programmable Logic Controller (PLC)**

Same instruction set as a large-scale Programmable Logic Controller? Exceptionally fast? Networkable? Ethernet? With 16-bit resolution analog/thermocouple? Same programming tool as the rest of the line? All IEC 61131-3 languages? Integrated Human Machine Interface (HMI) software? Object Linking and Embedding for Process Control (OPC)? Secure Digital (SD) card interface? Price competitive? Impossible? Come and see for yourself. Let the AC500-eCo rock your world!

**TLM-02-1A Demystifying metric: NEMA vs. IEC motors**

This technical training will review some of the more common International Electrotechnical Commission (IEC) motor specifications and terminology, comparing and contrasting to comparable aspects of National Electrical Mfg. Assoc. / National Electrical Code (NEMA/NEC) definitions and descriptions. Items such as power ratings, frame size designations, cooling methods and efficiency classes will be discussed. These will be compared to the NEC definitions more commonly used in North America to provide the attendee a point of reference with respect to which motor types can be used in a given application and atmospheric condition.

**TPO-07-1A Factors to consider in the life assessment of a power transformer**

Much attention is rightly focused on the reliability risks of our aging fleet of power transformers and the enormous cost in terms of dollars and time to replace them. But there are many factors beyond age that place a transformer at risk of failure. In this session we will cover the main contributing factors, the means of assessing their likelihood of impact on a particular unit, and steps that can be taken to prioritize actions to extend their life within a limited budget.

**TPO-23-1A Power transformer field maintenance: Hands-on demonstration in oil processing trailer**

Processing of the insulating and cooling oil used in power transformers during an outage is a critical step to restoring the electrical characteristics of the oil to a condition that will support reliable service. It is important that processing is completed within an outage window and that it is done properly. This hands-on session will be conducted in an actual oil processing trailer (one of 14 owned by ABB Transformer Remanufacturing and Engineered Solutions (TRES) and available to support our customers) to demonstrate oil processing techniques, water removal, moisture limits, cold traps, filtration and the tests to confirm acceptable results.

**TRE-02-2 (NOTE: 2 hour session)****Theory of arc flash hazard and the REA Mitigation System**

Consequences of an arcing short circuit or ground fault within low- or medium-voltage switchgear can be very serious. An arc can destroy costly equipment, create prolonged downtime, and cause serious injuries to personnel. This two-hour course gives a comprehensive overview in switchgear arc fault hazard and protection methods and REA 10x – a state-of-the-art arc flash hazard mitigation system. Topics discussed include: nature of arc faults; arc fault detection mechanisms and mitigation techniques; compliance to OSHA 29 and NFPA 70E-2004 standards; IEEE 1584; and REA application examples and demonstration.

**TRO-02-1A Robotics 101**

Robotics 101 will provide a basic primer to the world of industrial robotics. The session will review the general configuration of industrial robots, the major components that comprise an industrial robot, a review of many typical applications and a review of the ABB robot portfolio.

**TTR-07-2A (NOTE: 2 hour session)****Introduction to ABB ACS800 Drives: Hands-on experience**

This technical training will provide an overview of ABB's latest Variable Frequency Drive (VFD) technology. Participants will learn about the key software characteristics that make the ACS800 drive able to handle a multitude of difficult motor control applications, and will receive hands-on experience with an ACS800 programming demo unit and programming panel.

**TTR-11-2A (NOTE: 2 hour session)****System 800xA Graphics Design hands-on experience**

This session is intended for users of 800xA systems that wish to explore the new PG2 Graphics Builder tool. While the 800xA for Harmony connect platform will be used for this session, the overall methods are similar for all connectivities. Users will participate in simple configuration exercises related to graphic displays, graphic elements and faceplates. Attend this session and see how collaborating with ABB training can enhance your knowledge and power with your 800xA system.

**WCS-50-1 Introducción al Sistema 800xA**

Una Introducción al Sistema de Automatización Extendida 800xA y los beneficios que genera. Esta presentación mostrará como el Sistema 800xA extiende la funcionalidad más allá de los límites de un sistema de control tradicional, integrando aplicaciones por medio de una conectividad sin fronteras. También en esta presentación se podrán apreciar las virtudes de la nueva versión del Sistema 800xA.

**WIN-08-1 Scalable Device Management providing productivity enhancement that grows with your business**

This session examines all of the various tools ABB has for managing instrumentation to best achieve results to meet differing needs and objectives in improving productivity. Included is a review of hardware and software capabilities used to configure, calibrate, maintain and optimize instrumentation. The covered hardware includes the local instrument Human Machine Interface (HMI) and the Mobility handhelds for HART configuration and calibration. Covered software includes DPC Manager for handheld data upload and reporting, Mobility DMS for calibration management, Asset Vision Basic for device configuration and Asset Vision Professional for device management and asset monitoring.

**WLC-05-1 Conveying the applications of disconnect switches in material handling**

From OSHA Lock Out/Tag Out devices, to the NEC requirement that a motor disconnect be placed upstream from the motor, to use in industrial control panels, this workshop provides an overview of switching requirements and applications. This workshop will show how ABB's disconnect switch product portfolio meets the needs of the material handling industry. The workshop will provide a question and answer session, as well as hands-on product review.

**WLD-04-1 Drives and motor sizing made easy**

This workshop is a cheat sheet and quick-guide to get the critical equipment choice right every time for your applications.

**WMM-09-1 New installations with MPC in North America**

In 2008, cement manufacturers started collaborating with ABB to further reduce energy costs by enhancing traditional fuzzy logic control with Model Predictive Control (MPC). Included in this workshop are case studies about two major cement manufacturers. One cement plant in Canada installed ABB's Economic Process Optimizer (EPO) with MPC to optimize heat balance and fuel costs in their pre-calciner. Another cement plant in the United States installed ABB's Expert Optimizer with MCP to increase production in their kiln and improve grinding in their finished cement mills.

**WPO-30-1 The future of wind in the United States: A viable solution to energy independence**

This class will provide attendees with a perspective on the status of the United States wind industry. The discussion will center on trends in the wind power industry and how variables such as project funding, supply chain and government legislation will impact the United States wind industry in the coming years.

**WPO-33-1 Utility/Power user interface - How utilities and electrical users can work better together**

This course will feature a free exchange between a utility executive and an industrial user on how they can work together for the common good, even with differing priorities. Both face significant challenges related to reliability, clean power, efficiency, power quality and safety. Should an electrical user own its own primary substation or can a utility-owned substation offer more advantages? What are the advantages of buying power at higher voltages? This course will offer practical insight into how to improve the relationship between utility and industrial user.

**SESSION 2: 11:00 a.m. – 12:00 p.m.****CRS-03-1 Implementation of Computerized Maintenance Management System: Johnson & Johnson case study**

To position its business processes and operational culture for lean manufacturing, life sciences manufacturer Global Biological Supply Chain (GBSC), LLC (a wholly-owned subsidiary of Johnson & Johnson) undertook the implementation of a world-class Computerized Maintenance Management System (CMMS). GBSC used SAP technology to replace a legacy system that was no longer supporting its manufacturing, reliability, IT or compliance strategies. This presentation demonstrates how GBSC was able to improve productivity by 30 percent, and realize a reoccurring annual savings of \$375k through implementing calibration of test equipment in SAP using PM (Plant Maintenance) and QM (Quality Management) modules.

**PCS-01-1 Manufacturing system security roundtable**

The usage of commercial operating systems has dramatically lowered the cost of modern systems, but coupled with the ever increasing requirement of global access, has introduced new complexities. One of the largest issues facing manufacturers today is the security of their systems' infrastructure. This roundtable, with representation from both technology vendors and end users, will explore how this issue is affecting manufacturers today. It will provide some guidance on best practices in the area of system security.

**TCS-09-1 Freelance 800F system layouts**

The Freelance 800F Compact Control System is ABB's offering for small to medium sized automation in the process industries. It utilizes Ethernet technology for its system communication. This workshop will work its way up from addressing the needs of simple structures (for students' application with Emulator) to highly distributed solutions (oil and gas pumping stations).

**TCS-19-1A Reducing time to decision and action with System 800xA**

This workshop covers how System 800xA can help reduce the time it takes for operations, maintenance and engineering personnel to make the right decisions and take the correct action. Reducing time to decision saves money, decreases waste of resources and increases uptime and Mean Time Between Failures (MTBF). Through features like personalized workplaces, intuitive navigation, integrating and filtering information and notification techniques like Short Messaging Service (SMS) messaging, plant personnel can be notified and given current, relevant information. Real-life customer applications will be shared.

**TIN-07-1A Understanding pressure and temperature measurement technology and applications**

Pressure and temperature measurements are two key measurements in effective process control. In this session, we will cover the fundamentals of how each measurement technology works and what critical considerations you need to know when specifying these field devices. The session will also cover pressure and temperature calibration and configuration in several practical examples.

**TLM-03-1 Motors in hazardous areas**

ATEX is a standard/guideline for explosion protection in the industry. Its requirements for motors in hazardous areas have created a whole new challenge for companies involved in the petrochemical, gas and oil, mining, plastics and marine industries. This seminar will help define hazardous areas, and explain how ATEX applies. More importantly, this session will cover what responsibilities lie with not only the motor manufacturer, but also the end user in making sure the requirements of the ATEX directive are met in all relevant applications.

**TPO-12-1A Hands-on overview of transformer load tap changer maintenance practices**

The function and operating principles of on-load tap changers will be presented. This will include basic Load Tap Changer (LTC) operating principles, pros and cons of each type (resistance, reactance, vacuum, arcing, etc) of LTC, typical maintenance practices, and common failure mechanisms. Additionally, examples of upgrades performed on various types of LTCs will be presented, along with a hands-on demo of the key processes necessary to perform effective LTC maintenance, such as repairs and parts replacement and testing necessary to ensure proper operation and a successful return to service.

**TPO-15-2 (NOTE: 2 hour session)****Introduction to power plant electrical systems**

This class provides an overview of the plant power distribution system and the impact that various design decisions can have on reliability and safety. Participants will be briefed on key issues such as circuit design, system configuration relative to reliability and maintainability, equipment ratings, physical layout, maintenance, environmental and safety considerations, including techniques applied to reduce arc flash incident energy levels through proper equipment selection. Equipment to be discussed includes liquid-filled and dry type transformers, low- and medium- voltage switchgear, motor control centers, and relay protection.

**TPO-26-1 Project Management 101**

This session will provide tips in project management for those engineers recently starting a new position. The type of work necessary as a new engineer is often very different from the type of work completed in school. This provides the need for a different type of planning and time management than what was previously expected. Project Management 101 will serve to help with the transition.

**WBF-01-1 A global market perspective on the effects of financial uncertainty**

ABB's Chief Financial Officer, Michel Demaré, will discuss the global market perspective on manufacturing in the current environment.

**WCS-01-1 ABB's control evolution solutions**

ABB has maintained a long-standing commitment to system owners that ensures future advances in system technologies will enhance rather than compromise their current system investments. This commitment extends to control assets, where ABB solutions minimize production risk while providing flexible, cost-effective, step-wise evolution options. For control upgrades, "rip and replace" is not an option. This workshop will discuss how it is possible to meet process control challenges by leveraging new control technologies while protecting investments in existing control applications, hardware and wiring.

**WCS-06-1 Electrical integration: A strategy for achieving unified operations and extended asset management**

Electrical integration is the next frontier in delivering a unified environment that will drive improvements in productivity, increased safety and cost savings over the total lifecycle of a plant. ABB continues its effort in this area. IEC61850, the protocol which integrates high and medium voltage substation equipment with the DCS, is now well established and used by many ABB projects. Come and listen to the success stories, and hear about the next steps in electrical integration.

**WCS-21-1 Managing plant complexity with advanced process control**

Rising competition and costs are eroding the profit margins of many process industries. Optimization is essential to their survival, but constant process streamlining brings its own problems for operators. ABB's Expert Optimizer v6.0, a computer-based system for controlling, stabilizing and optimizing industrial processes is an extremely effective solution to these issues. It is keeping industrial processes on target in over 300 sites today, with new installations coming online with regularity. Multiple case studies of its use in the minerals and utilities industries will be discussed in this workshop.

**WCS-30-1 System 800xA: Implementing version upgrades**

Follow an updated version of last year's popular Automation World presentation about the steps necessary when upgrading an 800xA Extended Automation Control System from one version to the next. The session will describe how an installation is kept updated with the latest System 800xA software and security updates, including the latest tool support.

**WCS-53-1 Llevando el Valor del Sistema 800xA a su Escritorio con Smart Client**

Durante los últimos 20 años los productores industriales han estado tratando de eliminar las denominadas "islas de información" que existen en las plantas tradicionales. Hoy, una planta típica posee entre 10 y 50 diferentes sistemas, pasando por los ERPs, MES, mantenimiento, DCS, etc, etc... Este taller mostrará la solución que ABB dispone para integrar los ambientes de negocio, producción y automatización convirtiéndolos en una planta con Gestión Colaborativa de la Producción.

**WIN-04-1 Green instrumentation engineering practices in oil and gas applications**

End user's business drivers include protecting health, safety and the environment while maximizing shareholder value. This workshop will share best practices in instrumentation engineering to help support end user business drivers. Fugitive emissions reduction, reduced utilities consumption and overall asset footprint reduction will be discussed. Several instrumentation design examples will be discussed in support of meeting big picture business objectives.

**WLC-01-1 ABB enclosed switches from the inside out**

This workshop provides an interactive approach to understanding key considerations for enclosed switches through a detailed analysis of components, standards and applications. Learn what factors contribute to the overall appearance, configuration, functionality, innovation and application of enclosed switches on the market today. See how ABB's enclosed product portfolio meets the challenge and provides an exceptional solution for the marketplace. The workshop will conclude with an open forum discussion on product trends, product requirements and emerging applications and markets.

**WLD-01-1 AC drives' competitive advantages identified**

How simple is it to install, wire, start-up and operate today's low voltage drives? See a competitive comparison of some of the major drives suppliers alongside ABB's drives. Learn what may make a difference in your selection of a low- horsepower drive.

**WLS-01-1 Batch and continuous State Based Equipment Control: Engineering using PC Equipment Library**

Could your plant benefit from an overall production improvement? State Based Control is a plant automation control design based on the principle that all process facilities operate in recognized, definable process states representing a variety of normal and abnormal conditions of the process. State Based Control implemented with the latest developments in object-based technologies, delivers direct benefits to its adopters in a variety of operational excellence categories. This results in productivity increases, higher asset utilization of both people and process, automated responses and recovery for abnormal conditions and provides an environment for knowledge capture directly into the control design.

**WMM-04-1 Industrial Mobile Ad Hoc Networks (MANET)**

This workshop discusses the use of a broadband wireless system and the difference between a Layer 2 vs. Layer 3 implementation approach including use of VLANs to segregate traffic. The use of wireless provided considerable cost savings to provide converged services including IP video, VoIP, and use of SIP to provide Telepresence for remote collaboration with individuals across the globe and address critical issues that need to be reviewed in real-time. The wireless system is called Wave Relay™, a multi-hop wireless mesh network communication system which provides the ability to seamlessly connect users, devices and networks in challenging RF environments.

**WOG-05-1 Oil and gas market Part 1: Overview and trends**

This presentation gives an overview of oil and gas emerging trends in solutions, execution methods and full scope electrical, instrumentation and control and telecom systems for the oil and gas market. The presentation is broadly divided in two parts: Part one "Overview and trends" describes recent and emerging trends in the market. Part two: "Meeting and satisfying the demands" presents products, solutions and working methods introduced by ABB in anticipation of these trends, illustrated by ongoing and recently completed cases.

**WPG-01-1 DBDOC and your Harmony Symphony INFI 90 System**

If you have Harmony (Symphony / INFI 90) at your plant, then attend this session to see how DBDOC strengthens your DCS system with a powerful search and navigation tool. Decrease time to troubleshoot problems, save money and maintain production. See why DBDOC, created by G. Michaels Consulting Ltd., is used around the world. If you already have DBDOC in your plant, see our new features that include trending internal values and minimizing the real-time data load, safe access from the Business LAN and new support for 800xA consoles. Integration with Smart-View will also be discussed.

**WPO-15-1 From the sun to the grid: Solar applications and how ABB fits**

This session will explore the applications of electrical equipment in the solar industry. You will learn about the many different ABB products that are put to use when capturing the sun's energy and converting it to useful power. The class will discuss the use of products such as low voltage controls, converters and power transformers.

**WPO-27-1 SF6 gas management for safety and environmental benefit**

SF6 gas is an excellent insulator used in high voltage electrical equipment. It is also critical that we handle it safely, and that leaks are minimized to reduce greenhouse gas emissions. This session will cover the practical aspects of working with SF6-filled equipment, including field gas analysis, handling arc byproducts, leak detection, repair and prevention.

**WPO-28-1 Technology development in the pipeline**

This course discusses recent development in power transmission and distribution technologies that improve grid reliability and energy efficiency in today's industrial environment. Advancement in HVDC/FACTS technologies, new applications in Energy Management Systems, Substation Automation, Distribution Management Systems and various pilot programs all contribute to the improvement in sustainability and reliability of the grid.

**WPP-06-1 Running paper machine drives with no pulse encoders**

This workshop will discuss how the ABB patented Direct Torque Control can be used for paper machine drives systems with no-pulse encoders. With the traditional flux vector control, the pulse encoder is a must item in the system; however, with the Direct Torque Control, there is a way to calculate the actual torque and magnetizing flux with no speed feedback obtained at all. The encoderless run has become a very common practice with the ABB AC drive systems during the past five years.

**WRO-07-1 Robotics for direct food handling**

Picking a product and placing it in less than a half a second is a difficult task. Food handling introduces additional requirements such as complying with various government regulations, as well as minimizing or eliminating product damage during the process.

**WSE-04-1A Power plant performance optimization and lifecycle support**

Leverage ABB power plant process application expertise to drive continuous improvement of plant performance. Learn how your power plant can leverage an ABB tailored support program. Specific case studies will be used to illustrate how improvements were achieved in unit ramp rate, NOx levels, overall system stability and more.

**SESSION 3: 1:30 p.m. – 2:30 p.m.****CMD-04-1 Saving big bucks: How an energy audit reveals where new motors pay for themselves**

Motors account for the majority of energy used by industry. With ever increasing energy costs, more companies are looking for ways to save money on their energy bills. An energy audit provides a comprehensive approach to reaching energy savings goals. The program starts by prioritizing where a plant can best save energy. This includes a site audit to allow the customer to make informed decisions about upgrading motors and adding variable speed drives to further control energy use. This workshop will cover a case study that illustrated how an energy audit was implemented and demonstrate the actual savings realized.

**COG-01-1A OIS/OIC evolution to 800xA workplaces at Petrobras REDUC Refinery**

Petrobras REDUC Refinery had the most operator stations based on INFI 90 equipment. This workshop shows the evolution from OIS/OIC and Conductor NT Operation Stations to Process Portal A (PPA) using Harmony Connect interface on 800xA system. The project will also show the most important topics used during conversion, in order to reach a better performance with risk mitigation once these projects were made with a hot swap methodology. Important lessons of operational excellence, optimization, efficiency and productivity will be presented.

**PBF-01-2 (NOTE: 2 hour session)****Capturing and utilizing knowledge from the retiring workforce**

As manufacturers face workforce issues such as retiring baby boomers, fewer graduates entering manufacturing and the drive towards doing more with fewer resources, capturing and utilizing the knowledge of the retiring workforce is becoming more and more important. Attend this session and participate in an open forum discussion of this critical issue and share ideas for technical people and process solutions to this universal issue.

**PPO-07-2 (NOTE: 2 hour session)****Reliability and cyber security for network management, substation automation and power generation**

This ABB and utility panel will discuss issues related to the evolving reliability and cyber security standards and how utilities are addressing the increasing system and infrastructure requirements, as well as complying with DHS and FERC/NERC requirements. The new regulatory requirements that pertain to cyber security, in particular the NERC Critical Infrastructure Protection (CIP) standards, are having impacts on the utility organization, system architecture and grid reliability. This panel will address the challenges and the balance between system security and grid reliability in the design, configuration, deployment and maintenance of equipment and systems to comply with these standards.

**TCS-03-1A Engineering for maximum performance with System 800xA**

At this technical training demonstration, you will learn how System 800xA's integrated engineering environment helps reduce overall engineering costs and improve operational performance. The primary focus for this workshop will be on engineering features that streamline the engineering workflow, enable efficient reuse of best practice solutions and facilitate continuous improvement. We will demonstrate/explain how the latest released functions and features of System 800xA enable users to perform engineering tasks more quickly, saving time and money.

**TCS-17-1 Overview and comparison of the Fieldbuses: HART, FOUNDATION Fieldbus and PROFIBUS**

This workshop is beneficial to anyone seeking information on any one - or all three - fieldbus technologies (HART, PROFIBUS and FOUNDATION Fieldbus). It provides discussion and overview of the architectures, integration components, concepts behind and various strengths of each technology. This introductory comparison sets the stage for the detailed workshops which follow. The workshops are presented by the fieldbus organizations: the PROFIBUS organization presents, "PROFIBUS and PROFINET: An Introduction;" the Fieldbus Foundation presents "Fieldbus Foundation: Beyond the Industry Standard;" and the HART Communication Foundation presents their detailed HART workshop.

**TIN-03-1A Flow technology: Selection and practice**

There are many different methods of measuring fluid flow. While this is useful, it can be very confusing. The objective of this workshop is to unravel some of the mysteries of flow technology selection and teach the student how different flowmeters work and when - and when not - to use them. This course is aimed at the engineer who has little or no experience in the intricacies of flow. It assumes no previous knowledge and covers the basics, including the flow pioneers, terminology, installation practices, flow profiles, flow disturbances, verification techniques and flowmeter selection.

**TLC-05-1A Connectivity is key: The value and ease of ABB automation solutions**

If faced with the challenge of connectivity and interoperability of ABB and / or third party products on any of the open industrial communication networks, such as Modbus, DeviceNet, PROFIBUS, Ethernet, etc., attendees will not want to miss this opportunity. Connectivity of Human Machine Interface (HMI), Programmable Logic Controller (PLC), Drive Softstarters, Breakers and Universal Motor Controllers (UMC).

**TPO-11-1A Hands-on demonstration of HMB high voltage breaker mechanism maintenance: Simplicity redefined**

ABB is known for having one of the highest energy, low-maintenance, reliable drives available today for dead tank breakers, gas-insulated switchgear and generator circuit breakers. Did you know there are only about 10 moving parts? Be present as one of our ABB high-voltage service experts de-mystifies the anatomy of the world's most popular drive. This is a hands-on course in which everyone will participate.

