ABB your partner in safe, reliable and efficient operations for today and tomorrow

ABB@Offshore Europe

Best practice news and views for engineers visiting Offshore Europe 2013

Safety-Reliability-Efficiency
Dear Colleague,

On behalf of ABB, I would like to welcome you to Offshore Europe 2013. For ABB this show provides the perfect platform to share with you the depth and breadth of the products, systems and services that we bring to the oil and gas industry.

Across our exhibition stand, and in this magazine, we address many of the everyday challenges that the oil and gas industry faces, such as:

- Increasing public pressure and scrutiny on environmental and safety performance
- Stringent regulatory standards
- Ageing assets
- Loss of skills and competency
- Competitive pressures to increase production while minimising production costs
- Pressure to speed up projects – reduce time to first oil
- Deeper, tougher physical environments for new reserves
- Changing use of assets

Underpinning these challenges is the need for safety, reliability and efficiency in everything we do. Demonstrations and examples of what this actually means to the oil and gas industry can be seen on our stand.

For many years ABB has been involved in some of the most significant projects such as Nexen’s Buzzard, one of the largest oil producing assets in the North Sea; and globally some of the biggest projects with the supply of integrated automation, safety and telecommunications systems for a new coal seam gas project in Queensland, Australia; and the main automation contract award for Sadara Chemical Company, Saudi Arabia.

ABB is a truly global organisation focussed on key business drivers such as health, safety, security, company integrity and environmental issues. This focus helps reinforce our partnerships with customers, allowing us to build lasting, trusting relationships, in which we can overcome some of the toughest challenges the world may present.

For instance, we understand our customer’s need to balance the often conflicting pressures of maximising production and capital productivity, with increasing efficiency and extending asset life, all of course whilst maintaining the prerequisite of ensuring safety and asset integrity.

Our approach to projects reduces the total installed cost and reduces project and operational risk. We improve safety, reliability and efficiency during the operations phase. We help maintain production rates and prepare for decommissioning during the end of production phase of an asset’s life.

We also know the difficulties presented by limited resources, increased scrutiny and ever decreasing timescales. This is why ABB continues to invest in developing innovative solutions to industry challenges. We provide solutions for electric power, automation, telecommunications, process safety and integrity services.

With some 145,000 employees in over 100 countries, our people are the champions that drive everything we do. You can meet some of these champions at Offshore Europe. We are providing a series of technical talks at which you can listen to world leading experts debating hot topics such as cyber security, alarm management and functional safety. The team are available for one-on-one discussions too, so please feel free to join us at any time throughout the event.

I hope that a visit to our stand at this year’s show will demonstrate what our safety, reliability and efficiency themes can do for you.
Stand highlights

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Augmented Reality - Layar
This magazine offers you great digital experiences using the Layar App.

Social Media
Follow us on Twitter to keep up to date with all that’s happening at Offshore Europe 2013.

@ABBOilandGasUK
#abboffshoreeurope

Alternatively, download a QR reader and simply scan the QR codes to see the video or animation. The choice is yours!

Use this QR code to scan and download the Layar App immediately.
Stand highlights

Enter ABB’s Power and Automation Arena and learn from seasoned process automation experts how a dynamic and collaborative environment can solve today’s real-world oil and gas industry issues.

Energy harvesting

Energy harvesting technology draws power from a steam or process pipe, with the latent heat being used to provide the power needed for operation. When used with a WirelessHART enabled ABB temperature transmitter, it allows remote temperature measurements without the need for a power supply to the transmitter, eliminating the need for any cabling to the instrument.

Meter² di dual chamber orifice fitting with double isolation

The new meter enables safe and quick inspection and changing of orifice plates in conformance with strict oil and gas guidelines. Its patented dual isolation system allows plate exchanges without stopping the flow, eliminating the need for bypass valves, pipework or redundant metering streams.

Compact, CoriolisMaster meter

The latest generation of ABB’s CoriolisMaster meter for measurement of flow (mass and volume, with accuracies to 0.1 percent), density, concentration and temperature. The compact double tube design has no moving parts and requires zero pipe lengths upstream or downstream, saving more than 40 percent in length and meter volume and minimising maintenance and installation space.

D3 collaboration board

This new concept in collaboration technology lets you see real-time process output data or current documentation from the P&ID viewer; whether you are an operations engineer on a platform, an optimisation lead onshore or a manager in a boardroom, the data you see is the same. Data can be sourced from ABB’s System 800xA and from third-party sources such as accounting and inventory software like SAP.

Technical tasters

Throughout the show, listen to our 20 minute technical tasters, presented by ABB experts. After each presentation, the speakers - and other experts from all areas of our business - will be on hand to answer any questions. For more information about our technical tasters and to find out about the speakers, please check out the pages within this magazine.
Stand highlights

• Alarm management regulation and standards

Regulators and standards bodies are increasing their focus on alarm management. Seveso III requires effective alarm management to be in place. Early next year IEC 62682 on alarm management will be published and edition 3 of the alarm system guide EEMUA 191 is about to be launched. Learn more about the standards and legislation and most importantly their implications.

• Protection and control IEDs

The Relion 620 IEDs (intelligent electronic devices) perform protection and control for feeders, motors and transformers. The devices operate to the IEC 61850 standard for design of automation equipment and are compatible with Modbus and other protocols. The casings have a patented plug-in design to speed up installation, testing and commissioning, allowing controllers to be installed and wired before delivery of the plug-in units.

• All-compatible variable-speed drive, ACS880

ABB’s newest low voltage AC drive controls virtually any type of AC motor and interfaces across all major fieldbus protocols. The drive features an intuitive control display that shows bar charts, histograms and trend graphs. Integrated safety functions, safe torque-off (STO), reduces the need for external safety components. Built-in energy calculators show used and saved kWh and MWh, CO₂ reductions and money saved.