**TPO-18-1 Integrated instrument, electrical and control solutions for remote substation communication**

In many cases, the locations of renewable energy sources are in remote locations. This class will discuss available technologies for operating and maintaining your substation. Topics covered will concentrate on IEC 61850 communication standards, remote monitoring and wireless communication and how to securely transmit your information. Reliable consistent and secure communication systems can improve reliability and enhance scheduled maintenance, and reduce unexpected equipment damage.

**TPO-24-1 Lean-Six Sigma: What it means to engineers in power**

This session will give an overview of how the tools and skills of Six Sigma provide a more efficient way to solve problems and make decisions. Six Sigma is a rigorous methodology for application of structured problem solving; it is a way of thinking and a way of decision making. The DMADV/DMAIC approach will be further explained as an approach for engineers in power to use in manufacturing, transactional quality, commercial quality and more. With the approach focus on the important few and not the trivial many, it drives accountability for quality, output and standards.

**TTR-06-3A Communications for ACS800 Drives: Hands-on experience**

This technical training will provide you with an overview of ABB's ACS800 AC Drive with fiber optic communications. Participants will learn about the key communications characteristics that make the ACS800 able to handle high-speed communications with other controlling devices (e.g. automated controllers and Programmable Logic Controllers). This session provides hands-on experience with an ACS800 programming demo and Drives Window, Ethernet IP, PROFIBUS, and Modbus protocols.

**TTR-12-2A (NOTE: 2 hour session)****System 800xA OPC Interfacing hands-on experience**

This session will explain OPC terminology such as groups, items and properties. Participants will use test servers and clients to test OPC connectivity, apply an understanding of OPC fundamentals such as synchronous and asynchronous subscriptions to troubleshooting problems with connectivity, learn how OPC COM objects are defined in the registry, learn the 800xA OPC architecture, interface a third party OPC Server to an 800xA system, and interface a third party OPC client to an 800xA system.

**TTR-13-2A (NOTE: 2 hour session)****Single loop control methods**

This technical training will furnish you with the skills to tune basic control loops (PID controllers). The focus will be on matching the controller to the process characteristics. The tuning methods learned can be applied to any PID controller, independent of the vendor. A software process simulator is used for hands-on practice.

**WCS-05-1 Electronic Device Description Language (EDDL) integration**

If future plans include management of devices that are integrated into ABB System 800xA, then learning about Electronic Device Description Language (EDDL) is a must. Many new instruments already support EDDL, and System 800xA keeps you current with the latest features developing within the process automation industry. Similar to, but different from Field Device Tool and Device Type Managers (FDT/DTM) that System 800xA already supports, EDDL provides another window into the inner workings of your field devices.

**WCS-14-2 (NOTE: 2 hour session)****Getting the full value of ABB's Lifecycle programs**

ABB has a number of policies and programs that help manage and sustain automation assets through their lifecycles. Learn how these policies and programs can minimize total cost, maximize return on investment and help derive added value from automation systems to meet ever changing business needs. This workshop will discuss the ABB Lifecycle Policy, 800xA software support policy, the software asset management program (Automation Sentinel), and the system evolution planning process. These topics will be discussed in the context of the financial arguments required to justify long-term system lifecycle management needs.

**WCS-16-1 Implementing System 800xA connectivity to third party DCSs and PLCs**

ABB's Industrial IT System 800xA platform provides the infrastructure to consolidate disparate controllers, such as PLCs and third party DCSs, allowing for seamless access and control. This reduces the number of 'pieces of glass' in the control room which improves operator effectiveness by reducing time to decision and action as well as reducing lifecycle costs. This workshop will show options System 800xA users have when interfacing third party control systems to System 800xA.

**WCS-34-1 System 800xA system sizing guidelines**

In this workshop, you'll learn how best to apply the latest optimized System 800xA configuration rules, based on accurate capacity calculations, to properly "dimension" an 800xA system. We will also look into how to determine how many controllers, workstations and servers you will need. Additionally, we'll discuss virtualization; the latest technology to help you shrink the footprint, while achieving system maintenance advantages.

**WCS-36-1 Using energy management to drive profitability and sustainability**

The continued rise in energy costs has significantly impacted the profit margins of manufacturers. While the introduction of alternative fuels may lessen this impact, it adds new complexities to the overall management of energy throughout a single facility, especially from the corporate perspective. This workshop will examine this problem and showcase a solution that increases profitability in a sustainable fashion.

**WCS-61-1 Servicios de Optimización a Distancia: El Apalancamiento de Acceso Remoto para la Entrega de Experiencia Mundial**

Aprenda como los expertos en la materia de ABB de todo el mundo, pueden vigilar, diagnosticar y optimizar activos y tecnologías de rendimiento del proceso. Grandes cantidades de datos pueden ser procesadas por medio de herramientas de cálculo y evaluaciones de los expertos para proporcionar valiosas evaluaciones y recomendaciones que nos lleven a optimizar el rendimiento.

**WIN-01-1 Boiler chemistry: Critical measurements safeguard expensive capital equipment**

The Electric Power Research Institute stated that 50 percent of all plant outages are a result of boiler tube corrosion. This frequently occurs due to poor control or neglect of the boiler cycle chemistry. This is costing the U.S. power industry between \$5 billion and \$10 billion. For over 50 years, ABB has been at the forefront of design, development and manufacturing of on-line chemical analyzers for the complete boiler water cycle. This presentation is intended to describe these issues, and how ABB can help to improve plant availability.

**WLC-02-1 ABB low voltage circuit breakers**

Attending this presentation will show you how ABB circuit breakers provide a compact solution for all your protection requirements. Offering high performance, versatility and standardization in a range of Tmax molded case circuit breakers, the Emax series of low voltage circuit breakers features totally innovative design, ease of installation and use and modularity for the trip units. ABB offers an ideal solution for the growing requirements of designers, switchboard and switchgear manufacturers, OEMs and end users.

**WLD-03-1 Circuit breakers: Can I use them to protect my Variable Frequency Drives (VFD)?**

Do circuit breakers now available to the market let through energy that is too high to properly protect drives? This session provides a review of what is offered now, and what you should know in terms of appropriate use of circuit breakers in complement to your Variable Frequency Drives (VFD).

**WLS-06-1 Process Analytical Technology (PAT) system introduction**

This workshop presents a summary of ABB's Industrial IT for Process Analytical Technology (IIT for PAT) system including a discussion of the system set up, operation, its management of data, and integration with existing enterprise IT systems. The presentation will provide highlights of the benefits of ABB's latest release 2.0. The interaction of the PAT system with analyzers and a process control system will be discussed. In addition to the PAT system presentation in this workshop, a PAT system will be available for demonstrations in the life science industry booth in the exhibit hall throughout the event.

**WMM-02-1 cpmPlus Expert Optimizer 6.1: Reducing energy costs and operational complexity for industries**

Rising competition and costs are eroding the profit margins of process industries. Optimization is essential to their survival, but constant process streamlining brings its own problems for operators. The new version of ABB's Expert Optimizer, a computer-based system for controlling, stabilizing and optimizing industrial processes, provides yet more functionality to effectively enable collaboration among the system components and thus increase productivity and profits. Two cases will be discussed: Optimization of a minerals flotation circuit, and management of an industrial steam plant in real time market conditions.

**WOG-06-1 Oil and gas market Part 2: Meeting and satisfying the demands**

This presentation gives an overview of oil and gas emerging trends in solutions, execution methods and full scope electrical, instrumentation and control and telecom systems for the oil and gas market. The presentation is broadly divided in two parts: Part one "Overview and trends" describes recent and emerging trends in the market. Part two: "Meeting and satisfying the demands" presents products, solutions and working methods introduced by ABB in anticipation of these trends, illustrated by ongoing and recently completed cases.

**WPO-13-1 Environmental considerations in the design and evaluation of transformers**

Utilities today are facing new environmental issues related to transformer efficiency, particularly in urban areas. This course will examine these considerations and look at transformers today that are reducing physical losses, increasing efficiency and reducing energy losses. In addition to the above, there will be time for discussion on what is being done related to Department of Energy requirements for new transformer evaluation.

**WPO-50-1 Aplicacion de Transformadores Opticos Para Instrumentos**

Desarrollo y aplicación de nuevos transformadores de instrumentos de MT y BT. Este curso lo llevará a través de una revisión sobre los conceptos principales detrás del diseño de transformadores de instrumentos de Media y Baja Tensión y la tecnología disponible actualmente para comprender de mejor manera como los requerimientos especificados por el usuario final afectan el diseño de estos transformadores. Además vamos a repasar la especificación de transformadores de corriente y de voltaje basada en la Norma ANSI/IEEE para Transformadores de Instrumentos para luego finalizar con un repaso acerca de las aplicaciones de esta línea de producto.

**WPP-08-1 Web imaging overview and update**

Over the past few years web imaging technology has seen remarkable advancement in the areas of image quality and classification accuracy. ABB's new generation of ultra-fast cameras, coupled with leading edge illumination technology, can now detect and identify all interesting defects found in papermaking processes and provide photorealistic images in real-time, even on the fastest production lines. This workshop will describe the latest improvements to ABB's industry-leading HDI800 system in the area of information usability and data integration with related ABB products, such as the System 800xA based QCS platform.

**WRO-08-1 Robotics packaging for household care products**

Robot systems in the household care products industry provide a combination of control and flexibility that exceeds manual packing. Specific applications will be reviewed that will identify the key system features.

**WRS-03-1 Reliability assessment: A critical step to effective maintenance**

Many organizations overlook and underestimate the financial contribution maintenance can deliver. This presentation provides an overview of how organizations can use a benchmarking process to identify plants' performance strengths, recognize opportunities for improvement and deliver an actionable roadmap of recommendations.

**SESSION 4: 3:00 p.m. – 4:00 p.m.****CMD-03-1 Replacement and retrofit of large motors: Challenges and solutions at a power utility**

Replacing large motors is a common practice but requires attention to many technical application details and relevant standards. While the theory of motor design has changed little in the last 50 years, today's production methods, raw materials, insulation and protective devices are nothing like their predecessors. Output requirements, local standards and customer expectations regarding machine performance have also changed. Often an upgrade part of the retrofit and the final package can be very different from the original design. This workshop will highlight the key aspects to proper motor retrofits and look at a specific power plant case study.

**COG-02-2 (NOTE: 2 hour session)****Full scope electrical, automation and telecoms project: Shell Ormen Lange**

The Ormen Lange project had many challenges to overcome in project execution and providing operational excellence. By utilizing ABB's electrical, automation, safety and telecommunications products, systems and integration, overall project risk was reduced and operational excellence achieved. This provided common platforms for data to information and from the seabed to the onshore control and monitoring facility. Learn how your company can take advantage of these technologies and ABB's expertise in this arena.

**COG-06-1 Oil movements blending and storage: An overview, execution process and benefits**

Are you happy with your oil movements storage and blending solution? What questions should you be asking yourself? How can you link the refinery schedulers, the blend schedulers and the offsite operators together so that they work in a cooperative approach? What is the right split between the on-line real-time world and the off-line planning and scheduling world? What technology is currently available, and how does it work? Can the analyzers be made to work? We will discuss some typical project issues and experiences, and how these have been resolved.

**TCS-02-1A Compact Products 800 overview**

This technical training offers an overview of Compact Products 800 - a range of products that can be used individually or combined to create cost-effective control solutions. Compact Products 800 are built with openness in mind, and are based on standards to ensure that they can be combined with other products on the automation market. Learn how Compact HMI 800, AC 800M controllers with Compact Control Builder, Panel 800, S800L I/O and S800 I/O all can play key roles in your customized control solutions.

**TCS-06-1 Freelance 800F demonstration: Basic loop configuration**

This workshop covers some basic configurations of ABB's Freelance control system - ABB's offering for small to medium sized automation in the process industries. There will be an installation demonstration, as well as a brief explanation of the Freelance architecture. There will also be discussion of open and closed loop configurations, use of graphic displays, trends and log configurations.

**TCS-24-1 System 800xA for Advant Master control evolution update**

This workshop provides both an update on the additional steps taken by ABB to protect your original Master or Advant with Master SW system investments and lower your costs and risks to evolve to System 800xA, as well as a case study. The case study discusses how Klabin, the Brazilian pulp and paper company, implemented System 800xA to upgrade their existing Advant Master system, allowing them to achieve full integration between mill parts as well as increased productivity.

**TIN-04-1A How to configure a pressure and temperature transmitter**

There are several programming tools for configuring temperature and pressure transmitters. In this session, we will cover these programming tools, which include the use of handheld communicators, PC software programs and the use of the integral display. We will include hands-on training utilizing some of these tools.

**TLD-03-1 Emergency-stop and unintended-start drive requirements: Here's how you meet them**

What do NFPA 79, EN 954-1, and IEC 60204-7 require? What drive solutions can ABB offer? What additional hardware is needed? What responsibility does the OEM or integrator have? How does the complete solution all go together? This session provides the answers you need.

**WCH-01-1 Best practice for low risk chemical project execution**

This session provides an understanding of ABB's engineering methodologies when designing projects for the chemical industry. It is focused on optimizing engineering, while minimizing risk. The benefits of using object-oriented programming techniques function diagrams, pre-configured and pre-tested libraries and bulk engineering methods will be highlighted. Participants will see the advantage in starting a project with ABB's chemical solution template that utilizes industry best practices and makes use of generic batch libraries.

**WCS-08-1 Energy integration, collaboration between manufacturing and utilities**

Coordination of the production needs for power and steam generation plays an essential role in several industries. High reliability requirements, large variations in energy consumption and changing market conditions are all critical factors. ABB's cpmPlus Expert Optimizer (EO) and cpmPlus Energy Management and Optimization (EMO) enable producers to manage this complexity. EMO monitors energy efficiency and costs, ensures power balance and generates load forecasting and planning (among other features), while EO increases power output, boiler efficiency and usage of most efficient boilers while reducing steam parameter variability (and more). Use both for true collaboration of production and utilities.

**WCS-13-1 Collaboration with the operator in focus**

This workshop focuses on how you can better adapt the operator environment for a more collaborative and productive operation. The fact is that we will have a shortage of operators within 5-10 years. Therefore, it is important to put the operator in focus, to create a more attractive working environment and to design your control rooms to better accommodate the needs of the future, based on ergonomics and human factors. See how the features of System 800xA Operations and the Extended Operator Workplace can enable users to perform operating tasks in a quicker, more secure way, saving time and money.

**WCS-22-1 PROFIBUS and PROFINET: An Introduction**

PROFIBUS is widely used by ABB to provide the benefits of fieldbus to end users. This introduction provides an overview of the technology and highlights the benefits. PROFINET, the Industrial Ethernet companion to PROFIBUS, is also introduced. See how these two technologies work together and with other fieldbuses, including HART, to provide connectivity to any device. Wired and wireless; process, discrete and motion control are integrated to provide a plant-wide solution.

**WCS-23-1 Reducing risk with System 800xA High Integrity**

At this presentation, you will learn how System 800xA can help you reduce risk to people, the environment, and business through its High Integrity Safety Instrumented System (SIS) technology. We will talk about industry requirements throughout the safety lifecycle, and how System 800xA can provide the most comprehensive platform for process safety management, including safety engineering systems, services, instrumentation, logic solvers, and final control devices.

**WCS-31-1 Report on new projects from the System 800xA Customer Reference Group**

Automation and Power World 2009 marks the 3rd anniversary of the System 800xA Customer Reference Group. This 25+ member System 800xA user's community represents multiple industries and countries whose purpose is to review future product direction and collaborate with ABB to provide input and guidance on which new features are implemented in System 800xA. Come to this workshop to find out how this group functions, its accomplishments and how you can participate.

**WCS-52-1 Reducción de Riesgos Mediante Sistema 800xA High Integrity**

En esta presentación discutiremos como la plataforma de control ABB System 800xA permite reducir riesgos para el personal, el ambiente y las corporaciones mediante el uso de tecnología de alta integridad para Sistemas Instrumentados de Seguridad (SIS). Los tópicos a comentar incluyen los requerimientos de regulaciones e industrias durante todo el ciclo de vida de las protecciones de seguridad, y como Sistema 800xA puede proporcionar la mas completa plataforma para administración de la seguridad, incluyendo ingeniería de sistemas, servicios de soporte a instalaciones, instrumentación, controladores, y elementos de control final.

**WIN-11-1A Wireless and asset management in process industries**

The arrival of the industry standard WirelessHART specification has resulted in the development of wireless instruments that can work together within a multivendor application. This presentation will describe typical applications of monitoring, control and asset management using such a wireless instrument network.

**WLC-04-1 ABB's approach to critical power**

Looking at critical power and its scope, this session highlights the technical characteristics of ABB overcurrent protection solutions that best suit these applications. This session will also evaluate and discuss various approaches to succeed in the critical power market segment.

**WMM-05-1 Integrated and modularized approach for electrical systems in industrial plants**

This workshop provides a view of integrated solutions to the electrical requirements of an industrial plant. The scope of supply encompasses the complete electrical design, equipment supply including equipment required for high-voltage switchyard, medium-voltage switchgear, power distribution centers, motors and drives and motor control centers, modularization, integration and pre-testing prior to site installation. The discussion will cover the benefits of such an approach, as well as the collaboration with the EPCs to enhance their offering to customers.

**WPO-02-1 Applying sensor technologies for the Smart Grid**

This course will examine ways to apply sensor technology to the evolving Smart Grid of the future, and how these sensors can be applied to deliver analog and digital data for deterministic actions related to operational state changes, apparatus, failures and life estimation. The course will also look at how existing technologies can communicate with new control and automation microprocessors.

**WPO-05-1 Bright future advancements in solar technology**

This course will examine the technology of solar energy and the many advancements that make it a viable source of power. Discussions will include recent innovations and how they improve efficiencies and cost effectiveness, as well as challenges that impact the growth of this industry.

**WPO-18-1 How the 2010 DOE National Efficiency Standards will impact your transformer purchase**

This course will describe the new efficiency standards for distribution transformers manufactured for use in or shipped into the United States and its territories that will be effective January 1, 2010. The development process as well as the scope of transformer ratings that are impacted will be discussed. Different design strategies to meet the standards and the associated cost impact of the various strategies will also be included in the discussion. Finally, the methodologies for ensuring conformance with the standards by the manufacturers will be addressed.

**WPP-05-1 Quality control system overview and update**

This workshop provides an update on pulp and paper Quality Control Systems (QCS). Topics include an overview of current systems, latest developments and the use of the system to measure and control paper quality. The session also covers how to improve the efficiency and profitability of paper machine operation, interact with the organization, transmit appropriate data to the right place in the right form, work as a unifying force in the operation of the machine and its human caretakers, foster collaboration within the organization with internal and external resources and grow with your evolving needs.

**WRO-01-1 Future automation trends in poultry**

Robotics in the consumer industry manufacturing have focused on the end-of-line processes, such as packaging. The poultry industry employs a very sizeable workforce in the primary processing of their products, and the labor tasks are dangerous and not very desirable. Intelligent automation and robotics is moving upstream in the process.

**WSE-03-1 The new abb.com, with "My ABB" and single sign-on, streamlines your abb.com Internet experience**

In today's fast-paced world, limited time is available for time-consuming information gathering and procurement processes. The all new abb.com, with single sign-on, can streamline your Internet experience. Learn how your personal "My ABB" page can be customized to the services you need. The "Smart" abb.com provides 24-hour access to products, spare parts, ordering, installed base, remote monitoring and project related information through a standard web browser and secure log-in. We encourage you to join this workshop to see how the smart abb.com can work for you.

**SESSION 5: 4:30 p.m. – 5:30 p.m.****CCS-02-1 Alunorte: Integrating different vendors' fieldbus equipment with System 800xA**

This case study shows how, through a collaborative effort, ABB, Alunorte and third party suppliers realized integration of field devices to the 800xA automation system. Short commissioning time has been attributed in part to the success of this collaboration. Alunorte's objectives to obtain maximum integration between field devices and the control and supervisory system, and to acquire information allowing future implementation of an asset management and optimization system were successfully met.

**CCS-13-1 Vale Inco asset optimization case study**

In this workshop, Vale Inco engineers describe the success Vale Inco realized by utilizing ABB's asset optimization as a maintenance management tool. At Vale Inco, an ABB full service site, maintenance is a profit center, not a cost center. Here, maintenance personnel are incentivized to improve Overall Equipment Effectiveness (OEE) - with impressive results. Anyone looking to lower costs or otherwise improve their maintenance department will benefit from attending this workshop.

**COG-05-1 Lady of Victorories: A power generation barge for Agip KCO**

The 120 MWe (megawatt) power generation barge named "Lady of Victorories", has been delivered to provide electrical power to the Kashagan field. This field is the largest oil field discovered in the North Caspian Sea, where drilling complexity and hostile conditions demand exceptional power reliability. The Module No. 8 built by a Consortium formed by ABB SpA and Rolls-Royce Engineering Plc. was the first process barge to sail away to the Caspian Sea in April 2007.

**CRS-06-1 Effective reliability focused partnerships help drive sustainable success: Vale Inco case study**

In today's increasingly competitive business environment, challenges and risks associated with investing in plant improvements are higher than ever. For this reason, companies investing in operational improvements may wish to partner with world-class organizations that have expertise in complementary areas that can help accelerate short-term benefits and long-term productivity. This presentation will outline the key elements of a successful partnership, and highlight examples from ABB Full Service, a partnership arrangement that improves plant operations through maintenance excellence, with specific reference to Vale Inco's Newfoundland and Labrador Mine Site.

**PPO-09-1 Requirements for improved protection and control using distribution automation**

This panel discussion will explore issues and requirements related to applying sensor, microprocessor and local distributed intelligence to create a modernized power grid. For example, communication infrastructure requirements are a significant issue when automating feeders and substations. The course will also look ahead at soon-to-be-available technologies that provide greater protection and control to the distribution apparatus.

**TCS-07-1 Freelance 800F demonstration: Using macros for fast graphics configuration**

Macros can be implemented in ABB's Freelance control system, and are designed to speed up the process of creating a graphical display. This workshop will employ the use of the newest macro library, explaining how to import and export macros, use macros in projects, create new and edit existing macros. Common workarounds will also be covered.

**TCS-18-1A Panel 800 configuration and operation**

This technical training offers an overview of Panel 800 - a range of high-resolution control panels with robust exteriors, an intuitive, ergonomic design, market-leading performance and stunning graphics. Panel 800's wide range of advanced functions includes integrated alarm handling with AC 800M. Learn how Panel 800 forms part of a common system where alarms/events can be displayed, managed and acknowledged from all connected panels, Human Machine Interfaces (HMIs) and PCs.

**TCS-27-1 System 800xA for Harmony primer**

This workshop is a general overview describing the functionality of System 800xA when applied to your Harmony / INFI 90 system. See the additional steps taken by ABB to protect your original system investment and lower your costs and risks to evolve to System 800xA. (Customers familiar with 800xA for Harmony might see this as a refresher course).

**TIN-05-1A Introduction to on-line analytical instrumentation**

This program will introduce the audience to liquid and gas analytical measurement for the power, water and process industries. Theory of operation and common applications for analytical instrumentation will be covered. The A to Z of analyzers, including ion selective electrodes, zirconia oxygen, optical liquid analysis and conductive measurements will be discussed.

**TLC-02-1 Application of current limiting breakers and the current limiting panel boards**

This session offers technical information for the new Proline panelboard and the advantages of ABB's current limiting breaker in a panelboard application versus its predecessor, the zero crossing breaker in the same application. Learn why the ABB Proline panelboard has no equal, when it comes to the protection of critical applications.

**TPO-03-1 Benefits of a digital generator excitation system: Retrofit and upgrade schemes**

With increased demands on power plant availability and reliability, the generator excitation system has a powerful impact on the plant's performance. Advances in excitation system technology provide improvements in the quality of the generator voltage and reactive power and control of the excitation system. This session provides an overview of generator excitation systems and how the recent advances in technology can be applied in an upgrade project.

**TPO-16-1 Introduction to relaying, protection and control**

This session will serve as an introduction to relays. There are many different types of relays and multiple applications. The focus for this session will be protection and control. Protection and control relays include high range, medium range, basic range and multi-purpose relays.

**TPO-19-1 Maintenance, safety and life extension of high-voltage circuit breakers**

An aging fleet of unmaintained high-voltage circuit breakers poses a reliability risk as well as a risk of increased expense. We will discuss the information needed to make a sound decision on which equipment to target extension programs for and the work scopes needed to accomplish that goal. We will also cover popular maintenance practices, including new tools such as computed radiography, which can dramatically reduce outage time and maintenance costs. We will also introduce a new safety device that can be deployed during maintenance and construction activities to protect personnel.

**TPO-20-1 Maximize the availability of your turbines and wind farm system**

This session will provide an overview of the equipment in a wind farm system, and provide recommendations for service and maintenance recommendations to maximize the reliability and safe operation of this investment. We will discuss the many variables that effect performance and reliability of the system. The equipment covered will include converters and transformers.

**TPO-23-1B Power transformer field maintenance: Hands-on demonstration in oil processing trailer**

Processing of the insulating and cooling oil used in power transformers during an outage is a critical step to restoring the electrical characteristics of the oil to a condition that will support reliable service. It is important that processing is completed within an outage window and that it is done properly. This hands-on session will be conducted in an actual oil processing trailer (one of 14 owned by ABB Transformer Remanufacturing and Engineered Solutions (TRES) and available to support our customers) to demonstrate oil processing techniques, water removal, moisture limits, cold traps, filtration and the tests to confirm acceptable results.

**TTR-09-1A System 800xA Asset Optimization hands-on experience**

In this workshop, participants will configure and deploy asset monitors in the 800xA Extended Automation system. Included are asset monitors for fieldbus devices and PC Network and Software Monitors (PNSM). Examples of work order submission to a Computerized Maintenance Management Systems (CMMS) such as SAP and Maximo will be shown. This session also covers how adding asset monitoring aspects to your plant objects will provide powerful collaboration between maintenance and operations.

**WBF-02-1 CEO Town Hall meeting**

Meet ABB's CEO, Joe Hogan, in a town hall meeting format. Hear about his vision for ABB's future and engage in an open discussion of the opportunities and challenges associated with being competitive in today's global marketplace.

**WCS-18-1 Justifying projects from a financial perspective**

A plant manager we interviewed said, "If you can't show me the results on a balance sheet, it didn't happen." This workshop will focus first on explaining how projects are financially justified; then on showing how improvements in manufacturing can impact the financial statement. It will explain those improvements in terms that can be readily understood by financially focused managers.

**WCS-29-1 System 800xA engineering with Function Designer and bulk tools**

This technical workshop will provide to attendees a demonstration of ABB's System 800xA's Function Designer. Function Designer is a graphical tool which is used to create control logic via easy to read diagrams. You will also learn how System 800xA's bulk configuration tools can be used to rapidly create a project configuration using these logic diagrams.

**WCS-51-1 Mejorando la Visibilidad a través de una Gestión Integrada de la Información**

"¿Qué debo hacer para integrar todos los datos que provienen de una variedad de fuentes y transformar esos datos en una información valiosa en forma de informes y pantallas?" Esta presentación se centrará en cómo utilizar los productos de ABB Industrial IT para consolidar dentro de la plataforma del Sistema 800xA a otros sistemas de producción o de gestión, presentando de manera consolidada la información. Vamos a demostrar cómo de manera rápida y fácil, se puede establecer la conexión con diversos sistemas , y cómo la información puede ser utilizada para proporcionar valor para los diferentes usuarios.

**WGC-02-1 Hints and tips for undertaking practical Safety Integrity Level (SIL) determination**

To comply with IEC61511, Safety Instrumented Systems on process plants need to be assessed for their required reliability, which affects the system architecture and proof testing requirements. This presentation gives hints and tips for the Safety Integrity Level (SIL) determination process, covering the range of methods available and calibration requirements.

**WIN-10-1A What's new in instrumentation and why it matters**

This workshop covers trends in the instrumentation market, how ABB products are addressing these trends, and most importantly, how these trends and advances translate into tangible benefits to plant owners and operators. We will discuss both new measurement and control technologies and new applications for mature products and technologies, along with brief case histories where appropriate. Attendees are invited to participate in a frank discussion on which topics in the news will really change the landscape, and which ones won't get past water-cooler discussions. Join us for a fast-paced and interactive session.

**WLC-06-1 Disconnect switches, stainless steel and the food and beverage industry**

This workshop offers a general market overview of the applications, trends and requirements of the food and beverage processing industry, relative to disconnect switches. Understand how and where disconnect switches are applied in food and beverage processing equipment and systems, and how ABB's disconnect products provide superior solutions for this industry.

**WLD-06-1 Easily meet your harmonics specification requirements in water applications**

Meeting the specification requirements for low harmonics in water and wastewater motor-control applications is a must, as utilities and government agencies review their product and system options for new installations and retrofits. Ultra-low harmonic drives focus on prevention as the cure, rather than as mitigation as a fix. This strategy and product solution makes it easy for you -- whether you are a consulting engineer, system integrator, work for a water district, or are an end user -- to meet your specifications handily and easily.

**WLS-04-1 NNE Pharmaplan: Identifying the ROI for PAT and automation investments**

Since the FDA revolutionary white papers in 2004, the industry has talked non-stop about the potential of Process Analytical Technology (PAT) and more recently, Quality by Design (QbD). These topics have found regular spots in conferences, press and internal company discussions. It has been widely stated that the benefits are potentially huge, and that this way of developing and manufacturing life science products offers the opportunity to 'catch up' with other industries such as food and electronics, which have their processes down to a 'science' rather than an 'art'.

**WMM-07-1 Large mills driven by ABB Frequency Converter**

The way of powering mills has a long and technically interesting story. The tendency was dominated by the market demand, the advanced process possibilities and needs, and by the mechanical and the electrical technology. Mill sizes have now increased, and because the torque can not be transmitted by one pinion, twin pinion solutions have been the way to power the mills. However, the twin pinion solution was electrically only possible when load could be shared evenly between the two pinions. With a voltage source inverter drive system, this is nowadays achieved providing additional benefits to the process.

**WPO-22-1 Lean manufacturing's unexpected windfall: A lower carbon footprint**

Lean manufacturing is a well-known tool you can use to meet competitive threats and achieve sustainable competitive advantage. But your lean initiative creates more than just those obvious financial benefits - it also allows your company to drastically reduce its carbon footprint! This seminar will teach you how to highlight the green benefits that flow naturally from your company's lean initiative so you can spotlight your company's newly lowered carbon footprint and enhance your company's image as a friend of the environment - while still increasing your profits!

**WPO-52-1 Aplicación de Transformadores de Distribución con Énfasis en Nuevas Aplicaciones Eólicas**

Criterios de aplicación de los transformadores de distribución, pérdidas, nueva norma del DOE sobre eficiencia de transformadores. Normas ANSI. Descripción de los componentes usados en los transformadores de distribución. Instalación de transformadores de distribución y restricciones en el uso de los transformadores. Uso de transformadores tipo pedestal en instalaciones de generación eólica.

**WPP-03-1 Cross direction actuator systems overview and update**

This session will feature an overview of ABB cross direction actuator systems. Results from recent installations will be presented along with guidelines for selecting the most appropriate actuator for the application.

**WRO-09-1 USDA washdown requirements**

Compliance with government regulations is required for machinery involved in the process and packaging of specific food types. This presentation overviews the specific regulatory agencies, their areas of jurisdiction, procedures for compliance and basic design guidelines for machine design.

**WSE-02-1 Excellent service strategies for ABB Control Systems and products**

Learn how ABB embeds service in products to ensure that an excellent service strategy is in place, in order to provide reduced total cost of ownership, enhanced overall equipment effectiveness and increased reliability.

## Wednesday, March 25

### SESSION 6: 8:00 a.m. – 9:00 a.m.

#### **CCS-07-1 Energy management at Rautaruukki Steel**

Steel manufacturing is, by nature, an energy intensive operation. This session will examine how Rautaruukki Steel has worked with ABB to improve performance and profitability by lowering overall energy costs in a managed, sustainable fashion.

#### **CMD-01-1 Life Expectancy Analysis of motors and generators: Reduce downtime and protect your investment**

The Lifetime Expectancy Analysis Program (LEAP) is a systematic and unique approach to motor maintenance management. When motors and generators advance in age, the risk of failure increases. Unplanned downtime and repairs are extremely costly and can be prevented with a sound preventive and predictive maintenance program. LEAP offers proactive anticipation of repairs and replacements that extend motor lifetime and boosts ROI for the entire driven system. This workshop will cover the process and goals of LEAP, as well as discuss a specific case in which LEAP has been employed successfully for the customer.

#### **COG-04-1 Integrated operations and the future for oil and gas installations: TAIL**

This session focuses on business value with use of integrated operations for upstream oil and gas fields. We will focus on case studies in operation, and current trends of new technology and methods. This session will fit those who are considering an upgrade of their installation and are looking into improved utilization of their process plant, extensive use of condition based maintenance, investing in new technology such as historian, wireless communication and asset management systems.

#### **COG-10-1 Wireless I/O and enhanced gas well operation and production**

Drilling multiple natural gas wells from a concentrated pad site has become standard operational practice over the last few years. The need to minimize the environmental footprint in many regions and horizontal drilling has been the driving force. The opportunity arising from this practice is the ability to control multiple wells from a single, centralized RTU capable of monitoring performance and performing optimization control functions. More capable low power RTU's coupled with the advance of wireless I/O radio technology provides lower cost systems and improved well performance.

#### **CRS-04-1 Planning and scheduling help achieve profitability improvements: Rubbermaid case study**

The plant's previous preventive maintenance system was an "un-championed," clerical-driven, non-scheduled, "hit-and-miss" operation. ABB's PM30 Hosted Maintenance Management System was installed in September 1992. Calendar and schedule driven, with leveled task load planning, PM30 has helped maximize machine capacity and run-time, and minimize machine downtime for major repairs. This presentation explores how PM30 coupled with ABB's world-class experience helped Rubbermaid improve processes and profitability.

#### **CSE-01-1 Boiler Optimization services: Success at Arkema**

The Boiler Fingerprint Optimization Service delivered in Spring/Summer of 2008, paid for itself in four months and continues to provide savings. Boiler Fingerprints were performed on four boilers at this site. Annual savings estimates are \$200,000 to \$300,000 per year. Energy efficiency improvements will continue to provide value year after year for Arkema.

#### **PPO-11-1 Techniques used to extend the life of critical and aging power plant assets including large motor**

This panel discussion provides an open forum to discuss the benefits of extending the life of existing power plant electrical equipment. An overview will be provided on equipment condition assessment approaches along with different life extension programs including upgrades, retrofits and refurbishments. Economic justification of these life extension programs will also be discussed. The equipment covered will include liquid-filled power transformers, low- and medium-voltage switchgear, protection relays and high-voltage circuit breakers. Attendees are encouraged to discuss their views and experiences with their plant electrical equipment life extension programs.

#### **TCS-08-1B Freelance 800F overview and update**

The Freelance 800F Compact Control System is ABB's offering for small to medium sized automation in the process industries. This workshop provides general information about the system as well as an update on the latest news. Learn about the building blocks of this system as well as the brand new AC 700F controller, which bridges the gap between PLC and DCS.

**TCS-23-1B System 800xA introduction**

This training session will introduce the System 800xA Extended Automation System and the benefits it delivers. This overview presentation will exhibit how System 800xA extends functionality beyond that of other control systems through unparalleled connectivity, integrated applications and its many industrial IT enabled partners. This presentation sets the stage for many subsequent sessions and shouldn't be missed.

**TCS-25-2 (NOTE: 2 hour session)****System 800xA for DCI primer**

This workshop is a general overview describing the functionality of System 800xA when applied to your DCI System Six control system. See the additional steps taken by ABB to protect your original system investment and lower your costs and risks to evolve to System 800xA. (Customers familiar with 800xA for DCI System Six might see this as a refresher course).

**TFM-04-3 (NOTE: 3 hour session)****Operating and maintaining Stressometer Master Piece system - Part 2**

This course teaches students basic, theoretical and practical flatness measurement and flatness control using Stressometer Master Piece system. The training targets people who will perform operation, service and maintenance on Stressometer Master Piece system. It is desired that students have knowledge of the target process and basic knowledge of mechanics and electronics. Upon completion of this course, students will be able to describe the basic design principles of Stressometer Master Piece and its range of functions, and perform basic operation, maintenance and service of the Stressometer Master Piece system.

**TIN-01-1A A simplified approach to loop tuning**

Loop tuning can often present problems of where to start and which terms to use. This session will present the control definitions, and provide a simple yet effective way to estimate the final tuning values for proportional or gain, integral, and derivative settings for your process.

**TLC-09-1 Learn how ABB's rail design software can make your time more efficient**

Participants will learn how to effectively design and build a rail assembly for low voltage applications. Using our new ABB Easy Rail Design software, attendees will learn how to configure and design rail assemblies in a fast and easy way. Our new software includes CAD capabilities and the possibility of incorporating other ABB low-voltage din rail-mounted products on the same rail. Looking for a quick and easy solution to save design time and make labor more efficient? This technical session is for you!

**TLD-04-1 Machine production in high volumes: Parameter loads in three seconds without power to the drives!**

Time is money when you have a high volume of machines to produce; FlashDrop from ABB saves you both. This session shows you how to upload/download drive parameters in seconds – and no power to the drive is needed!

**TPO-23-1C Power transformer field maintenance: Hands-on demonstration in oil processing trailer**

Processing of the insulating and cooling oil used in power transformers during an outage is a critical step to restoring the electrical characteristics of the oil to a condition that will support reliable service. It is important that processing is completed within an outage window and that it is done properly. This hands-on session will be conducted in an actual oil processing trailer (one of 14 owned by ABB Transformer Remanufacturing and Engineered Solutions (TRES) and available to support our customers) to demonstrate oil processing techniques, water removal, moisture limits, cold traps, filtration and the tests to confirm acceptable results.

**TPO-32-1 IEC 61850**

What is IEC 61850? In what ways can and can't IEC 61850 be used? What kind of applications will benefit from IEC 61850? How can you by using IEC 61850 make your substation automation systems more capable and simpler at the same time? Here we will give you the basics of IEC 61850, and also give you application examples.

**TPO-33-1 Intelligent sensors for data acquisition from electromechanical substations**

Acquiring communications and data in an electromechanical substation typically requires a utility to perform a wholesale upgrade of the entire panel to microprocessor relays, which can be very costly. The cost to upgrade a substation includes extensive engineering, new relays and panels. We will introduce a new Intelligent Data Sensor technology, which allows a utility to automate its electromechanical substations without the high cost of a microprocessor panel upgrade. By simply attaching a small, non-intrusive, clamp-on AC/DC sensor to the relay wires and connecting it to the supplied recording switch, real-time analog and digital information is readily available for analysis.

**TRO-02-1B Robotics 101**

Robotics 101 will provide a basic primer to the world of industrial robotics. The session will review the general configuration of industrial robots, the major components that comprise an industrial robot, a review of many typical applications and a review of the ABB robot portfolio.

**TTR-07-3B (NOTE 3 hour session)****Introduction to ABB ACS800 Drives: Hands-on experience**

This technical training will provide an overview of ABB's latest Variable Frequency Drive (VFD) technology. Participants will learn about the key software characteristics that make the ACS800 drive able to handle a multitude of difficult motor control applications, and will receive hands-on experience with an ACS800 programming demo unit and programming panel.

**TTR-10-2A (NOTE: 2 hour session)****System 800xA Drives integration hands-on experience**

This technical training introduces participants to the concepts of configuring ABB's AC800M controller using PLC Control Builder and configuring a process panel as an operator interface. The project in the controller emulates a "tissue" paper machine. The project uses an ACS800 drive to control one section of the machine. The faults, alarms and real trending can be seen on the process panel. The variables as integers and words are passed via variables between the drive and controller and then to the panel.

**WBF-03-1 The value of developing strong business partnerships**

Collaboration and partnership is becoming even more important as companies seek to maintain profitability become sustainable over the long-term. NOVA Chemicals will share strategies for partnering across their manufacturing facilities, as well as within their supply chain. Learn how strong partnerships are a cornerstone for achieving optimized business management.

**WCS-12-1 Fieldbuses and device integration with System 800xA**

In an effort to lower lifecycle costs and improve productivity, many companies are integrating their intelligent field devices into their process control systems via fieldbus technologies. This enables them to exploit new levels of field device information in order to streamline work processes and maximize availability. Attend this workshop to learn how ABB's System 800xA seamlessly integrates intelligent field devices using the capabilities of aspect object technology, and makes this device information available in the right context to the right people at the right time.

**WCS-39-1 Optimizing operator productivity with advanced graphics technology**

Recent advances in multi-display graphics hardware and software have introduced new possibilities for the customization of operations in control rooms. Matrox offers multi-display add-in cards, remote graphics units, graphics expansion modules, and display wall controller boards. This session will cover how these technologies can be tied together to reduce the use of expensive display technology and cabling, decrease noise and temperature levels and increase the scalability and flexibility of operator station layouts. Options for sharing monitor information on data walls and remote monitors will also be discussed. New concepts will be on display in the Matrox Graphics booth.

**WCS-54-1 Soluciones de Conectividad Empresarial incluyendo SAP**

Las Soluciones de Conectividad Empresarial de ABB unen el hueco de integración vertical entre negocios y sistemas de manufactura, generando nuevas oportunidades para incrementar la productividad. Dada la complejidad de los sistemas ERP, SAP, ha establecido diferentes estrategias para integrar negocio y manufactura. SAP posiciona para requerimientos del sistema de manufactura ligeros la interfaz xApp Manufacturing Integration and Intelligence (xMI) y para escenarios mas complejos la interfaz Exchange Infraestructure (XII). SAP adoptó el estándar de Integración de Empresa a Manufactura ISA-95. ABB encara estos retos mejorando la comunicación entre SAP y los sistemas de manufactura.

**WGC-03-1 Industrial energy management – Developing an effective energy strategy**

Effective operators take a strategic approach to energy efficiency. This presentation stresses the importance of moving energy from the plant room to the board room. Attendees will be able to identify the value drivers that make energy management a strategic issue. They will also develop the components of a successful energy strategy.

**WIN-03-1 Flue Gas Desulfurization (FGD) Scrubber pH control: Reducing emissions through tighter pH control**

As stricter emission limits are imposed upon industries it is even more important to operate FGD scrubbers at peak efficiencies to guarantee maximum pollutant removal standards. One way to do this is to employ a pH sensor technology that provides the most stable, accurate, repeatable pH measurement for control purposes, to optimize pH control improving scrubber throughput and reducing costly down-time and maintenance due to scaling and plugging of spray nozzles and trays. The heart of a pH probe is a robust wood junction reference designed to withstand the harsh scrubber environment.

**WLC-08-1 Motor control - Finding the application**

Meeting the requirements of industrial motor control applications is a must as manufacturers review products and system requirements. Understanding the motor load needs, industrial machine requirements and distribution networks is the first steps in this process. Learn how NFPA 79, UL 508a and NEC 409 affect system selection and what motor circuit configuration best fits your motor control needs.

**WLS-05-1 Process Analytical Technology (PAT) applications: Benefits and experience from recent projects**

This workshop will present the planning, installation and start up of Industrial IT for Process Analytical Technology (IIT for PAT) system at Abbott's North Chicago, Illinois facility, in addition to Campoverde, Italy and Puerto Rico installations. These PAT systems operate in Abbott's research and development area and are used to perform Design of Experiments (DoE) in support of the company's PAT initiative. This workshop will identify the many advantages of ABB's PAT system during the system design, development, installation, validation and the operational benefits that can be realized from a well-known process design space.

**WMM-11-1 Rollerpress: An energy efficient way to grind**

The High Pressure Grinding Rolls (HPGR) became commercially available in 1985, and it was first used in the cement industry for the grinding of cement clinker where it reduced the energy consumption by up to 50 percent. This success paved the way for the HPGR to be used subsequently with great success in the mining of diamonds in 1987, iron in 1994 and hard rock (copper, gold and platinum) in 2005 with improvement of the wear protection of the rolls. ABB has the experience and skill to design the drive system in order to ensure a reliable long-term operation.

**WPO-04-1 Benefits of bundling instrumentation, control and electrical for lower cost and improved execution**

The advantages of sourcing integrated instrumentation, control and electrical systems for the critical electrical package of a manufacturing plant. Industrial projects are more complex, involve new technologies and have tighter schedules than ever before. In addition, there is a growing trend where the major power components and systems are segregated into pre-engineered packages that are integrated on site. Delivering an engineered electrical package mitigates risk, reduces start up time, optimizes the system, reduces field wiring and lowers the cost of plant ownership. This approach meets the demand for engineered packages by offering an option for a fully integrated electrical power system.

**WPO-34-1 Centralized Volt/VAR control for distribution systems**

This course will focus on the renewed industry interest in distribution system Volt/VAR control. Benefits of distribution system capacitors, including reduced losses, reduction in required losses, and improved voltage control, are summarized. Benefits and methods for achieving centralized Volt/VAR control, using distribution control systems and communications will be described.

**WPO-35-1 Generator technologies for alternative energy**

This class will provide an overview of different types of generators and how they are applied in renewable energy applications. Participants will learn about the different generator designs and how they provide predictable power generation. We will also explore how these designs comply with the current electrical requirements and how to select the best generator for the application.

**WPP-01-1 ABB's Service Center of Excellence: Maximize performance of your existing automation assets**

The mission of the Services Center of Excellence (CoE) for pulp and paper is to help our customers get more performance out of their assets. The Services CoE captures all of the best practices of ABB service from around the world and then standardizes and productizes them for all regions. This session will provide an overview of the best practices ABB service can provide your organization.

**SESSION 7: 9:30 a.m. – 10:30 a.m.****CCS-09-1 Human Machine Interface (HMI) evolution: Bayer case study**

In this workshop, the Bayer Corporation (Berkeley, California location) describes their control system evolution process. The presentation will include technical considerations, scheduling and the project management required for upgrading a MOD 300 Process Portal B control system to System 800xA, as well as subsequent integration with a third party Enterprise Resource Planning (ERP).

**CRS-05-1 Keys to effectively deploying a Reliability Centered Maintenance strategy**

This presentation will explore the key elements required to effectively deploy a Reliability Centered Maintenance (RCM) strategy that supports operational excellence goals and improves overall financial performance. Run-to-Failure (RTF), Preventive Maintenance (PM), Predictive Maintenance (PdM) and Condition-Based Maintenance (CBM) are all common maintenance practices deployed by industry today. Rarely does a facility follow a single maintenance approach; historically, a blend of both run-to-failure and preventive maintenance tactics have been used. The challenge is to develop a balanced strategy that ensures an asset's performance, availability and life at the lowest cost. A Reliability Centered Maintenance strategy provides this balance.

**PPO-12-1 What we need to do to keep the wind of change blowing**

This panel discussion will include representatives from different areas of the renewable energy industry. The panel will discuss questions on topics such as permitting the principle economic factors driving the industry and government legislation, and what needs to take place to continue the advancement of renewable energy in the United States.

**TCS-04-1 Enhanced configuration: Dosing and extended PID Loop**

This workshop covers several key aspects of advanced configuration of ABB's Freelance control system that includes special function blocks, such as The Dosing Block. Loop tuning for a closed loop will be explained, as well as sequential function charts. Participants will also discuss setting-up for PROFIBUS and FOUNDATION Fieldbus networks.

**TCS-19-1B Reducing time to decision and action with System 800xA**

This workshop covers how System 800xA can help reduce the time it takes for operations, maintenance and engineering personnel to make the right decisions and take the correct action. Reducing time to decision saves money, decreases waste of resources and increases uptime and Mean Time Between Failures (MTBF). Through features like personalized workplaces, intuitive navigation, integrating and filtering information and notification techniques like Short Messaging Service (SMS) messaging, plant personnel can be notified and given current, relevant information. Real-life customer applications will be shared.

**TIN-06-1 Selection of conductivity sensors for power, food, biotech, and industrial applications**

Whether measuring clean water, chemical-additive water or waste water, ABB's selection of process conductivity sensors spans a wide range of market applications. The power industry requires 2-electrode and 4-electrode conductivity sensors to ensure pure feedwater, boiler blowdown control and water demineralizer function. The food, beverage and biotechnology industries require special mounting, electrode design, flow-through conductivity monitoring and surface polishing for clean-in-place (CIP) sanitary processing. The needs in the pulp and paper industry dictate the use of 4-electrode and toroidal conductivity sensors for pulp washing and drying applications. Sensor selection by industry application will be provided.

**TLC-07-1 Extending motor life through voltage monitoring**

Modern investments in production are high and downtime cannot be tolerated. Protection and prevention play key roles in keeping systems up and running. This session investigates the function of voltage monitoring in three phase systems and the ability to prevent costly problems before they occur. Terminology is explained, applications are reviewed and state of the art monitors are investigated. Don't miss this chance to learn how minimal investment can supply maximum benefit.

**TMD-01-1 Starting medium voltage motors: How many times can I push the button?**

This session will review various methods for starting medium voltage AC motors. Because of their large size and power draw, the starting of these motors can have a significant impact on an electrical system. Different methods used to minimize this impact will be covered. Discussion will include the impact of the load inertia and torque characteristic, as well as various starting methods. (Note: This is not a session on motor starters).

**TPO-08-1 Factory and field testing of power transformers to ensure reliable performance**

Learn about the effectiveness and general purpose of the various tests specified and performed at the transformer factory. Also, there is a review of tests that can be performed in the field used to uncover shipping damage and to identify emerging problems. This will cover the various tests to define the root cause of a problem, and the tests available both in the factory and in the field to confirm that a problem has been resolved and that the transformer can be placed into reliable service.

**TPO-11-1B Hands-on demonstration of HMB high voltage breaker mechanism maintenance: Simplicity redefined**

ABB is known for having one of the highest energy, low-maintenance, reliable drives available today for dead tank breakers, gas-insulated switchgear and generator circuit breakers. Did you know there are only about 10 moving parts? Be present as one of our ABB high-voltage service experts de-mystifies the anatomy of the world's most popular drive. This is a hands-on course in which everyone will participate.

**WBF-04-1 ABB product direction for the process industries**

The release of standards such as IEC61580 and the wireless initiatives have taken the integration of process and electrical equipment to a new level. New products, technologies and solutions are being developed for the generation, consumption and management of power in process manufacturing. This session will cover new developments in automation technology, as well as provide insight into the benefits of integration of automation and electrical into a common control system environment.

**WCS-33-1 Connecting automation to ERP systems such as SAP**

One of the common questions that we hear is, "Can you connect to SAP?" This session will focus on ABB's Industrial IT Enterprise Connectivity product, and show how ABB's System 800xA platform can be easily connected to enterprise systems or manufacturing systems, using various strategies such as Web Services, ODBC, or direct connections to SAP. This workshop will include a demonstration on how quickly and easily the connection to SAP can be established and show how the business information can be used inside of the 800xA or manufacturing environment.

**WCS-45-1 Economic case for using FOUNDATION technology**

Modern DCS systems are major distributed networks with multiple data paths, which, in the interests of security and the highest plant availability, are almost always duplicated and made redundant. This session discusses how FOUNDATION Fieldbus systems can now incorporate redundancy and fault-tolerance right down to the H1 field layer. The major impact is on project ROI and plant revenues, and only FOUNDATION technology can offer this level of security and benefit to the plant operator.

**WCS-55-1 RIS – Solución Integrada de Confiabilidad de Planta**

Los desafíos de productividad actuales implican aumentar la performance de los activos instalados mientras se reduce el costo total de operación en su ciclo de vida. Las Soluciones Integradas de Confiabilidad de Planta permiten obtener el mejor retorno sobre activos, reducción en los costos operativos y un crecimiento sostenible de las ganancias, permitiendo de ésta manera lograr una mejor competitividad y diferenciación.

**WGC-04-1 Process hazard review for existing plants**

It's easy to be wise after events like BP's Texas City explosion, but more challenging is to identify weaknesses and implement targeted improvements to prevent such disasters. ABB's Process Hazard Review (PHR) method is an efficient and well proven technique for process safety risk assessments on operational plants. This presentation describes a sample PHR from within the oil and gas sector.

**WIN-10-1B What's new in instrumentation and why it matters**

This workshop covers trends in the instrumentation market, how ABB products are addressing these trends, and most importantly, how these trends and advances translate into tangible benefits to plant owners and operators. We will discuss both new measurement and control technologies and new applications for mature products and technologies, along with brief case histories where appropriate. Attendees are invited to participate in a frank discussion on which topics in the news will really change the landscape, and which ones won't get past water-cooler discussions. Join us for a fast-paced and interactive session.

**WLC-03-1 ABB PST Softstarter: The smooth wave to the future**

We have all been confronted with the effects of water hammer in pump applications. Reduced voltage starting methods greatly reduce the water hammer effects. Torque control, which eliminates water hammer all together, is a new feature on the ABB PST Softstarter. Reduced voltage starting with current control will result in torque control that can be used at start up and stop of any pump application. Torque control with ABB Softstarters will shape the future of all pumping solutions.

**WLD-09-1 Sizing dynamic braking modules and braking resistors for Variable Frequency Drives**

This session is an overview of when and where it is practical to employ dynamic braking. The discussion will focus on how to size both brake modules and brake resistors using tables and calculations and other tools, when weights, inertias and stopping or other deceleration requirements are unknown.

**WMM-08-1 Conveyor belts**

ABB is a large supplier of solutions for the industry with a strong focus in the minerals market. Conveyors for mineral applications have become an interesting alternative to standard material transport method, especially due to the combination of innovative drive systems which are integrated within new generation of band conveyors. Today, these innovations allow a large degree of flexibility and a significant saving of capital investment and operational cost compared to traditional material transport. Integration of the drive system within mechanics, surrounding electrical equipment and control, is essential to fully benefit from those advantages.

**WOG-02-1 Integrated electrical and automation systems**

The gain in productivity, increased safety and life cycle cost that follows from integrating disciplines such as electrical systems and automation systems is a reality possible to exploit already today. However, the full potential of using a unified integration approach and share common infrastructure between equipment such as medium voltage protection and control relays, drives, switchgear, valves and instrumentation within the scope of an automation system is growing larger. Benefits such as extended common asset management for process and electrical subsystems, optimized power management and reduced cost for lifecycle support can be achieved using new industrial Ethernet-based features of 800xA.

**WOG-07-1 Operational Excellence: Taking full advantage of automation with SCADA**

Is the process that benchmarks the automation in your company against industry best practices? Learn about the Operational Excellence process to help achieve the following benefits: cost reduction, productivity, reliability, work practices, safety and environment, support, maintenance and training. The Operational Excellence process identifies and documents enterprise opportunities for improvements that result in extracting high value from the investment in automation. It also changes the culture of an oil and gas company to make sure automation is used properly and to extract full value out of SCADA systems.

**WPO-24-1 Process steps for implementing the Smart Grid**

What procedures, processes and actions must be taken for utilities and power providers to fully implement Smart Grid technology onto their existing networks? This course will discuss what these process steps should be based on peer utility experiences, including the establishment of and commitment to predetermined goals based on business objectives, using pilots to validate business cases, and moving pilots to system deployment.

**WPO-29-1 Improving safety of plant operations with low-voltage arc-resistant switchgear and MCCs**

This session will discuss the use of NFPA 70E, ANSI C37.20.7 and IEEE 1584 in the development of low-voltage arc-resistance switchgear and motor control centers. It will also highlight arc flash danger to personnel and discuss the solutions used in the development of arc-resistant low-voltage switchgear and motor control centers.

**WPO-53-1 Aplicación de Transformadores Secos la Industria**

Tipos de transformadores secos. Normas ANSI para transformadores ANSI. Determinando el tamaño de los transformadores secos. Nivel Básico de Aislamiento y tamaño de los transformadores secos. Descripción de los núcleos y bobinas usados en los transformadores secos, corto circuito en transformadores secos. Parámetros usados para calcular la ventilación en instalaciones de transformadores secos. Reemplazo de transformadores de aceite con transformadores secos. Parámetros a ser considerados.

**WPP-04-1 Optimization services: Diagnosing pulp and paper mill process problems to maintain a competitive edge**

Quickly resolving machine and process problems is crucial to maintaining a competitive edge. Paper makers know that process variations and control loop performance directly impact sheet breaks, grade changes, raw material consumption, sheet quality, production and overall machine efficiency. These issues can be daunting without a solid, continuous improvement plan. This workshop defines ABB's current paper machine optimization strategies, provides insight into solutions involving remote diagnostic services and demonstrates real world examples.

**WRO-05-1 Introduction to PickMaster software for picking and packaging**

PickMaster for picking simplifies the integration of vision guidance, conveyor tracking and robot motion on all ABB robotics including the IRB360 Flexpicker. PC based graphical configuration tools simplify the development and writing of vision-guided robot applications. Product features and programming basics will be discussed.

**WSE-07-1 Verify compatibility of your security policies with the functionality of your control systems**

Malicious activity and heightened regulatory environment make development and application of control system security policies necessary. Your policy compatibility with the functionality of your systems is important. ABB can test for compatibility and apply your security policies to your ABB products. This can simplify the process of determining what changes may affect system functionality. Learn more about the validation service robust offering, which provides auditing, testing, remedial actions and compliance maintenance activities.

**SESSION 8: 11:00 a.m. – 12:00 p.m.****CCS-01-1 Hemlock Semiconductor Asset Management Pilot program with Consult IT**

The Consult IT Asset Management Pilot is designed to help customers understand System 800xA's Asset Management capabilities by actually using one of their higher level units for a prototype effort. It is tailored to the customer's working environment and based on interviews with plant maintenance and operations personnel to provide a complete asset management experience. This workshop discusses how such a pilot program was delivered at Hemlock Semiconductor Corporation.

**CLC-01-1 Innovations and trends in custom panel applications**

Custom control panels match engineering principles and design creativity to help customers address very unique business and technical needs. This session will cover how custom-engineered panels contribute to the success and growth of customer organizations.

**CPO-02-1 Solutions and strategies for power plant FGD and SCR environmental upgrades: Three case studies**

This session will highlight several case studies involving different applications of the AQCS environmental upgrades for coal fired power plants and the solutions used to achieve the customer desired results. You will see examples of custom integrated solutions into 50+ year old power plants, along with new extensions including but not limited to: Power Distribution Centers (PDC's) housing low and medium voltage switchgear, liquid-filled and dry-type transformers, motor control centers, DCS equipment, bus duct, relay panels and current limiting devices.

**PPO-03-1 Financial models: Moving from physical to digital infrastructure**

Identifying and building an effective decision model for assessing economic value of transmission and distribution investments is a major challenge. This ABB and utility-led panel discussion will explore how to make prudent financial decisions that will help you transition to a modernized digital infrastructure. Panelists will discuss how this analysis can determine value, which financial models best determine the lifespan and reliability of power products and technologies, and how to best summarize the most important input factors to provide a business justification for your financial decisions.

**TCS-03-1B Engineering for maximum performance with System 800xA**

At this technical training demonstration, you will learn how System 800xA's integrated engineering environment helps reduce overall engineering costs and improve operational performance. The primary focus for this workshop will be on engineering features that streamline the engineering workflow, enable efficient reuse of best practice solutions and facilitate continuous improvement. We will demonstrate/explain how the latest released functions and features of System 800xA enable users to perform engineering tasks more quickly, saving time and money.

**TCS-12-1 How to set up a PROFIBUS network: General architecture and implementation**

A variety of considerations need to be made when setting up a PROFIBUS network. This workshop will look at some general requirements of a PROFIBUS network, with respect to speed, cable lengths and products. Appropriate settings to facilitate management of your PROFIBUS network and PROFIBUS-capable devices will also be discussed.

**TCS-28-1 System 800xA for MOD 300 primer**

This workshop is a general overview describing the functionality of System 800xA when applied to your MOD 300 or Advant/MOD 300 system. See the additional steps taken by ABB to protect your original system investment and lower your costs and risks to evolve to System 800xA. (Customers familiar with 800xA for MOD 300 might see this as a refresher course).

**TCS-29-1A Compact HMI 800 and new Process Graphics 2 training**

This training provides an overview of the functionality of Compact HMI 800 5.0 as well as the new Process Graphics 2 and PLC Connect. Compact HMI 800 is part of the Compact Products 800 offering - a range of products that can be used individually or combined to create cost effective control solutions. Compact Products 800 are built with openness in mind and are based on standards to ensure that they can be used with other products on the automation market. All participants will get a trial version of the Compact HMI 800.

**TIN-07-1B Understanding pressure and temperature measurement technology and applications**

Pressure and temperature measurements are two key measurements in effective process control. In this session, we will cover the fundamentals of how each measurement technology works and what critical considerations you need to know when specifying these field devices. The session will also cover pressure and temperature calibration and configuration in several practical examples.

**TLC-08-1 Improved power quality and energy savings with the ABB active filter**

Active filters do more than improve the power quality of complete systems, as they can also significantly reduce total power required in commercial and industrial facilities. This session covers how active filters operate, how they differ from other filtering methods, and how the energy saving is actually achieved.

**TLM-02-1B Demystifying metric: NEMA vs. IEC motors**

This technical training will review some of the more common International Electrotechnical Commission (IEC) motor specifications and terminology, comparing and contrasting to comparable aspects of National Electrical Mfg. Assoc. / National Electrical Code (NEMA/NEC) definitions and descriptions. Items such as power ratings, frame size designations, cooling methods and efficiency classes will be discussed. These will be compared to the NEC definitions more commonly used in North America to provide the attendee a point of reference with respect to which motor types can be used in a given application and atmospheric condition.

**TPO-01-1 Advanced diagnostics for the detection and root cause analysis of power transformer problems**

New test procedures are adding valuable tools for diagnosing the root cause of problems in the field without requiring draining and entering the transformer. The Dielectric Frequency Response (DFR) test identifies the causes of high power factor in transformer insulation, and the Sweep Frequency Response Analysis (SFRA) can be used to determine movement of the coils that can signal damage that has weakened the ability to withstand operational stresses. We will cover the application of these tests and case examples of interpreting the results.

**TPO-12-1B Hands-on overview of transformer load tap changer maintenance practices**

The function and operating principles of on-load tap changers will be presented. This will include basic Load Tap Changer (LTC) operating principles, pros and cons of each type (resistance, reactance, vacuum, arcing, etc) of LTC, typical maintenance practices, and common failure mechanisms. Additionally, examples of upgrades performed on various types of LTCs will be presented, along with a hands-on demo of the key processes necessary to perform effective LTC maintenance, such as repairs and parts replacement and testing necessary to ensure proper operation and a successful return to service.

**TPO-28-1 Substation equipment overview**

This class will discuss the different components of a substation and various roles a new engineer would play. It will serve to provide a better understanding of how each component is related and their function in providing the transmission of power. It is necessary to understand how each component is related to ensure the proper protection is in place for all equipment. With the existence of many different substation voltage ratings, it is imperative to understand how to match up the correct voltages between products.

**TTR-12-2B (NOTE: 2 hour session)****System 800xA OPC Interfacing hands-on experience**

This session will explain OPC terminology such as groups, items and properties. Participants will use test servers and clients to test OPC connectivity, apply an understanding of OPC fundamentals such as synchronous and asynchronous subscriptions to troubleshooting problems with connectivity, learn how OPC COM objects are defined in the registry, learn the 800xA OPC architecture, interface a third party OPC Server to an 800xA system, and interface a third party OPC client to an 800xA system.

**WAN-01-1 Achieving sustainable performance with ABB FTIR analytical solutions**

As the need for operation models that sustain environmental health becomes crucial, many companies are searching for new processes. This presentation examines ABB Fourier Transform Infrared (FTIR) analytical solutions, including implementation of process optimization, to achieve sustainable solutions in the pharmaceutical, hydrocarbon, chemical, atmospheric and semiconductor industries. Benefits of utilizing ABB's expertise will be demonstrated. "To be a truly smart, agile enterprise, sustainability must become a core business strategy. Through implementation of sustainable practices, innovative companies continuously improve process performance while reducing environmental impact," says Mr. Simard, Chief Marketing Officer of ABB's Analytical Business Unit.

**WBF-08-1 Enhancing the supply chain in capital projects**

Fluor has adopted the PEpC model based on concepts and research performed by the Construction Industry Institute (CII). This model shows that if key technologies and key partners are identified early, and if the benefits and synergies of these are leveraged into the design process, both time and cost are reduced. This presentation will discuss how to identify, develop, and engage unique competencies to improve and benefit Fluor's and ABB's own functions, operations, and services; thus ultimately reducing cost, schedule and differentiating its service offerings to end clients.

**WCS-25-1 Designing Fieldbus systems**

Engineering PROFIBUS and FOUNDATION Fieldbus field installations involves much more detail than the traditional point-to-point wiring designs for 4-20 mA/HART installations. This workshop will address the general design concepts, introduce the necessary hardware components, and cover a basic introduction to the resources available from ABB to design a workable system using these fieldbus technologies.

**WCS-42-1 Reaching your OpX (Operational Excellence) goals with mobile, wireless devices**

Meeting Operational Excellence goals is all about getting the right information at the right time to the right person. This session will address how using mobile/wireless devices helps achieve these goals and overcome barriers to designing, installing and using this technology. You will learn how Panasonic and our partners facilitate efficient, effective wireless/mobile communication and computation to deliver a new paradigm for factory automation that has remarkable impacts on control, tracking, monitoring, and diagnostics of the manufacturing processes and equipment. This session will address new technologies for reducing time to decision and action, integrating information for improved OpX performance.

**WCS-56-1 Ciclo de Vida de los Sistema de Control, su Evolución y aplicación del Programa Sentinel**

El modelo de ABB para la Administración del Ciclo de Vida de los Sistemas de Control le ayudará a lograr el mejor rendimiento de sus activos y una transición sin tropiezos a las nuevas generaciones de productos. Cada fase de los productos - Activo, Clásico, Limitado, y Obsoleto - se revisan periódicamente para garantizar las opciones de soporte técnico y la implementación de los programas evolutivos para mantener sus inversiones principales a lo largo de su ciclo de vida. El Programa de Automatización "Sentinel" permite la administración del software para los productos de automatización de ABB.

**WGC-01-1 Experiences of undertaking occupied building risk assessments**

Major accidents like BP Texas City, often result in multiple fatalities to those located within on-site buildings in control rooms or temporary buildings. This presentation describes the methods and practical experiences for occupied building risk assessments on sites where major explosion, fire or toxic releases can occur.

**WIN-12-1 What's new in instrumentation for water and wastewater**

This workshop covers trends in the instrumentation market, how ABB products are addressing them, and most importantly, how these trends and advances translate into tangible benefits to water and wastewater plant owners and operators. We will discuss both new measurement and control technologies and new applications for mature products and technologies, along with brief case histories where appropriate. Join us for a fast-paced and interactive session.

**WLD-02-1 Choose your architecture and fieldbus: Who knew you could do this?**

With a multiplicity of fieldbus options built in, you can put your drives to work with whatever communications architecture already in use. This gives the flexibility to choose your architecture.

**WMM-12-1 Ventilation on demand**

Deeper mines, multiple mining faces, new interest in previously mined out sections, increased awareness of health and safety, long lead time and expense of new ventilation shafts can all wreak havoc on your underground mine plan, production and ventilation requirements. This session will provide attendees with an overview of the "Optimized Mine Ventilation on Demand" system. The system is designed to dilute and remove hazardous substances, control the thermal environment, and provide oxygen for humans and mobile equipment engine combustion. The system optimizes energy management of the mine through automation.

**WPO-06-1 How cast coil transformers are applied in Wind applications**

The focus of this session is the utilization of cast coil transformers in the process of transforming energy in the form of wind to electrical power. Specific elements that will be covered are the features and benefits of cast coil transformers with regard to location and application of cast coil technology in windmill generation with associated reasoning. Economics of cast coil technology compared to other available options will be reviewed including safety, ecological, environmental and maintenance considerations.

**WPO-07-1 Bundling electrical packages to improve project execution and to reduce construction time and labor**

ABB is the world leader in many areas of power and automation technology. Our global network of factories provides you with an unmatched portfolio of products and services. Packaging is your gateway to this global ABB network, providing you with a single point of contact from the early design stages all the way through project execution. Our product experts can help optimize the plant design and minimize re-engineering. You receive one package proposal with harmonized commercial terms, and the entire order will be handled by an experienced project manager.

**WPO-54-1 Nuevas Familias de Reles de Distribución Dada**

Nos complace presentar la nueva línea de protecciones de distribución RE\_615. La plataforma general a la luz de la nueva norma de información en subestaciones "Redes de comunicación y sistemas en subestaciones" y la necesidad de un procesador más poderoso implementando el concepto desde el diseño de los nuevos relés es destacado guiandonos a la protección más desarrollada con el verdadero concepto de IEC 61850. Los detalles de la presentación incluirán: Nueva línea de protecciones 615, Protección de alimentador REF615, Protección diferencial en Circuitos de Distribución RED615.

**WPP-07-1 Service Pro: An interactive, knowledge-based tool for maintaining ABB automation systems**

Service Pro is an interactive software package filled with many years of ABB best practices pertaining to the proper preventative maintenance procedures for ABB automation equipment. This session will provide an overview of Service Pro capabilities and a live demonstration so participants can see the possibilities once implemented.

**WRO-04-1 Introduction to PickMaster software for palletizing**

Robotic palletizing provides manufacturers a flexible solution for handling multiple products and package sizes simultaneously or multiple changeovers daily. PickMaster for palletizing provides the tool to simplify the programming of the palletizing system and easily add future package configurations as production changes occur. Product features and programming basics will be discussed.

**WRS-05-1 Achieving maintenance and reliability excellence for complete plant lifecycle**

Implementing the right reliability and maintenance strategy in the beginning project stages can improve Overall Equipment Effectiveness (OEE) and reduce operational cost. This presentation will outline the most common factors for OEE reduction and how these factors can be overcome. Participants will also gain insight into how implementing the right reliability strategy helped Vale Inco achieve safety and production performance records.

**SESSION 9: 1:30 p.m. – 2:30 p.m.****CCS-08-1 Ventura Foods control system evolution case study**

Ventura Foods, located in Chambersburg, Pennsylvania, describes their decision, plan and process to upgrade and extend their traditional MOD 300 multibus, Model 'B' control system with ABB's System 800xA. This evolution project includes a multibus DPSS upgrade to AdvaBuild for Windows, replacement of existing local control panels (LCP+) and multibus console evolution to Process Portal. This case study will review project considerations, the approach used, issues, lessons learned and future steps.

**CCS-50-1 Caso de Estudio: Atanor - Sistemas Integrados de Control y Seguridad**

La Integración del Sistema de Control y de Seguridad brinda una confiabilidad y versatilidad única. Las herramientas del Sistema 800xA permiten identificar problemas y solucionarlos antes que afecten al proceso, además de permitir la mejora continua. En esta aplicación se mostrarán los beneficios y virtudes de un sistema integrado de control y seguridad, que posibilita la mejora continua combinada con la tranquilidad de operar de manera segura.

**CIN-01-1 Optimize burner combustion and reduce fuel costs in coal-fired power plants by tighter O2 control**

This session focuses on a customer case study describing the implementation of an ABB SMA O2/COe solution vs. traditional in-situ O2 only measurements. The workshop will outline the benefits that the customer experienced including the reduction of emissions and fuel costs.

**COG-07-2 (NOTE: 2 hour session)****Peregrino wellhead platforms and FPSO: Integrated control, safety and power management**

The Peregrino development project comprised of two wellhead platforms and a FPSO (Floating Production, Storage and Offloading vessel) produces 140,000 barrels/day of heavy crude offshore Brazil. This presentation gives an overview of the project, and will discuss technologies and execution strategies for the integrated control, safety and power management, as well as low and medium voltage electrical equipment under delivery by ABB. This project was complex in its execution, combining ABB offices in the United States and Norway with fabrication in Texas and Singapore, and final commissioning in Brazil. The presentation will be done jointly by ABB and EPC operator representatives.

**COG-11-1 Value proposition of implementing state-based control using PC equipment libraries**

Does the design of your process automation solution contribute to Operational Excellence (OpX)? Does your business expect to deliver higher asset capability with increased First Pass Prime production? Do you wish to prevent business interruption due to detectable and preventable events? If so, state-based control strategies delivered in a modular manner could provide a low cost, reliable solution to your business challenges. This paper will demonstrate the cost / benefit potential of implementing state-based control strategies using ABB Industrial IT PC Equipment libraries (process state enabled) and applying the principles of ISA 88 Part 5.

**CRO-01-1 Next generation robotic palletizing case study**

Robotic palletizing was the entry of robotics into packaging and consumer industry segments. Manufacturers and large volume retailers are demanding new solutions for end-of-line packaging and distribution to improve their profitability.

**CRS-02-1 Driving reliability improvements and successful culture change: CE Zinc case study**

This presentation will explore the challenges and successes ABB and CE Zinc, an electrolytic processing facility located in Quebec, Canada, experienced while implementing Total Plant Reliability®. Participants will also gain insight into how CE Zinc and ABB collaborated to develop a successful strategy to ensure sustainable performance improvements and culture change.

**PPO-06-1 NERC Critical Infrastructure Protection standards: Cyber security and its impact on new technology**

This course will discuss how the NERC Critical Infrastructure Protection (CIP) standards affect utilities and their systems. It will look at how the regulatory requirements change the architectures and technology of current installations. The course will discuss solutions that address technical NERC CIP requirements and point out the main challenges that exist. It will also look at upcoming changes of the NERC CIP standards and give an outlook on the new technology.

**PPO-10-1 Switchyard 101: How power plants can care for their substation assets**

This session will discuss the operation and maintenance of critical apparatus in the switchyard of a power plant. Equipment that will be covered includes high-voltage breakers, medium-voltage switchgear; disconnect switches and gas-insulated switchgear. Other topics will be new monitoring techniques and non-invasive on-line diagnostic testing.

**TCS-10-1 Harmony control evolution and control library demo**

ABB has developed solutions for protecting your investments in control applications. This workshop will discuss the Harmony INFI 90 control evolution strategies, new product releases and development activities. There will be a demonstration of the Harmony INFI 90 function code library executing in the AC 800M controller environment.

**TCS-13-1 Improving visibility through integrated information management**

One of the questions we often hear is "How do I integrate all my data from a variety of sources and turn data into valuable information in the form of reports and displays?" This presentation will focus on how to use ABB Industrial IT products to consolidate ABB's System 800xA platform with other enterprise or manufacturing systems to present a consolidated view of information. We will demonstrate how quickly and easily the connection to various systems can be established and show how the information can be used to provide meaningful, value-based information for a variety of users.

**TCS-20-1 The benefits of Field Device Tool (FDT) Technology: Make use of the intelligence of HART devices**

Field Device Tool (FDT) technology specifies a software interface with focus on integration of Device Type Managers (DTMs) into control systems and asset management tools. It allows any device to be accessed from any host through any protocol. DTMs enable device vendors to provide easy access to device intelligence. Graphical user interfaces help reduce parameterization and trouble shooting time with HART transmitters and positioners. In this workshop you will get an overview of FDT, DTMs and integration of HART devices to make best use of their intelligence, extended diagnostics and configuration features.

**TCS-22-1 System 800xA Batch Recipe Management**

This workshop will provide a brief overview of the all key features of 800xA Batch Management. After the overview, the workshop will present in depth the Recipe Management features of System 800xA. Specific focus will be given to development of reusable components, versioning, formulation parameter management and flexible operator interface functions. The workshop concludes with a brief demonstration of 800xA Batch Management.

**TFM-01-3 (NOTE: 3 hour session)****Operating and maintaining Stressometer FSA 7.0 - Part 1**

This course teaches students basic, theoretical and practical flatness measurement and flatness control using Stressometer version 7.0. The training targets people who will perform operation, service and maintenance on Stressometer version 7.0. It is desired that students have knowledge of the target process and basic knowledge of mechanics and electronics. Upon completion of this course, students will be able to describe the basic design principles of Stressometer 7.0 and its range of functions, and perform basic operation, maintenance and service of the Stressometer 7.0 system.

**TIN-03-1B Flow technology: Selection and practice**

There are many different methods of measuring fluid flow. While this is useful, it can be very confusing. The objective of this workshop is to unravel some of the mysteries of flow technology selection and teach the student how different flowmeters work and when - and when not - to use them. This course is aimed at the engineer who has little or no experience in the intricacies of flow. It assumes no previous knowledge and covers the basics, including the flow pioneers, terminology, installation practices, flow profiles, flow disturbances, verification techniques and flowmeter selection.

**TLC-04-1 Complete circuit protection: UL508A, NEC409 and the application of the current limiting breaker**

Networking a hierarchical distribution system and ensuring adequate protection from unexpected electrical events can become a complicated undertaking. Learn from the experts how this process is accomplished. Find out how true current limiting breakers can be networked to protect your systems. This session will cover the basics of circuit breaker coordination technology and illustrate example applications. See how a simple technology can provide elegant and reliable solutions.

**TLD-02-1 DC retrofit options: Replace the system or just upgrade the drives?**

A look at upgrade options for installed DC drive-controlled production sections with the latest control options, connectivity, user interface, and product support – All while increasing production and reducing maintenance costs.

**TLM-01-1 DC vs. AC: Which motor is best for your application?**

When electrification began, DC was the only prime mover available. AC induction motors, due to its simplicity, replaced DC for constant speed machines and DC was used in variable speed applications. AC drives has again allowed AC induction motors to capture applications from DC. DC motors are still used in limited applications. The square frame AC induction motors is another technical development that may again capture application that were traditionally DC. The presentation reviews base fundamentals for these motors, the performance trade-offs between them, and where each is best applied.

**TPO-02-1 Benefits and methods of power transformer Load Tap Changer (LTC) maintenance and upgrades**

Load tap changers operate frequently and can pose a failure risk if not properly maintained. The function and operating principles of on-load tap changers will be presented. This will include basic LTC operating principles, pros and cons of each type of LTC (resistance, reactance, vacuum, arcing, etc), typical maintenance practices and common failure mechanisms. Additionally, examples of upgrades performed on various types of LTCs will be presented, along with the key processes necessary to perform effective LTC maintenance, such as repairs and replacement and testing necessary to ensure proper operation and a successful return to service.

**TPO-13-1 How to choose the right transformer technology for your application**

This session will provide you with a discussion of the different technologies available for industrial distribution transformers. From cast to liquid to dry, each of these technologies has its own inherent strengths. Our presentation assembles data from various sources in order to provide information to evaluate liquid-filled and dry-type transformers. The basis of comparison is a general product description of product development and design. We will outline the unique capabilities and strengths of each technology, and provide you with a decision matrix for selecting the right technology for your needs and applications.

**TSE-01-2 (NOTE: 2 hour session)****Create an asset management strategy for your plant**

ABB experts will work with attendees to assess their plant requirements and discuss the key steps required in developing a business case, budget and actionable plan for implementing an asset management strategy. This hands-on training session will include a seven step process for asset management implementation, the Reliability Fingerprint process and review technologies and services that can be used to execute an asset management strategy.

**TTR-06-3B Communications for ACS800 Drives: Hands-on experience**

This technical training will provide you with an overview of ABB's ACS800 AC Drive with fiber optic communications. Participants will learn about the key communications characteristics that make the ACS800 able to handle high-speed communications with other controlling devices (e.g. automated controllers and Programmable Logic Controllers). This session provides hands-on experience with an ACS800 programming demo and Drives Window, Ethernet IP, PROFIBUS, and Modbus protocols.

**WBF-05-1 It's all about leadership**

All employees wish to be led by a winning leader, someone who is dynamic, competent, fair and authentic. The focus in It's All About Leadership is on 12 Leadership Principles which leaders should apply in order to engage and inspire their employees who in turn will further engage the company's internal and external costumers. Attend this session to learn how you can paint a compelling picture of how every employee in an organization can positively impact the execution of your strategic plan.

**WCS-09-1 Combining process and product information as part of an Operational Excellence program**

ABB Full Service is a globally supported, performance based partnership where ABB assumes full responsibility for maintaining and improving the production performance of an entire industrial facility. In this presentation we discuss how the ABB cpmPlus technology is used in a systematic way in the ABB Full Service operational excellence process - Plant Performance Improvement - to continuously improve the manufacturing performance of an industrial plant.

**WCS-11-1 Fieldbus FOUNDATION: Beyond the industry standard**

FOUNDATION Fieldbus (FF) is already an internationally-recognized industry standard. Now let's look beyond basic process automation - to tomorrow's generation of digital communications. In this workshop, you'll gain an understanding of where FF is headed with regard to advanced NAMUR NE107 diagnostics, Safety Instrumented Functions (SIF), wireless technology and remote I/O. Anyone working with FF or budgeting for fieldbus-related projects, including system engineers, plant operators, system integrators and plant managers can benefit from attending this workshop.

**WCS-24-1 Reliable communications with the ABB controllers and operator interfaces**

This workshop will take you through a couple of actual successful applications of ABB's AC800M programmable logic controllers, Compact HMI 800 operator interfaces and ACS350 variable frequency drives integrated with Westermo's reliable industrial data communications products. These applications include both wired, wireless and fiber optic transmission of data with a special focus given to Ethernet applications involving redundant rings and "barbed wire." Application notes, data sheets and programming hints will be distributed for all of the class examples, as well as actual hands-on opportunities to work with the different technologies in the exhibit area.

**WCS-35-1 The benefits of considering SIL rather than architecture when buying safety systems**

Use Safety Integrity Level (SIL) requirements to choose the most appropriate safety controller platform. According to IEC 61508 / 61511 standards, Safety Instrumented System (SIS) effectiveness is measured in terms of hardware safety integrity, ability to react in a predetermined way upon fault detection, increased diagnostics and proper design, implementation and operation. ABB's System 800xA HI (High Integrity) SIS logic solver uses increased diagnostics and diverse processing to achieve SIL 3. Come and learn how focusing on SIL rather than architecture results in a cost effective, safe and reliable safety system.

**WFM-01-1 Concepts and benefits of Web tension control**

Consistent product quality cannot be achieved without proper measurement and control of the product tension in any web process, whether it be paper or metal sheet. This workshop will outline the numerous benefits and design principles used in load cell based tension systems. Collaboration between a well-designed ABB load cell based tension system, and an ABB plant control system can define a high quality supplier.

**WLC-07-1 Low voltage Motor Control Centers**

The evolution of low voltage Motor Control Centers (MCC) has become fairly dynamic over the last decade. This workshop shows the important role the MCC plays in the industry, including various design and standards that are shaping the future of MCCs. Future trends in the MCC industry will also be discussed.

**WPO-14-1 From the breeze to the grid: Wind farm applications and how ABB fits**

This course will take a new look at traditional wind-plant electrical systems and the equipment that is used in these applications. The class will look at the variables that impact designs, ratings and specifications for the electrical equipment. Application of pad-mounted transformers, breakers, switchgear and STATCOM will also be covered.

**WPO-55-1 Desarrollo y Aplicación de Nuevos Transformadores de Instrumentos de MT y BT**

Este curso lo llevará a través de una revisión sobre los conceptos principales detrás del diseño de transformadores de instrumentos de Media y Baja Tensión y la tecnología disponible actualmente para comprender de mejor manera como los requerimientos especificados por el usuario final afectan el diseño de estos transformadores. Además vamos a repasar la especificación de transformadores de corriente y de voltaje basada en la Norma ANSI/IEEE para Transformadores de Instrumentos para luego finalizar con un repaso acerca de las aplicaciones de esta línea de producto.

**WSE-01-1 ABB Process Optimization Methodology for any process or industry**

Learn about the methodology behind the ABB Process Optimization Services used to increase production, lower cost and improve Overall Equipment Effectiveness (OEE). A benchmark of current process performance is compared to industry standards, as well as actual operating data to expected capacity. This provides a basis for in-depth evaluation and identification of improvement areas and financial opportunities.

**SESSION 10: 3:00 p.m. – 4:00 p.m.****CCS-05-1 Control system networks, integration and architecture on the corporate network**

The eternally difficult question: Do I allow my plant controls network (DCS, PCS, SCADA, etc) to be connected to the Corporate network or not? By allowing the connection visibility is gained; plant information can be used to increase business operations and efficiency as well as lowering overall costs of support by allowing remote access into the network. At the same time, it also increases the potential for a security event to occur by 100%. Are the benefits enough to outweigh the risks? Can this new connectivity be implemented in a manner that allows enough protection to make the risk insignificant? While it may be hard to make the first step, a proper design and implementation of infrastructure and controls will allow for safe connectivity between plant control network and the business corporate network.

**CCS-51-1 PEMEX Gas: Complejo Procesador de Gas Burgos combina soluciones de control y seguridad**

Pemex buscaba un sistema de seguridad y automatización de procesos, fuerte, confiable y flexible; que le permitiera visualizar la información, la integración de las diferentes soluciones, una respuesta rápida, optimización de los procesos, obteniendo el mejor resultado en costo-efectividad. Pemex encontró en la Tecnología Extendida 800xA de ABB la mejor manera de automatizar sus procesos de control y seguridad en el Complejo Burgos. Este sistema da a Pemex la ventaja de integrar los sistemas de control, seguridad y fuego y gas en el proceso de sus plantas, lo cual representa una disminución considerable del riesgo.

**CRO-02-1****Chemical handling and palletizing case study**

Flexibility and system uptime are the key to success. This case study evaluates the handling of various configurations of chemical containers by a single workcell.

**CRS-07-1 Measuring maintenance productivity identifies millions in maintenance cost reduction opportunity**

This presentation discusses how ABB Reliability Consulting leveraged work-sampling methodology to measure maintenance productivity on one site and identify more than \$14M potential savings per year. Attendees will learn specific techniques used, hurdles encountered and best-practices developed throughout this project.

**TCS-02-1B Compact Products 800 overview**

This technical training offers an overview of Compact Products 800 - a range of products that can be used individually or combined to create cost-effective control solutions. Compact Products 800 are built with openness in mind, and are based on standards to ensure that they can be combined with other products on the automation market. Learn how Compact HMI 800, AC 800M controllers with Compact Control Builder, Panel 800, S800L I/O and S800 I/O all can play key roles in your customized control solutions.

**TCS-11-1 How to set up a FOUNDATION Fieldbus network: General architecture and implementation**

A variety of considerations need to be made when setting up a FOUNDATION Fieldbus (FF) network. This workshop will look at some general requirements of an FF network with respect to speed, cable lengths and products. Appropriate settings to facilitate management of your FF network and FF-capable devices will also be discussed.

**TIN-02-1B Digital valve positioners: Advantages, selection, setup and optimization made easy**

Digital positioners deliver accuracy for the process, are efficient with plant air and offer good diagnostic features. This workshop will detail the available positioner options and their advantages. Attendees will discuss the selection of required features from the available options, as well as learn how digital valve positioners are fast and easy to setup. ABB digital valve positioner offers on-line optimization of the positioner's performance.

**TLC-03-1 Comparing and contrasting UL489, UL1066 and IEC60947-2 circuit breaker standards**

Finding the right circuit breaker for a given application can be confusing without an understanding of standards to which the circuit breaker is built. This session offers a comparison of molded case (UL 489) and low voltage power (UL 1066) circuit breaker standards. Applications where each is appropriate will be discussed. The session summarizes the characteristics that differentiate American National Standards Institute (ANSI) products from IEC based devices. Finally, the session covers a discussion about a comparison of the meaning of the UL Listing mark, versus the European CE marking, and why one is better than the other.

**TLC-05-1B Connectivity is key: The value and ease of ABB automation solutions**

If faced with the challenge of connectivity and interoperability of ABB and / or third party products on any of the open industrial communication networks, such as Modbus, DeviceNet, PROFIBUS, Ethernet, etc., attendees will not want to miss this opportunity. Connectivity of Human Machine Interface (HMI), Programmable Logic Controller (PLC), Drive Softstarters, Breakers and Universal Motor Controllers (UMC).

**TPO-21-1 Medium-voltage switchgear overview**

This session serves to provide an understanding of the function of medium-voltage switchgear in distribution. There are many different types of switchgear that can be created for primary and secondary distribution. A type of switch, fuse and circuit breaker all are used to create switchgear, and each of their roles will be discussed in this session.

**TPO-23-1D Power transformer field maintenance: Hands-on demonstration in oil processing trailer**

Processing of the insulating and cooling oil used in power transformers during an outage is a critical step to restoring the electrical characteristics of the oil to a condition that will support reliable service. It is important that processing is completed within an outage window and that it is done properly. This hands-on session will be conducted in an actual oil processing trailer (one of 14 owned by ABB Transformer Remanufacturing and Engineered Solutions (TRES) and available to support our customers) to demonstrate oil processing techniques, water removal, moisture limits, cold traps, filtration and the tests to confirm acceptable results.

**TPO-27-1 Saving lives using arc flash safety technologies**

This presentation will highlight arc flash exposure mitigation concepts to personnel and switchgear equipment including several unique solutions that are available to manage those hazards. ABB was first to introduce arc-resistant switchgear in North America and has gained significant global knowledge of the applications and installation requirements to design and apply the switchgear while minimizing the total installation costs. Topics to be discussed are the types of arc-resistant switchgear, devices available to mitigate arc flash energy, PPE requirements and the design and testing of arc-resistant switchgear.

**TTR-11-2B (NOTE: 2 hour session)****System 800xA Graphics Design hands-on experience**

This session is intended for users of 800xA systems that wish to explore the new PG2 Graphics Builder tool. While the 800xA for Harmony connect platform will be used for this session, the overall methods are similar for all connectivities. Users will participate in simple configuration exercises related to graphic displays, graphic elements and faceplates. Attend this session and see how collaborating with ABB training can enhance your knowledge and power with your 800xA system.

**TTR-13-2B (NOTE: 2 hour session)****Single loop control methods**

This technical training will furnish you with the skills to tune basic control loops (PID controllers). The focus will be on matching the controller to the process characteristics. The tuning methods learned can be applied to any PID controller, independent of the vendor. A software process simulator is used for hands-on practice.

**WBF-06-1 Lean and green manufacturing: ABB teaming with customers to improve the environment**

While ABB is one of the most sustainable companies in the world, we are always looking for opportunities for improvement. Two of our utility customers are members of the EPA's Green Suppliers Network. They partner with suppliers like ABB to try to improve the environment. At their request, two ABB transformer facilities had Lean and Green manufacturing audits performed. The auditors looked at ABB's operations to try and reduce waste and increase efficiency. In this session, we will talk about the results of the Lean and Green audits and the benefits of the program to ABB and our customers.

**WCS-03-1 Combining process control and safety in System 800xA**

At this presentation, you will learn how System 800xA can help you reduce risk to people, the environment and business through its High Integrity Safety Instrumented System (SIS) technology. We will talk about industry requirements throughout the safety lifecycle, and how System 800xA can provide the most comprehensive platform for process safety management, including safety engineering systems, services, instrumentation, logic solvers and final control devices.

**WCS-26-1 Software Lifecycle Management: Upgrade or wait, standardize or customize, enterprise or localize**

Modern manufacturing organizations rely increasingly on investments in software technology. These investments all share one common reality – 'versionitis' – or the compounding effect of software revisions. A modern manufacturing facility must have dozens of different applications in good health in order to run at peak performance. The modern industrial IT manager has a challenging assignment. This workshop examines the challenges of managing lifecycles in large software installations. The latest in best practices will be covered including agile development and continuous release process. A real example of a continuous release process being used for multiple manufacturing sites will be presented.

**WCS-28-1 Significant ROI gains by integrating System 800xA engineering with SmartPlant instrumentation**

In this co-presentation, ABB and Intergraph Corp. will explore workflows to address resource and schedule demands with innovative solutions to help improve business. Benefits discussed of Intergraph's SmartPlant Instrumentation for Operations and Maintenance solution with integration of ABB's System 800xA utilizing PETI (Process Engineering Tools Integration). Learn how this collaboration results in significant ROI gains in CAPEX projects and in management of change issues in brownfield operations, such as optimized project schedules and reduced time to market. Integration eliminates significant amounts of manual data re-entry and conversion and ABB's key differentiator ensures systems are synchronized throughout the plant lifecycle.

**WCS-44-1 WirelessHART for process measurement and control**

There are many wireless standards to choose from, but only one is built on technology proven reliable enough for process measurement and control applications. WirelessHART provides a single solution to get device diagnostics and process information from installed devices along with the application of new wireless devices on a single network dedicated to process M&C applications. In this workshop, the presenter will review use case scenarios and the technology advantages of WirelessHART, exploring new ways to extend the capabilities of your installed base and automate manual measurements previously thought to be too expensive to monitor.

**WIN-07-1 Lowering your total maintenance costs by using ABB Field products**

Are you under pressure to reduce your maintenance budget? Is your client insisting that you offer instrumentation that is easy to service and inexpensive to maintain? Learn why ABB Field products offer the industry's best alternative for your ROI, and simple point of use maintenance, as we review various examples from pressure and temperature applications in collaboration with ABB's Device Management products.

**WIN-13-1 New energy savings schemes in wastewater treatment**

This session will explore several innovative uses of ABB instrumentation, motors and drives equipment in traditional applications that reduce the energy consumption and increase the users return on investment. The session will focus on reducing blower power consumption by integrating analytical measurements and low voltage motor drive strategies. Case studies of several customer installations will be reviewed and analyzed for their potential use in existing and new customer installations.

**WLD-05-1 Energy savings equals "free" drives!"**

With today's energy costs on a sharp rise, the use of adjustable frequency drives is a smart choice for energy savings. This session will discuss and show the fundamentals of analyzing a variable flow/speed application to determine its energy savings potential.

**WLS-07-1 Project execution benefits from GAMP5**

Can your business benefit from reducing the cost and time of validation activities on projects? This presentation will show how ABB has adopted, and is using, the GAMP 5 principles to support the life sciences industry. The five key principles to be covered include: product and process understanding, life-cycle approach within a Quality Management System (QMS), scalable life-cycle activities, science based quality risk management and leveraging supplier involvement. ABB has been actively involved with GAMP since its inception in 1994.

**WMM-06-1 Kiruna electric trucks**

Rising diesel fuel and ventilation costs, heightened concerns with health/safety/environmental conditions and greater demands for more production are the everyday daunting challenges in the underground mining environment. ABB's Kiruna electric trucks have been delivering solid ore haulage since 1958. ABB's electric underground haulage trucks offer considerable advantages over traditional ore transportation methods. Fast, efficient ABB electric trucks offer more production or fewer trucks for the same ore haulage, than traditional diesel fleets, while regenerating power back to the electrical system as their primary source of dynamic braking and saving energy. This session contains an overview of the Kiruna electric truck system.

**WOG-04-1 Lifecycle simulation**

The 800xA control and safety system has a fully integrated simulator offering, Industrial Training Simulator (ITS), that allows the 800xA system to be integrated to any third party process model system by means of open standard OPC. The ITS system is a simulator version of the 800xA system allowing for full stimulation within a PC-based Soft-Controller environment. The approach has been carefully selected to allow the end customer to utilize their preferred modeling environment chosen from the marked leaders within the different process application areas, or their fleet standard in case the customers have standardized on a particular process modeling environment.

**WPO-11-1 Utilizing AMI and distribution management systems to improve customer satisfaction**

ABB Network Manager Distribution Management Systems (DMS) can leverage a distribution organization's Advanced Metering Infrastructure (AMI) to improve the outage management process. ABB has developed a generic interface between Network Manager DMS and Advanced Metering Infrastructure/Meter Data Management (AMI/MDM) systems. The AMI interface to Network Manager DMS improves the process by which distribution companies manage outages, improving reliability and increasing operational efficiency. This course describes AMI interface functionality, including outage notification, outage confirmation and restoration notification.

**WPO-32-1 Using STATCOM to meet the grid code requirements**

Over the last decade there has been a major increase in the proportion of wind power as installed capacity. The transmission system operators (TSO) have become increasingly concerned that tighter grid connection rules are required to limit the effects of wind power parks on network quality and stability. Wind power installations are being required to support the grid in the same way as other generation sources. This class will review steady state and dynamic reactive power capability, continuously acting voltage control and fault ride through requirements and how STATCOMs (static compensators) are well suited to fulfill these needs.

**WPO-56-1 Tableros de MT Arco-Resistentes "Metal-Clad" del tipo SafeGear**

Estudios realizados en Norte América indican que el 80% de las lesiones ocurridas por fallas eléctricas el año pasado, fueron causadas por fallas de Arco. El propósito de los Tableros Arco-Resistentes es precisamente el de proteger al personal y al equipo de explosiones y quemaduras objeto de una falla interna de arco, las cuales pueden ser causadas por mantenimiento impropio, fallas de los enclavamientos, errores en los procedimientos, objetos extraños, roedores, etc. El uso de Tableros Arco-Resistentes en Estados Unidos, Canadá y Europa han venido creciendo a pasos agigantados, teniendo en cuenta que las tendencias del mercado se han inclinado a la utilización de productos mas seguros y confiables, con el soporte de entes reguladores en la industria que apoyan este concepto en Norte América como lo son OSHA y NFPA, de la misma manera que los estándares ANSI C37.20.7. El propósito de este curso es el de brindar a nuestros clientes Industriales, Empresas Distribuidoras y Generadoras en América Latina, un Tablero Arco-Resistente que mejore substancialmente la seguridad y confiabilidad de sus operaciones, con un incremento modesto en el costo del equipo inherente al diseño Arco-Resistente.

**WPP-02-1 Assured performance agreement: Cost effectively match service requirements with ABB capabilities**

An Assured Performance Agreement is a defined process used by ABB to provide the most effective service delivery for our customers. The program is scalable and flexible in order to best match your requirements with ABB capabilities. This session will outline the program deliverables - come see what ABB can offer you today.

**SESSION 11: 4:30 p.m. – 5:30 p.m.****CCS-04-1 BASF control system evolution case study**

BASF Windsor recently decided to move forward from its first distributed control system, an INFI 90 system with Conductor VMS (OIS 42) workstations - to System 800xA for Harmony. This evolution solution combines the Harmony control environment with System 800xA extended functions including tags, faceplates, displays and all associated aspects. It also enables BASF to extend their system to include System 800xA Process Portal, Asset Optimization and Information Management. This presentation will review the DCS evolution and the collaboration between BASF and ABB which resulted in improved productivity and efficiency.

**CLS-01-1 Zenith Technologies: Schedule, cost and maintenance advantages of using an object-based library**

Zenith Technologies and ABB recently completed a multi-phased project for a UK based client. The brown field project involved replacement of an existing platform with 800xA. The success criteria for the project demanded that the plant be flexible to cater for multi-product production and modular flexibility. Installation of the process control system was completed over a short shutdown period. Post successful installation of the first phase, the validated object-based process control software was leveraged for phase II. The cost, schedule and development time scales were significantly reduced due to the design philosophies employed in phase I.

**CMD-02-1 Medium voltage drives case study: Application, evaluation and results**

This workshop will cover the actual application of a medium voltage drive and motor operating a 1,500 Hp extruder. The session will cover key elements of the project from initial concept to final operation of the equipment. Details will include the sizing of the drive and motor to meet the difficult application requirements of an extruder, engineering, packaging and integration issues, challenges and advantages of applying a 4KV drive on a 2.3KV bus, as well as commissioning and operation results with one year of installed experience.

**COG-03-1 IEC61850 at Petrobras REPAR Refinery**

The Power Management System at REPAR Refinery uses IEC61850 technology. This workshop will discuss the implementation of substation automation at the REPAR Refinery using Advant Controllers and the results reached. We will also present several new projects using digital relay technology with IEC61850 protocol, and how to integrate the new 800xA system with existing controllers, showing foreseen energy saving and increased efficiency.

**COG-09-1 Wireless control/safety and I/O in a NGL salt dome storage facility: Oneok**

You have a legacy non-ABB DCS that costs more to upgrade than to replace. You are expanding your storage facilities operations and you need to be able to see remote sites like wellheads and brine ponds. You have no cable tray installed, and there is so much brine in the soil that buried conduit doesn't last. What do you do? Go wireless for control, safety, cctv and integration of flow computers with 800xA. In this session we will explore the upgrade of a Oneok Hydrocarbon Storage Facility.

**PRO-01-1 Addressing labor shortages and manpower requirements: Top 10 reasons to invest in robotics**

With a cross-section of industry experts from various markets within the consumer industry segment, this session will cover their key reasons to use flexible robotic automation, and will also survey their future automation needs.

**TCS-05-1 Faster troubleshooting with DigiVis using extended diagnostics and control aspects**

One of the most important features of a Distributed Control System (DCS) is the ability to add transparency to your production process. Such visibility of information can reduce or even eliminate downtime and production losses! This workshop shows you how to use extended diagnostics and control aspects for fast troubleshooting of your process cell.

**TCS-16-1 MOD 300 Control Evolution and Control Library demo**

ABB has developed solutions for protecting your investments in control applications. This workshop covers the Advant/MOD 300 control evolution strategies, new product releases and development activities. There will be a demonstration of the Advant/MOD 300 CCF library executing in the AC 800M controller environment.

**TCS-18-1B Panel 800 configuration and operation**

This technical training offers an overview of Panel 800 - a range of high-resolution control panels with robust exteriors, an intuitive, ergonomic design, market-leading performance and stunning graphics. Panel 800's wide range of advanced functions includes integrated alarm handling with AC 800M. Learn how Panel 800 forms part of a common system where alarms/events can be displayed, managed and acknowledged from all connected panels, Human Machine Interfaces (HMIs) and PCs.

**TIN-05-1B Introduction to on-line analytical instrumentation**

This program will introduce the audience to liquid and gas analytical measurement for the power, water and process industries. Theory of operation and common applications for analytical instrumentation will be covered. The A to Z of analyzers, including ion selective electrodes, zirconia oxygen, optical liquid analysis and conductive measurements will be discussed.

**TLC-12-1 Vertical market solutions: The logical choice remains ABB Programmable Logic Controllers (PLCs)**

ABB AC500 Programmable Logic Controllers (PLCs) and related automation systems have been successfully implemented globally and specifically within the United States in a host of diverse applications across all industries. See how this versatile and easy-to-use system could benefit your specific, unique requirements. Ease of connectivity to other ABB and third party products are also highlighted in these solutions.

**TPO-04-1 Circuit breaker technology made easy**

This session will explain the function and types of medium- and high-voltage circuit breakers. From vacuum to SF6 interrupters, there are advantages and disadvantages to each. New technologies such as the Synchronous Switching Controller (SCS) and Circuit Breaker Sentinel (CBS) provide many benefits. Another vital component discussed will be the mechanism which drives the circuit breaker. Finally, the course will explore different reasons for using porcelain or composite bushings, along with advantages and disadvantages of both in making an informed decision when designing a circuit breaker.

**TPO-06-1 Cost/benefit of maintenance vs. upgrade vs. replacement of switchgear at utilities**

With aging infrastructure and attrition of the supporting work force, many utilities are forced to evaluate options and make decisions on how to support their aging equipment. This session will outline a structure for the evaluation of the cost and benefits of the options that are available, ranging from ongoing maintenance, full factory refurbishments, roll in replacement breaker options and various safety upgrades. The course will look at various costs based upon the options available and the life extension objectives of the owner to help establish a decision making process.

**TPO-12-1C Hands-on overview of transformer load tap changer maintenance practices**

The function and operating principles of on-load tap changers will be presented. This will include basic Load Tap Changer (LTC) operating principles, pros and cons of each type (resistance, reactance, vacuum, arcing, etc) of LTC, typical maintenance practices, and common failure mechanisms. Additionally, examples of upgrades performed on various types of LTCs will be presented, along with a hands-on demo of the key processes necessary to perform effective LTC maintenance, such as repairs and parts replacement and testing necessary to ensure proper operation and a successful return to service.

**WBF-07-1 ABB product direction for power utilities**

Join ABB's Chief Technology Officer, Peter Terwiesch, as he discusses trends in energy efficiency and grid reliability. Innovative new technologies from ABB help utilities generate power by wind and solar, as well as traditional methods and transport that power more efficiently than ever before. Learn how these new technologies can help power utilities not only improve their efficiency, but also contribute to a more sustainable and green world.

**WCS-02-1 System 800xA operations: New graphics evolution**

This workshop describes how to evolve from the VB6 based graphics environment in System 800xA to the new graphics engine. We will focus on system and hardware requirements, as well as the appropriate workflow to employ when converting graphic displays. Functionality of the Migration Tool that comes with the new graphics will be exemplified. Preconditions for successful evolution and considerations to bear in mind when converting graphic libraries will also be covered in this workshop.

**WCS-20-1 Managing manufacturing information from the user perspective**

ABB is a large international manufacturer of industrial goods with factories all over the world. In this presentation we discuss the implementation of the cpmPlus Enterprise Connectivity technology in ABB's own power products factories, and the benefits achieved by seamless integration of global business process and local manufacturing operations. Special emphasis is put on the benefits of the new technology for the average manufacturing system user.

**WCS-27-1 State Based Control techniques for process automation using System 800xA**

Does your automation design provide direct opportunities for Production Optimization and Operational Excellence regardless of whether your process is continuous, batch or a hybrid of both? State Based Control (SBC), implemented with System 800xA, delivers direct benefits in productivity increases, higher asset utilization and automated response and recovery for abnormal conditions. It also provides an environment for capturing knowledge directly from the control design for any process. The ABB solution overcomes many economic and implementation hurdles that have limited SBC use.

**WCS-41-1 Alarm management from start to finish: A case study presentation**

This presentation will give a real life case study of a large energy company's implementation of Matrikon Alarm Manager. Find out the company's needs, how they were addressed by Matrikon Alarm Manager, and hear the results.

**WCS-43-1 Wireless LAN data communication in industrial networks**

This presentation highlights Wireless LAN technology with regard to its implementation into industrial plants with maximum data security and network reliability. Wireless LAN technology offers an alternative to data cable installations for short and long distances. It can be implemented in new installations as well as expansions of existing industrial data networks.

**WCS-57-1 Sistema 800xA, Ingeniería con Function Designer y Herramientas Bulk**

Este workshop técnico le ofrece a los participantes una demostración del Function Designer, una herramienta del Sistema 800xA de ABB. El Function Designer se utiliza para crear lógicas de control mediante diagramas fáciles de crear y leer. Usted también aprenderá como las herramientas Bulk del Sistema 800xA pueden ayudar a crear la configuración de un proyecto de manera rápida utilizando estos diagramas lógicos.

**WIN-06-1 Instrumentation solutions for the power industry**

The efficiency of your power generation process calls for reliable and accurate instrumentation. As important is the ability to have access to an intelligent, informed support network that will assist you throughout all stages of your process. With ABB you have a broad selection of process instrumentation equipment and systems for use throughout all stages of the power generation process. The utilization of the ABB Instrumentation product portfolio offers you the opportunity to create advanced systems that will help to ensure the safe, reliable and economical performance of power plant facilities.

**WIN-14-1 Using wireless communications in non-critical and remote locations in the water industry**

The use of wireless solutions to reduce operating and installation cost will be the focus of this session. The session will include the use of cellular and telemetry applications in the water market. Applications for lift stations and remote water revenue installations will be examined and the benefits of replacing traditional SCADA with lower cost cellular technology will be explained.

**WMM-01-1 ABB helping Vale Inco create the "mine of the future"**

Using the PEP model, Vale Inco Ltd. selected ABB early in the process, enabling product features to be fully utilized in the overall mine electrification and automation design. ABB's scope for the Totten Mine project includes a full suite of power and automation solutions, starting at the surface with 69kV substation, mine hoists, motors, drives, MCCs and instrumentation, throughout the mine surface plants and underground. The project is also considering control of underground airflow and quality with a "state of the art" ventilation on-demand system. The entire scope of supply is seamlessly integrated together with ABB's Industrial IT - 800xA automation system.

**WPG-03-1 Harmony training simulator**

Join this session for a discussion on ABB's Harmony Training Simulator (HTS). See how this product application allows Symphony controller module configuration to operate in a "virtual" environment on one or more PCs. A brief introduction to the HTS configuration will be included, as well as a discussion of the connection to Composer and to an operator console.

**WPG-06-1 Turbine automation for the industrial powerhouse application**

In this workshop, participants will learn about the complete turbine automation capabilities of ABB for the industrial steam industry, including basic governor and extraction control, start-up sequencing, condition monitoring, mechanical/ hydraulic retrofits, energy management and more. Brief case studies are included for the areas of condition monitoring, mechanical/hydraulic retrofits and energy management to highlight our complete complement of products and services in these areas. Features and functions of the turbine interface modules for System 800xA will also be discussed.

**WPO-31-1 Transformers designed for wind application**

This class will look at the many design considerations that exist when designing a pad mounted transformer for the unique requirements of a wind application. You will learn about GSU and grounding transformer configurations and factors that should be taken into consideration when selecting the right transformer. Some of the topics covered in this presentation will be conductor materials, efficiency (including DOE national efficiency requirements and options to achieve no load and load loss performance), fusing options, loop vs. radial feed and terminations, switching options and dielectric fluids to name a few.

**WPO-36-1 Improved utilization with substation automation**

This ABB and utility-led panel discussion will look at decisions that substation owners are facing on an increasing basis, including protocols and the use of both existing and new technologies that pull data to a central location. The panel will also look at the increasing acceptance of standards such as IEC 61850 and how this standardization is changing the face of substation automation in such ways as increased global competition, reduction of equipment duplication, lowered costs and higher substation performance.

**WPO-57-1 Relé Mitigador de Falla de Arco del tipo REA**

En combinación con el Tablero de ABB Arco-Resistente, el relé de protección de arco REA provee la mejor protección contra falla de arcos que se encuentra en el mercado. El 65% de las fallas de arco ocurren cuando el operador realiza trabajos de mantenimiento en los Tableros Eléctricos, dejando así las puertas abiertas, exponiéndose a posibles lesiones en caso de una falla interna de arco. El relé REA protege al operador detectando dichas fallas en menos de 2.5 milisegundos, reduciendo así la energía de arco, hasta en un 80% en la mayoría de aplicaciones. Solamente ABB puede ofrecer la seguridad y el desempeño que se traduce en tranquilidad para aquellos que especifican, recomiendan y operan Tableros Eléctricos. Este curso está orientado a clientes Industriales, Empresas Distribuidoras y Generadoras en América Latina, que buscan adquirir Tableros Arco-Resistentes o que son usuarios de Tableros Convencionales /Arco-Resistentes y planean incrementar la seguridad para su personal y equipo existentes.

**WSE-05-1 Remote optimization services: Leveraging remote access for delivery of global expertise**

Learn how ABB's subject matter experts from around the world can monitor, diagnose and optimize asset and process performance technologies. Vast amounts of data can be processed through rules engines and expert evaluations to provide valuable assessments and recommendations for optimized performance.

# Thursday, March 26

## SESSION 12: 8:00 a.m. – 9:00 a.m.

### **CCS-03-1 Asset optimization through control system evolution: Bayer Berkeley**

In this workshop, Bayer Corporation describes the collaboration between ABB and Bayer's Berkeley facility to evolve Bayer's existing control system to include System 800xA Asset Optimization. Strategy development, business needs, budget, goals and project results will be discussed, as well as Bayer's plans to capitalize on their asset optimization capabilities in the future.

### **CCS-06-1 Custom solutions with NOVA Chemicals**

Customers are often looking for creative software solutions to extend the functionality of System 800xA, integrate existing plant systems or facilitate evolution and migration strategies. Consult IT's Solutions Group offers these capabilities. This workshop describes the types of solutions already provided by this team, and specifically discusses how several custom solutions were used to assist NOVA Chemicals in reaching its goals.

### **CCS-11-1 AmerenUE replaces older training simulators with ABB Harmony Training Simulator**

Learn how one customer, AmerenUE, migrated their fleet of older training 'stimulators' to the new ABB Harmony Training Simulator (HTS). The HTS application allows Symphony controller module configurations to operate in a virtual environment.

### **COG-08-1 Sakhalin II -Telecom challenges in providing latest technology in a project span of several years**

This case study reviews the issues associated with overcoming challenges of delivery of multiple telecommunication systems for a project spanning several years. Some of the situations reviewed will be interface handling, technology development and deployment. The case study features Sakhalin II, the world's largest oil and gas telecommunication project that consists of three offshore platforms, an onshore processing plant, an 800 km pipeline, booster station and several block valve stations and an LNG plant with shipping terminal.

### **TCS-01-1 Boiler optimization with Freelance 800F**

This workshop shows participants how to optimize boiler efficiency by upgrading from jackshaft control to modern automation technology. The O2 and fuel mixture control will provide immediate cost savings for project justification.

### **TCS-23-1C System 800xA introduction**

This training session will introduce the System 800xA Extended Automation System and the benefits it delivers. This overview presentation will exhibit how System 800xA extends functionality beyond that of other control systems through unparalleled connectivity, integrated applications and its many industrial IT enabled partners. This presentation sets the stage for many subsequent sessions and shouldn't be missed.

### **TCS-29-1B Compact HMI 800 and new Process Graphics 2 training**

This training provides an overview of the functionality of Compact HMI 800 5.0 as well as the new Process Graphics 2 and PLC Connect. Compact HMI 800 is part of the Compact Products 800 offering - a range of products that can be used individually or combined to create cost effective control solutions. Compact Products 800 are built with openness in mind and are based on standards to ensure that they can be used with other products on the automation market. All participants will get a trial version of the Compact HMI 800.

### **TFM-02-5 (NOTE: 5 hour session)**

#### **Operating and maintaining Stressometer FSA 7.0 - Part 2**

This course teaches students basic, theoretical and practical flatness measurement and flatness control using Stressometer version 7.0. The training targets people who will perform operation, service and maintenance on Stressometer version 7.0. It is desired that students have knowledge of the target process and basic knowledge of mechanics and electronics. Upon completion of this course, students will be able to describe the basic design principles of Stressometer 7.0 and its range of functions, and perform basic operation, maintenance and service of the Stressometer 7.0 system.

### **TIN-08-1 Why use wireless in your plant?**

Due to the expected lower installation costs associated with wireless instrumentation, it may seem like a no brainer to use wireless everywhere, but this is not the case. This session covers not only where wireless instrumentation will have the greatest benefits, but also how its information can be used to better monitor and understand process conditions and asset health using software tools such as Asset Vision Professional. In addition to using new battery powered wireless instruments, the session will also explore the use case for retrofitting existing wired HART instruments to also have wireless communications.

### **TLC-11-1 The basics of protection in power distribution**

This presentation will cover the basics of circuit protection and coordination in electrical power distribution plants. What are the main faults that can occur in this type of plant? What equipment is necessary to clear these faults, and how is this equipment displaced? We will also cover how UL standards are involved: UL 489 and UL 1066 (Protective Devices), and UL 1558 and UL 489 (Protective Systems).

### **TLD-01-1 Advanced drive functionality: Is a Programmable Logic Controller (PLC) required?**

Learn how to use timers, counters, proportional integral derivative (PID) control and more, to optimize the control of a drive.

**TPO-09-1 Financial justification: Using generator circuit breakers for improved unit protection**

This session will present the financial justification for investing in generator breakers within existing power plants. Additionally, it will show how the addition of generator breakers is a wise economic choice in comparison to alternate design changes, particularly when an environmental upgrade project is contemplated. Lastly, the rationale for replacing old circuit breakers with state of the art SF6 generator breakers will be explained.

**TPO-30-1 Using BIOTEMP® vegetable-based oil in power transformers to reduce fire and environmental risk**

Over two hundred million gallons of petroleum-based mineral oil are used in electrical apparatus every year. There are rising concerns about hazardous spills and explosions of mineral oil-filled transformers in sensitive areas, compounded by an aging network and increased demand. This has driven the development of new environmentally friendly and “less flammable” fluids. ABB’s natural ester fluid, BIOTEMP®, is a high-oleic acid sunflower oil exhibiting 99 percent biodegradability and a 360°C fire point. We will cover the benefits and challenges of using this fluid in power transformers for both new transformer production and as a retrofit solution.

**TRO-01-1A Introduction to robot studio**

RobotStudio 5 with ABB's VirtualRobot Technology allows you to achieve true off-line programming of your robotic work cell. The session will provide a demonstration of the key product features, including reach and cycle time verification in the proposal phase of the project and various other project tools to reduce programming hours and overall project timelines.

**TTR-08-3 (NOTE: 3 hour session)****Introduction to ABB DCS800 Drives and serial communications: Hands-on experience**

This technical training will provide you with an overview of ABB’s DCS800 DC Drive with serial communications. You will learn key characteristics of the DCS800 that make this drive able to handle a multitude of DC applications with intuitive and flexible programming techniques. This session provides hands-on experience with a DCS800 programming demo and Drives Window Light. Various Programmable Logic Controller communications protocols will also be reviewed.

**TTR-10-2B (NOTE: 2 hour session)****System 800xA Drives integration hands-on experience**

This technical training introduces participants to the concepts of configuring ABB’s AC800M controller using PLC Control Builder and configuring a process panel as an operator interface. The project in the controller emulates a “tissue” paper machine. The project uses an ACS800 drive to control one section of the machine. The faults, alarms and real trending can be seen on the process panel. The variables as integers and words are passed via variables between the drive and controller and then to the panel.

**TTR-14-2 (NOTE: 2 hour session)****System 800xA for Harmony hands-on experience**

This technical training will provide general information on the System 800xA for Harmony connect system. After a brief introduction to the architecture, users will participate in simple configuration exercises related to an operator workplace. Participants will navigate an operator workplace, configure a harmony tag, and explore the basic methods of trend and alarm configuration. Attend and see how the System 800xA for Harmony connect system can easily integrate into your existing INFI 90, Symphony investment and enhance your existing process control strategy.

**WCS-15-1 How to choose KPIs relevant to your business objectives**

One of the main buzzwords used in business today is Key Performance Indicators (KPIs). These are being touted by consultants and industry analysts as the mechanism to drive organizational change and improve performance. While the value of KPIs and the visibility that they provide is unquestionable, the challenge comes from picking the ones that are most appropriate to the business. This workshop will explore ways to determine which KPIs should be focused on, and how to use them once they are in place.

**WCS-58-1 Sistema de Control Freelance 800F**

El Sistema de Control Freelance 800F de ABB combina una arquitectura de control moderna y abierta con una herramienta de ingeniería fácil de usar, donde los dispositivos de campo están completamente integrados en la ingeniería del sistema de control. Freelance 800F le ofrece ahorros potenciales en ingeniería, comisionamiento, pruebas, servicio y mantenimiento. Una aplicación reciente: el control de una caldera que quema cascarilla de arroz como combustible, una interesante y exitosa historia basada en Freelance 800F y en la atención y servicios técnicos de nuestro Integrador de Sistemas en Costa Rica.

**WIN-05-1 Increase flow control efficiency and reduce cost using digital valve positioners**

This workshop provides an overview of ABB's digital valve positioners. Digital positioners help save time during the calibration/commissioning steps. ABB digital positioners also have unique features for on-line accuracy with benefits for flow control efficiency. In addition, these positioners help reduce other operating costs. The workshop will highlight these benefits with real-world examples, as well as invite discussion from workshop attendees.

**WMM-10-1 Reactive power compensation and active filtering for low voltage DC drives: Industrial application**

In this presentation participants will learn more about a system solution with an IGBT Supply Unit (ISU) for reactive power compensation based on the standard ABB Industrial Drive. This application is used on a electric shovel with DC drives in a quarry under weak grid conditions. Additionally to the compensation of reactive power, the ISU is able to filter harmonic distortion to get a better voltage quality. The operation of ABB AC and DC drives at the same supply also provides an efficient system design with remarkable energy savings.

**WOG-01-1 ABB capabilities for electrification within oil, gas and petrochemical markets**

This presentation will describe the new Center of Excellence for Electrification within oil, gas and petrochemicals, highlighting capabilities for different application areas. Additional areas of discussion will focus on concept studies, main references, R&D developments and technologies for power generation and distribution drives applications, as well as project MEC execution possibilities around the world.

**WPE-01-1 Fault tolerant SVC ArcComp system for DC arc furnaces**

A steel plant with local generation and connected to grid, which feeds power to many DC arc furnaces, faces a great challenge during voltage dips and ground faults that cause tripping of power systems. Such trips result in loss of production and causes stress on generation due to loads throw off. At ESSAR Steel, where generation is in excess of 700MW, trips cause serious operational issues. ABB collaborated with ESSAR Steel to develop an SVC control system with Fault Ride Through feature. Sustainability and functionality of the new control system were easy to record using a fast data logger system.

**WPO-08-1 Connect and communicate: Automation solutions for alternative energy**

This session will delve into the wind-plant low voltage electrical and control systems from the perspective of interconnections and communication. The course will examine data that can be transmitted on the bus, variables that can be monitored and controlled, and information that can be monitored to improve system performance and reliability.

**WPO-16-1 Going underground with AC and DC transmission**

In recent years, advances in cable technology have helped support growth in the power grid. This course will discuss issues related to both underground and sub sea cables. An overview of extruded and oil impregnated cables will be covered. Discussions will be held on the advantages of AC and DC and when each should be used.

**WPO-51-1 Proteccion de Sistemas y Equipos con Apartarrayos**

Comparta la experiencia de la proteccion mas rapida en los sistemas de Potencia, Conozca los terminos usados en lenguaje de la coordinacion de aislamiento y la proteccion contra frentes de onda ocasionados por descargas atmosfericas o maniobras en los sistemas de potencia. Identifique las sobretensiones en los sistemas de potencia su origen y formas de manejo. Reconozca los diferentes tipos de apartarrayos sus características y areas de aplicacion. Donde y como instalarlos. Cuales son las pruebas de tipo y de rutina. Cuales los elementos constitutivos de cada tipo de apartarrayos, compare de los diferentes tipos de aislamiento y monitores de las descargas y accesorios, Identifique los parametros para una buena seleccion de acuerdo a su aplicacion.

**WRS-01-1 Increasing plant production and optimizing energy costs with ABB's Motor Performance Management**

Plant motor energy costs are typically 60 to 70 percent of a plant's electricity bill. This presentation explores how ABB's Motor Performance Management, a partnership where ABB assumes responsibility for managing a customer's electrical motor performance and contractually commits to performance improvements, can improve reliability and reduce total motor energy costs by 2 to 5 percent.

**WSE-06-1 Security and remote monitoring with System 800xA**

Learn how System 800xA's inherent access control features, network architecture and integrated secure broadband remote access technologies enable reliable and secure remote monitoring. Discover various control system network configurations and secure communications technologies that can be used to make remote monitoring of your System 800xA viable.

**SESSION 13: 9:30 a.m. – 10:30 a.m.****PPO-08-1 Remote monitoring techniques for power equipment to enable condition-based maintenance**

Maintenance inspections are typically time-based, and problems can emerge that threaten the equipment before the problem is recognized. We will review monitoring equipment that can sense risk factors for power transformers and high-voltage breakers, and either apply on-board analytics or communicate data to a system that can analyze and act on it. A utility panel will outline their experience, which includes a reduction in unexpected failures, saving money and preserving customer satisfaction.

**TCS-19-1C Reducing time to decision and action with System 800xA**

This workshop covers how System 800xA can help reduce the time it takes for operations, maintenance and engineering personnel to make the right decisions and take the correct action. Reducing time to decision saves money, decreases waste of resources and increases uptime and Mean Time Between Failures (MTBF). Through features like personalized workplaces, intuitive navigation, integrating and filtering information and notification techniques like Short Messaging Service (SMS) messaging, plant personnel can be notified and given current, relevant information. Real-life customer applications will be shared.

**TCS-21-1 System 800xA Batch Management for small DCS solutions based on Freelance 800F**

Batch functionality today is not related to system size. Even the smallest production cell might need batch functionality. This workshop provides information about how SFC-Management and an S88-State-Engine function block can be utilized. To address the full needs of today's flexible batch production, 800xA Batch Management comes into play. This workshop gives information about when and how to utilize these tools.

**TIN-04-1B How to configure a pressure and temperature transmitter**

There are several programming tools for configuring temperature and pressure transmitters. In this session, we will cover these programming tools, which include the use of handheld communicators, PC software programs and the use of the integral display. We will include hands-on training utilizing some of these tools.

**TLC-06-1 Coordination in power distribution plants**

Coordination in a hierarchical distribution system can be done in various ways. This session will show you how to optimize the selection of the circuit breakers at each different level of the distribution system based on: current selectivity, current-time selectivity, energy selectivity and zone selectivity.

**TPO-22-2 (NOTE: 2 hour session)****Power equipment 101**

This session will give an overview of many different types of power equipment. It serves to give a better understanding of what type of equipment is available and what is required in the power industry. This course is perfect for new engineers attempting to understand the functions of various equipment types and how everything in the power industry is related.

**WCH-02-1 Best practice for chemical batch applications**

This session provides an understanding of ABB's engineering methodologies when designing Batch projects for the chemical industry. It is focused on designing batch systems using ISA-88 principles. The benefits of using object-oriented programming techniques, pre-configured and pre-tested libraries, and bulk engineering methods will be highlighted. You will see the advantage in starting a project with use of generic batch libraries using state driver concepts for equipment module control.

**WCS-04-1 Configuring personalized workplaces for multiple monitors and large screens**

This workshop focuses on how to better adapt the operator environment based on personal preferences. See how to configure an operator workplace for a single screen, as well as for multiple monitors and large screens. We will cover different display ratios/resolutions, workplace configuration, user configuration, view class configuration, navigation alternatives, display aspect links and display parameters. This workshop is a must if you are planning an operator environment with System 800xA using multiple monitors and large screens.

**WCS-37-1 Collaborative research on alarms and display effectiveness**

The Center for Operator Performance is a collaboration between industry and academia that researches human factors issues of interest, of which ABB is a founding member. The results of two recent research efforts that have focused on the impact of alarm and display design on operator performance will be presented. One study quantified the impact of ten different alarm actuation rates on two different alarm display designs. The other study surveyed color usage in process control and compared it to best practices in military and aviation. Implications of both studies on operator interface design will be discussed.

**WCS-40-1 Understanding the Unified OPC Architecture**

The focus of this workshop is to provide an overview of the OPC Unified Architecture specification. The OPC Unified Architecture provides a foundation of base service developed as web services providing architecture for secure, reliable interoperability for the transportation of data/information across the automation and enterprise hemisphere. The OPC Unified Architecture brings together the existing OPC technology that has been developed over the last 10 years to an integrated platform based on web services.

**WIN-09-1 Unlocking applications in your plant by using wireless**

The intrinsic low cost nature of a wireless solution means that you can now consider monitoring process points which were previously too costly. A wireless solution is not limited to monitoring new information. Less than 10 percent of the 26 million installed HART devices are remotely monitored. The ABB wireless adapter can unlock this stranded information to maximize availability. ABB has worked in collaboration with major users and specification bodies to release WirelessHART, the industry wireless standard at the instrument level.

**WIN-50-1 Las Novedades en Instrumentación y su Importancia**

Este taller muestra las tendencias en el mercado de la Instrumentación y la dirección de los productos ABB, más importante aún, como estas tendencias y avances se traducen en beneficios tangibles para los dueños y operadores de plantas de proceso. Discutiremos las nuevas tecnologías de medición y control así como nuevas aplicaciones para productos y tecnologías ampliamente probadas, incluyendo algunos casos de éxito. Invitamos a los asistentes a participar en una franca discusión sobre qué novedades realmente cambiarán el horizonte, y cuáles no serán más que un tema pasajero. Únase a una sesión dinámica e interactiva.

**WLD-07-1 Regenerative drives: When and where to apply them**

Sometimes your motor wants to act like a generator. Learn about the various methods available to deal with motor power regeneration.

**WLS-02-1 Benefits of evolution for life sciences manufacturing systems**

ABB has developed solutions for protecting your investments in control system applications. This workshop covers control evolution strategies applicable to the life sciences industry.

**WMM-03-1 Going green: Energy generation from waste heat**

High and rising electricity prices and the requirement to reduce CO<sub>2</sub> emissions are strong drivers for innovative technical solutions. Energy intensive industries like cement and steel are looking for solutions to reduce their energy costs. An untapped energy resource is the vast amount of low temperature heat lost in many industry processes today. This session will provide answers to the following key questions: How does ABB's new type of small power plant convert the waste heat into electricity, without using fuel or generating CO<sub>2</sub>? What are the benefits and impact on energy efficiency?

**WOG-03-1 IT architecture security and safety for your oil and gas facility**

This session will focus on how to connect automation and monitoring systems to office networks in order to ensure a safe, reliable and user friendly environment. Key technologies are asset management systems, historians, wireless communication and remote access to your applications.

**WOG-08-1 ABB remote services to support Shell Integrated Operations**

The rapid advancement of automation and information technology in the oil and gas industry requires a high level of expertise and resources to manage and maintain as it evolves, and to ensure security and optimization at all times. The ABB Service Environment™ has been developed specifically to meet these challenges. Included in this case study is an overview of the shared work processes, procedures and remote services delivered by ABB Service Environment™ to support the Shell Integrated Operations for offshore and onshore plants.

**WPG-04-1 Power plant optimization and NOx reduction made easy**

Discover how your plant can achieve NOx reduction while simultaneously improving heat rate. This presentation will describe how ABB's Multivariable Model Predictive Control (MPC) application manipulates O2 bias, windbox bias, aux air dampers, over fire air dampers, furnace biases, mill biases and burner tilts. The controller's main objective is to keep NOx and opacity below maximum limits. Because a multivariable controller may have extra degrees of freedom, additional optimization objectives are attainable. Learn how the extra degrees of freedom are used to reduce O2 and minimize reheat spray flow.

**WPO-09-1 Converter technologies for alternative energy**

This class will provide an overview of different types of converters and how they are applied in renewable energy applications. Participants will learn about the different converter designs and how they enable the converter to perform in harsh operating environments. We will also explore how these designs comply with the current electrical requirements and how to select the best converter for the application.

**WPO-19-1 How to save money and shorten the delivery time for new substations**

Driven by aggressive project schedules and demand for increased value, ABB worked with our customers to develop a high quality and dependable modular substation. Pre-engineered building blocks can be assembled in a variety of configurations to suit each unique project site. The individual modules of the substation are built on steel frames with integrated cable raceways and fully tested in a controlled factory environment. Project risks are greatly reduced, as the site work is limited to setting the modules on pier foundations, reconnecting the modules, terminating the connections and final system testing.

**WPO-20-1 Improving outage management through advanced Distribution Management Systems (DMS)**

ABB's Network Manager DMS contains outage management and advanced distribution system applications that can improve operational efficiencies, increase customer satisfaction, and maximize asset utilization. This session will focus on recent Network Manager DMS customer implementations, and applications including Unbalanced Load Flow, State Estimation, Fault Location, and Restoration Switching Analysis, as well as Simulation Mode in Network Manager DMS.

**WRS-02-1 Reliability and maintenance excellence: Why certain companies find it difficult to achieve**

Most maintenance and reliability professionals have seen some form of the hierarchy of maintenance methodologies, from reactive maintenance to lifecycle management, and recognize the need to scale this ladder. Most would agree that the first step is the most critical, and the one holding the biggest financial opportunity. A reliability management program that provides manufacturers all they need to make this important first step can be gained through a combination of focused assessments, business process improvements and an effective hosted reliability system. This presentation demonstrates the successful application of such an approach in several process and manufacturing industries.

**WSE-04-1B Power plant performance optimization and lifecycle support**

Leverage ABB power plant process application expertise to drive continuous improvement of plant performance. Learn how your power plant can leverage an ABB tailored support program. Specific case studies will be used to illustrate how improvements were achieved in unit ramp rate, NOx levels, overall system stability and more.

**SESSION 14: 11:00 a.m. – 12:00 p.m.****CCS-12-1 PC Device Library benefits during System 800xA engineering**

This workshop discusses the benefits of using the Process Control Device Library (PCDeviceLib) as an engineering standard within System 800xA. The PCDeviceLib includes control modules, faceplates and graphic display elements for a wide range of device objects commonly found in industries like oil and gas, chemicals, life sciences, pharmaceutical, and pulp and paper. During this workshop we will take a detailed look at how the PCDeviceLib can simplify your engineering efforts, reduce your configuration, testing and commissioning time, lower project costs and simplify the overall long term maintenance of your system.

**CLS-02-1 Pluses and pitfalls of planning an Enterprise Building Management System**

In this case study, Mr. Sanjyot Bhusari explains how Affiliated Engineers developed their Enterprise Building Management System (EBMS). EBMS is a proactive way of managing and optimizing facility functions and business processes such as energy management and operations. Initial planning, budgeting, problem-solving, value of collaborating with suppliers and lessons learned - all will be addressed in this presentation. Regardless of whether your multiple-building campus supports life sciences, health care - or any industry - anyone considering an EBMS or supporting an existing EBMS project will benefit from learning more about this successful example by attending this workshop.

**COG-01-1B OIS/OIC evolution to 800xA workplaces at Petrobras REDUC Refinery**

Petrobras REDUC Refinery had the most operator stations based on INFI 90 equipment. This workshop shows the evolution from OIS/OIC and Conductor NT Operation Stations to Process Portal A (PPA) using Harmony Connect interface on 800xA system. The project will also show the most important topics used during conversion, in order to reach a better performance with risk mitigation once these projects were made with a hot swap methodology. Important lessons of operational excellence, optimization, efficiency and productivity will be presented.

**PPO-01-1 Applying asset information for improved decision making for power equipment maintenance**

A utility panel will discuss various lessons learned and projects underway to leverage data accumulated through remote monitoring and SCADA. Properly filtered and acted upon, this shows promise for focusing inspection and maintenance when and where it is needed, reducing risk, reducing unexpected failures and reducing cost for a transmission system.

**TCS-26-1 System 800xA for Freelance: How to utilize the extended functionality of System 800xA**

The Freelance 800F Compact Control System is ABB's offering for small to medium sized automation in the process industries. When your system grows and requires additional functionality, you want to make use of the power of ABB's System 800xA. 800xA for Freelance offers seamless integration of Freelance controllers to 800xA - controls and I/O remain untouched. This workshop provides information about how to utilize 800xA for Freelance to evolve your small-to-mid sized control to address larger needs.

**TIN-01-1B A simplified approach to loop tuning**

Loop tuning can often present problems of where to start and which terms to use. This session will present the control definitions, and provide a simple yet effective way to estimate the final tuning values for proportional or gain, integral, and derivative settings for your process.

**TLC-01-1 Proven unique solution to reliability challenge: Wireless Interface for Sensor and Actuators (WISA)**

Real-time, deterministic, ability for hundreds of discrete inputs and outputs (I/O) to wirelessly communicate at each node with no degradation in throughput. Immune to the major types of interference that interrupt other wireless systems. Whether you want to eliminate downtime associated with wires, reduce the commissioning time of systems with lots of wires or generally gain freedom of movement by eliminating restrictive wires, WISA is the solution. Reliable, robust, proven wireless communication....and wireless delivery of power too...with no batteries! WISA is the future....See who is living this future, and how to become part of it.

**TTR-09-1B System 800xA Asset Optimization hands-on experience**

In this workshop, participants will configure and deploy asset monitors in the 800xA Extended Automation system. Included are asset monitors for fieldbus devices and PC Network and Software Monitors (PNSM). Examples of work order submission to a Computerized Maintenance Management Systems (CMMS) such as SAP and Maximo will be shown. This session also covers how adding asset monitoring aspects to your plant objects will provide powerful collaboration between maintenance and operations.

**WCS-19-1 Apple or snake? Picking cyber security's low hanging fruit**

No one questions that improving the security of control and SCADA systems is important to industry. What is debated is the road to true security versus just spending a lot of money. This session analyzes security program successes and failures in industrial operations, distilling the three key tasks that have had the biggest impact in improving control system security at the lowest cost. Finally, we discuss two key causes of program failures – why well-intended security projects end up biting their sponsors. Armed with this information, you can create a program that delivers security without costing the farm.

**WCS-38-1 The next generation of managing information**

Are you managing your data, or is the data managing you? Do you have data or do you have information? Is the information with the people that need it to make key business decisions? These are three key questions to be answered when designing and augmenting your next generation information system layer. This workshop will focus on how ABB's Industrial IT Collaborative Production Management product portfolio can provide the necessary ingredients to deploy next generation information systems.

**WCS-48-1 Using cameras with System 800xA**

This workshop focuses on how to integrate cameras and live video into an 800xA system environment. We will demonstrate/explain how to configure and use an integrated solution with multiple cameras, both analog and web-enabled. We will cover functions like: camera group displays, camera faceplates, camera recording and live video aspects of process objects. We will also explain how you can configure display format, refresh rate, recording time, camera position, etc. This workshop is a must if you are planning to integrate cameras into your 800xA system.

**WCS-59-1 Analizadores de Gas ABB para el Monitoreo Continuo de Emisiones**

La medición de emisiones tóxicas es cada vez más y más importante para las industrias de hoy. Los requisitos legales son cada vez más estrictos y al mismo tiempo, las empresas desean colaborar activamente con el fin de proteger el medio ambiente. Este taller explica cómo los sistemas analíticos de ABB para el Monitoreo Continuo de Gases ofrecen soluciones útiles que contribuyen a resultados óptimos, al mismo tiempo que mantiene costos bajos. Los Sistemas Analíticos de ABB son compactos, fáciles de manejar, de programar, de mantenimiento a largo plazo, fáciles de calibrar y permiten la operación remota.

**WIN-02-1 Commissioning a wireless network**

The planning and commissioning of a wireless instrument network is not too dissimilar to that of the wired version. This presentation will describe how the concerns of reliability, security and interoperability are addressed during planning.

**WLD-08-1 Select the right enclosure for your drive: What NEMA or IEC rating works best?**

You've picked the right drive, right motor, and now need to pick the right enclosure type. How do you evaluate NEMA versus IEC ratings, and which enclosure type you should consider? This session can help guide you in the right direction, and also help if considering flange-mount kits and other options to optimize your package.

**WOG-10-1 Use and design of wireless in your oil and gas facility**

Wireless technologies have penetrated the markets within the consumer and electronics industries in the past years. However the maturity and reliability of the existing solutions to use in significant, close to the process, industrial applications is much newer to date. ABB has been delivering wireless technology to connect different parts of the extended automation system within oil and gas facilities. We now utilize the experience and lessons learned to also apply wireless sensor networks in a holistic and integrated fashion. An example of this is our entirely wireless solution for vibration monitoring of important industrial assets.

**WPG-05-1 Practical applications of fieldbus and wireless technologies in the power plant**

Join us for a discussion and overview of the concepts behind the three fieldbus technologies (HART, PROFIBUS and FOUNDATION Fieldbus) and their applications in a power plant. We will compare the different architectures, integration components and various strengths provided by these fieldbus technologies. In addition, this workshop will address the variety of ways that wireless technology can be used in a power plant today.

**WPO-10-1 Delivering the complete connection eBOP: Electrical Balance of Plant**

This class will look at the systems that can help to ensure the power you generate gets reliably and economically delivered to the grid. How we can use the knowledge of our products to develop eBOP designs that meet the electrical, geographical, and environmental constraints of the project while delivering a solution that has the fastest possible ROI.

**WPO-26-1 Reduce installation and ownership cost with prefabricated power distribution centers**

The interest and use of prefabricated modular, metal enclosures for switchgear and auxiliary equipment has grown at a rapid pace. Owners and engineers alike are realizing the benefits of utilizing an engineered self-contained unit as opposed to a conventional, site-built structure. Not only is a prefabricated power distribution center completely coordinated, assembled and tested by our partner Metal Systems, it can serve as a complete unit substation. Advantages include single source responsibility, coordination, and accountability for a complete system, reduced installation and ownership costs and application flexibility.

**WRO-06-1 Robotics for alternative energy**

The race is on to implement alternative energy resources into an overall energy scheme. Robotics are playing an important part in bringing this fast-paced manufacturing sector on-line.

**WRS-04-1 Overcoming an economic downturn with optimized maintenance management**

In times of economic slowdown, it is always good to remember the survival techniques used last time similar challenges were faced. On a corporate level, the first measure to prepare for a period of reduced demand and tight cash is to curb expenditure wherever possible. On the level of industrial asset management and maintenance, the prime strategy is often to postpone any major investments in plant renewals. With this comes an increased responsibility for the maintenance department. A professional and focused approach helps to live up to this responsibility.

**SESSION 15: 1:30 p.m. – 2:30 p.m.****CCS-10-1 Klabin MA1100 project: Expansion and integration of a pulp and paper mill**

This presentation will describe how ABB, using the System 800xA Extended Automation platform, helped Klabin, the largest producer, exporter and recycler of paper in Brazil, to overcome the challenge of a production expansion within an existing plant. This was achieved without interfering in routine operations of the mill, integrating the new automation system with the existing DCS in a transparent way. Additionally, ABB extended the former DCS functionality, providing advanced features such as process simulator's interface, asset management and remote access to instrumentation and motors.

**CLD-01-1 Harmonic mitigation technology to meet IEEE-519 standard**

Harmonic distortion creates problems such as poor power factor, transformer and distribution equipment overheating, and random breaker tripping. How is distortion created, and what are effective ways to address this issue? IEEE-519 set forth distortion limits for power users; these limits defined the maximum current and voltage distortion percentages allowable. How do you use passive and active technology to meet these standards?

**TPO-07-1B Factors to consider in the life assessment of a power transformer**

Much attention is rightly focused on the reliability risks of our aging fleet of power transformers and the enormous cost in terms of dollars and time to replace them. But there are many factors beyond age that place a transformer at risk of failure. In this session we will cover the main contributing factors, the means of assessing their likelihood of impact on a particular unit, and steps that can be taken to prioritize actions to extend their life within a limited budget.

**TPO-29-1 Application of breakers and reclosers for reliable distribution operation**

This course will provide new engineers with an introduction to the use of breakers and reclosers in the power industry. Participants will learn what makes up a breaker, its functionality and constraints, and the roles of a recloser. Discussion will focus in particular on how and when this equipment is applied for reliable distribution operation today.

**TRE-01-3 REF615 Hands-on training**

The REF615 is a powerful and simple feeder protection relay perfectly aligned for the protection, measurement and supervision of utility substations and industrial power systems. Engineered from the ground up, the new feeder protection relay has been designed to unleash the full potential of the IEC 61850 standard for substation automation devices. This three-hour course introduces the REF615 Feeder protection relay and includes hands-on exercises and discussions on topics including: basic relay operation via local HMI and Web HMI; outline of relay settings; and an overview of settings and parameters.

**TRO-01-1B Introduction to robot studio**

RobotStudio 5 with ABB's VirtualRobot Technology allows you to achieve true off-line programming of your robotic work cell. The session will provide a demonstration of the key product features, including reach and cycle time verification in the proposal phase of the project and various other project tools to reduce programming hours and overall project timelines.

**TTR-11-2C (NOTE: 2 hour session)****System 800xA Graphics Design hands-on experience**

This session is intended for users of 800xA systems that wish to explore the new PG2 Graphics Builder tool. While the 800xA for Harmony connect platform will be used for this session, the overall methods are similar for all connectivities. Users will participate in simple configuration exercises related to graphic displays, graphic elements and faceplates. Attend this session and see how collaborating with ABB training can enhance your knowledge and power with your 800xA system.

**TTR-12-2C (NOTE: 2 hour session)****System 800xA OPC Interfacing hands-on experience**

This session will explain OPC terminology such as groups, items and properties. Participants will use test servers and clients to test OPC connectivity, apply an understanding of OPC fundamentals such as synchronous and asynchronous subscriptions to troubleshooting problems with connectivity, learn how OPC COM objects are defined in the registry, learn the 800xA OPC architecture, interface a third party OPC Server to an 800xA system, and interface a third party OPC client to an 800xA system.

**WCS-17-1 Integrating documentation in System 800xA**

This technical workshop will show how much time can be saved if all the reference material needed for daily activities with System 800xA was integrated and available on-line. Participants will see a demonstration to illustrate how easy it is to integrate documents and reference material into System 800xA. Anyone can easily take advantage of this time-saving capability, making this workshop a must for all System 800xA users.

**WCS-60-1 Soluciones de ABB para Cogeneración**

Aprovechando la previa experiencia en diseño de plantas de fuerza completas, ABB desarrolló productos y soluciones de alta tecnología basados en el conocimiento del proceso, de sistemas eléctricos y sistemas de automatización involucrados en el diseño de las mismas. El concepto ICE (Instrumentación, Control y Eléctrico) es una solución integrada, tecnológicamente avanzada, eficiente en tiempo y recursos, y económicamente ventajosa; además de permitir durante la ejecución del proyecto identificar potenciales oportunidades de mejora que pueden significar importantes ahorros. El concepto es aplicable a todo tipo de plantas de fuerza incluyendo las de cogeneración.

**WIN-11-1B Wireless and asset management in process industries**

The arrival of the industry standard WirelessHART specification has resulted in the development of wireless instruments that can work together within a multivendor application. This presentation will describe typical applications of monitoring, control and asset management using such a wireless instrument network.

**WLS-03-1 CPM for life sciences**

Manufacturing production operations can no longer operate with shop floor control separate from business management systems and remain competitive. The operations manager needs real-time insight to key performance indicators for the production processes, and real-time understanding of the impact on production commitments, Overall Equipment Effectiveness (OEE), and the return on investment from the production operation. Overall Equipment Effectiveness is a hierarchy of metrics, which focus on how effectively a manufacturing operation is utilized. The results are stated in a generic form that allows comparison between manufacturing units in the same or different industries.

**WOG-09-1 Technology and R&D in oil and gas**

Increasing complexity is a key feature of the oil and gas industry today. There is a need to support operations in various environments and geographically remote locations, while increasing efficiency, improving reliability and strengthening health and safety. This presentation will provide an overview of the impact that technology and R&D has on the oil and gas industry, and will illustrate the case through examples from a successful strategic initiative where we have deployed amongst other wireless, robotics and remote operations.

**WPE-02-1 Power electronics for gas turbine based machines**

The development of Power Electronics allows for sophisticated control of numerous aspects of gas or combined cycle gas turbine-based power stations. Static Frequency Converters (SFC) and excitation systems based on digital technology are at the heart of these controls. SFCs applied as a starting means for large gas turbine-generator sets and advances in excitation system technology provide improvement to the quality of the generator voltage and reactive power and control of the excitation system. This session offers an overview of SFCs and generator excitation systems and how the recent advances in technology can be applied in an upgrade project.

**WPG-02-1 Energy management and optimization for the industrial powerhouse**

Find out how model predictive technology can positively impact operating performance, and learn about ABB's capabilities in the area of advanced control solutions for the industrial powerhouse. A large co-generation facility with multiple boilers, turbines and headers is a complex process to operate, especially when process steam demand can vary quickly and the current economic situation with spot market prices for fuel gas and electricity always fluctuating. In this workshop, case studies will be presented of successful projects showing excellent economic results.

**WPO-01-1 Advanced energy management system applications for better control room decision making**

This course will take a look at new and advanced energy management functionality for making more informed decisions in the control room. The course will look at new energy-management tools such as Advanced Alarming Systems, Topology Error Identification and PMU Enhanced-State Estimators.

**WPO-17-1 Grid systems efficiency solutions: New applications for FACTS, HVDC and cables**

The recent market strides to integrate wind and other renewables into the power grid present many complications. High Voltage Direct Current (HVDC) Classic and HVDC Light solutions are strong additions and reinforcements to the power grid that are becoming more necessary with today's change in generation patterns and power flow. Advances in Voltage Source Converter (VSC) technology allow DC transmission both underground and overhead exchanging reactive and active power. This class will discuss these new technologies and how they will continue to advance the industry.

**SESSION 16: 3:00 p.m. – 4:00 p.m.****CCS-52-1 POLIDESA - Automatizando una Planta de Poliestireno con el Sistema Freelance 800F**

Grupo IDESA es una empresa petroquímica con más de 50 años de experiencia reconocida internacionalmente. Poliestireno y Derivados cuenta con una capacidad instalada de 50,000 toneladas anuales de poliestireno cristal (GPPS), impacto (HIPS) y expansible (EPS). En Mayo de 2008 se concluyó exitosamente la puesta en marcha de las líneas de reacción 130 y 140 con un proyecto de automatización y control basado en el Sistema de Control Freelance 800F de ABB e instrumentos de campo con tecnología Foundation Fieldbus. Los resultados: aumento de producción, mejor calidad de producto, mejoras operativas y una mejor programación del mantenimiento.

**TCS-14-2 (NOTE: 2 hour session)****AC 800M and S800 I/O installation and configuration considerations**

AC 800M controllers and S800 I/O from ABB are broadly used in numerous industries all over the world. Their scalability makes them the perfect choices in PLC, hybrid and DCS applications. This presentation will bring up key considerations with regard to how to install and configure these devices. We'll also discuss controller performance and application execution.

**TLD-05-1 Proper wiring and grounding of power and control cables with variable speed drives**

This session offers an in-depth look at cables, routing, grounding and installation techniques to help improve noise immunity.

**TPG-02-1 Vibration monitoring basics**

In this session, participants will learn about the basics of vibration measurement and analysis. Topics will include vibration basics, sensor types, sensor selection and condition monitoring applications. Our hardware and software products for condition monitoring will be introduced along with typical condition monitoring installations, target applications, case studies, and features and benefits.

**TPO-05-1 Cost/benefit of maintenance vs upgrade vs replacement of switchgear at industrial plants**

With aging infrastructure and attrition of the supporting work force, many companies are forced to evaluate options and make decisions on how to support their aging equipment. This session will outline a structure for the evaluation of the cost and benefits of the options that are available, ranging from ongoing maintenance, full factory refurbishments, roll in replacement breaker options and various safety upgrades. The course will look at various costs based upon the options available and the life extension objectives of the owner to help establish a decision making process.

**TPO-10-2 (NOTE: 2 hour session)****GIS substation solutions to add power capacity in space-constrained locations**

Space constraints and the need to increase power capacity are a conflict that gas-insulated switchgear (GIS) can solve. It has a footprint a fraction the size of air-insulated substations, and it offers significant additional benefits of high reliability, reduced maintenance and protection from environment contamination. In this session, we will outline the basics of medium- and high- voltage gas-insulated switchgear and how it is applied, as well as several case studies demonstrating how utility and industrial users benefited from its application.

**TPO-17-1 Introduction to surge arrester sizing and applications**

This session will serve to describe surge arresters and their applications. Continuous operating voltage, temporary overvoltage and insulation coordination will be described in order to assist in the understanding of how arresters are selected and sized. Various sources of disturbances can create high overvoltage conditions which can result in damage to expensive equipment or lead to insulator flashovers. Surge arresters are selected and applied to protect against all types of overvoltage conditions.

**WCS-07-1 Emerging technologies and the impact on automation systems**

New technologies are being released constantly. New ways of communicating and collaborating become more popular and widespread every day. New graduates have different experiences and expectations regarding technology and communications. When you think about cloud computing, RFID, social networking, next generation Microsoft software, nano-technology, wireless, and next generation fieldbuses and standards, you might wonder how all of these things can and should be applied to automation systems. Attend this workshop to hear thoughts and predictions from the automation technology experts.

**WCS-32-1 FOUNDATION Fieldbus enhancements in System 800xA**

With the new feature release of Device Management FOUNDATION Fieldbus (FF) for System 800xA a new improved engineering workflow is supported by means of 800xA Bulk Data Manager (BDM) support, intelligent copying mechanisms and easier device exchange support. Come to this workshop and learn how the new FF enhancements will reduce the FF engineering complexity leading to high efficiency in engineering and commissioning.

**WPO-03-1 Benchmarking your utility's operations using a Smart Grid Maturity Model**

Smart Grid is an integrated utility energy delivery infrastructure which connects equipment, systems, customers and employees. It enables 'on-demand' access and control using current and event driven information on customers, assets and the utility network systems. The Smart Grid Maturity Model is an assessment tool to assist utilities in determining the desired future state of their operations. It is used to evaluate current levels of capabilities across all the facets of a utility business. This course covers the application of the Smart Grid Maturity Model and its benefit to utilities.

**WPO-23-1 Making the switch: Switch solutions for wind applications**

This class will discuss medium voltage products focused on switching options available for the unique requirements of wind applications. We will go through products like SF6 insulated switchgear and switches, and discuss the benefits they bring, such as a slim design for installation at the base of the tower base. Wind farms applications of collector circuit's vacuum breakers, SF6 substation switchgear, relays and Instrument transformers will be explored.

**SESSION 17: 4:30 p.m. – 5:30 p.m.****CCS-53-1 Holcim Apasco: Soluciones Analíticas CEMs**

Holcim Apasco, filial del grupo Suizo Holcim, empresa líder de clase mundial dedicada a la producción y comercialización de cemento, se han preocupado por el desarrollo sustentable de sus operaciones, especialmente en cuestiones ambientales, como su compromiso para disminuir sus emisiones de gases contaminantes. Holcim Apasco ha seleccionado el analizador por principio FTIR, de avanzada tecnología, confiabilidad y disponibilidad para el monitoreo y control de sus emisiones en México. Se exponen las experiencias y beneficios obtenidos con el analizador, desde su instalación y la relación generada entre Holcim y ABB para proporcionar el adecuado soporte a estos equipos.

**CLD-02-1 The truth about cable lead-lengths: From your drive to your motor**

This session looks into the different terms, and how motors and drives are affected in long lead-length installations.

**PCS-02-1 Ask the experts: Panel discussion of lifecycle and evolution**

This is an open forum discussion designed to answer any questions that attendees may have regarding the lifecycle management of ABB control systems. Discussion may include ABB's lifecycle programs, such as Automation Sentinel and OCS functionality, as well as implementation considerations. Experienced ABB personnel will be present to address participant comments and questions.

**TPG-01-1 Reliable profitability for power**

This presentation will focus on how the power generation, transmission and distribution industry can reduce cost per megawatt and increase system reliability. Industry specific examples of successes and challenges that can arise will be addressed focusing on how to capture departing knowledge, create a sustainable solid reliability culture, simulate and utilize existing data to make solid business decisions and ensure a quick return on investment. Attendees can expect to gain a basic understanding of how to reengineer work processes, quantify gains using effective metrics, uses of reliability modeling, change management tools and the change process.

**TPO-31-1 An introduction to power factor**

This session will introduce power factor and how the correction of power factor can provide a savings opportunity by becoming more efficient. Real power and reactive power will be further discussed to provide an understanding of power factor. Some facilities tend to have a lagging power factor, where the current lags the voltage. Capacitors can often be used to help correct the power factor.

**WCS-10-1 FDT: The powerful choice for device integration**

The FDT Group consists of 70 leading global users and providers of process and factory automation. The major purpose of this group is to provide an open, non proprietary interface for the integration of field devices with engineering, automation, and asset management systems. Come hear an update/overview of this industry wide, collaborative effort. Participants will gain an understanding of the complementary nature of FDT technology and Electronic Device Descriptor Language (EDDL). Results from end user collaborations and automation projects worldwide will be shared as well as an update on collaborative Field Device Integration (FDI) efforts.

**WPO-12-1 Don't let electrical surges scorch your business**

Surge voltage causes over \$2 billion in damage annually in the United States, including damage to buildings, electrical distribution, telephone and computer installations. Downtime for businesses can impact operational revenues and destroy customer satisfaction. Surge protection is essential to avoid business and equipment losses, but how can you be sure that you have the right surge protection? Why do you need it? How do you size it? What does ABB have to offer? Why wait? Let ABB show you the simple solution to world class protection.

**WPO-21-1 Integrating distribution and work management systems for better resource utilization**

This course reviews the various operational workflows that span both the Distribution Management System (DMS) and the Work Management System (WMS), including planned outage, unplanned outage and storm restoration. The integration points between the two systems are described from the basic integration for work order creation to the advanced integration for tracking work, equipment and reliability information. Finally, the benefits of integration between DMS and WMS will be discussed.

**WPO-25-1 Protection and control low voltage control solutions**

This class will provide an overview of low voltage control and relay products and how ABB can package these products for renewable energy applications. Participants will learn about the ratings of the many components that are involved, and how these ratings apply to these applications.

**WRO-02-1 Human and robotic interaction: SafeMove**

Robot safety has progressed to unprecedented levels with ABB's SafeMove package. This advanced product offering allows features to allow safe human intervention with the robot and three dimensional programmable containment of robot motion, creating lean robotic cell configurations.