• ServicePort

Think of ServicePort as the service equivalent of a smart phone: ServicePort is the platform delivering ‘apps,’ which are packages of service tools customers use to improve performance. Because the channels are built on knowledge distilled into automated tools, it’s as if the ServicePort ‘channels’ ABB experts into customers sites, easily, quickly and cost-effectively.

• Automation Arena

The Automation Arena is an interactive experience that takes you through a story of a typical offshore asset, exploring how people and systems react to abnormal situations such as trips and alarms. The experience will offer an insight into how to improve safety and asset reliability through collaboration, operator effectiveness, world class technology and leadership.
Safe and effective alarm management

Alarm management is of increased importance to regulators and standards bodies – where is it on your agenda?

With the publication of Seveso III, the EU Commission has enacted, for the first time, rules and principles for effective alarm management. This matches the US Department of Transport’s focus on alarm management as a key topic for pipeline control room management. The issue of a full IEC standard (IEC 62682), early next year, will only increase the spotlight on the role of alarm systems as a key layer of protection to assure safe and effective asset operations.

However, while regulators, and indeed the public at large, expect to see the control room operator provided with an effective decision making and support tool, the reality of many of today’s control rooms is an alarm system which is usually ignored in upset conditions. In extreme cases the alarm system is judged to be a noisy distraction which increases the cognitive load on the operator and impairs his ability to form an accurate mental model of the state of the process in order to take appropriate corrective action.

An effective alarm management system brings improved safety and environmental protection, but also better economic performance, as operators focus on optimising the process operations.

Effective alarm systems require good management over the total lifecycle of the system and are best achieved when the capability of the technology is focused on the needs, requirements and capability of the control room operator. The new IEC standard will feature a lifecycle model for effective management of the alarm system from cradle to grave – starting with defining an appropriate alarm philosophy which documents the objectives of the new (or existing) alarm system and the processes to meet these objectives. The lifecycle covers topics such as risk assessments, technology selections, assessing performance, design, implementation and maintenance.

With over 30 years experience, ABB has over 5,000 safety instrumented systems installed around the world.

Answers to these questions can be found on Stand 3D 160
– What are the key regulations that I need to implement?
– How do you assess and minimise the chances for human error?
– What are the implications of IEC 62862 to the operation of your asset?
– What is the most efficient way to integrate a HAZOP and LOPA study?
– How do you assure the safety of a new design?
### TechTalks

#### Effective trips and alarms across the safety management lifecycle

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| **Wednesday 4th September, 10:00 – 10:20** | Joan Evans  
Principal Safety Consultant  
joan.evans@gb.abb.com |
| **Thursday 5th September, 14:00 – 14:20** | Joan Evans has many years’ experience in manufacturing industry covering project management, line management, quality management and consultancy positions encompassing the oil and gas, chemicals, petrochemicals and metals sectors. |

Effective alarm systems and emergency shutdown systems provide demonstrable risk reduction and are key layers of protection in preventing major incidents. An integrated approach, with both working together as part of a comprehensive barrier management system, also provides significant human factors and financial benefits. While an alarm system is unique in that it includes a ‘human in the loop’, both alarm and trip systems share a number of common features; they have well developed international standards and guidance across the whole of their lifecycles and benefit from a multi-discipline team based approach to specification, design, operation and maintenance.  

This talk will outline the key requirements for successful management of trip and alarm systems and outline some of the challenges facing owner/operators in meeting the expectations of regulators and other public bodies as the spotlight on this topic increases.

#### Speaker

- **Joan Evans**  
  Principal Safety Consultant  
  joan.evans@gb.abb.com

#### Safety barriers – where to look for holes

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| **Wednesday 4th September, 11:00 – 11:20** | Graeme Ellis  
Principal Safety Consultant  
graeme.ellis@gb.abb.com |
| **Thursday 5th September, 16:00 – 16:20** | Graeme Ellis specialises in all aspects of process safety management including risk assessments for new processes and existing facilities. |

James Reason’s Swiss cheese model demonstrates the need to maintain risk control systems at all times to avoid major accidents. The model explains that incidents only happen when a number of barriers / protective systems fail at the same time - i.e. the holes in these barriers coincide. The challenge for operating facilities is to proactively find these ‘holes’ and make improvements before they are challenged and found to be inadequate. This talk will describe effective techniques to find ‘holes’ in barriers using the knowledge of experienced operations staff and share common industry vulnerabilities based on ABB experience from leading thousands of process safety studies.
What reliability means for you

Reliability has always been key to production performance but seldom appears a priority for management.

We all want reliable equipment and processes and know that this leads to more production – which is a good thing for us all, right? However, when it comes to deciding who is responsible for reliability and who is measured by reliability performance, things become a bit less certain. We run the risk of ‘everyone being responsible and no one taking responsibility’.

Another risk is the ‘methodology as a silver bullet’. RCM, PdM, RCA, FMECA and Six Sigma are all useful tools, but won’t solve reliability on their own – that takes engagement of the entire workforce and relentless focus.

So what role does every work group have to play and what does reliability mean to them?

Maintenance team
World class maintenance will not deliver world class reliability – not on its own. World class maintenance practices are needed but maintenance issues account for only a small proportion of reliability losses. What maintenance teams desire is well-designed, reliable equipment that is operated as intended and handed over just when needed for maintenance.

Operations team
Operators dream of equipment that just runs and runs – with no design limits, no problems or breakdowns and no downtime for preventive maintenance. Everyone wants a fast response when there is a problem and this is where remote support can help. Operators have a key role in understanding how equipment should be operating and be cared for and in identifying when things are not as they should be.

Management team
The management team dreams of barrels per day and reducing maintenance costs. Unfortunately they are the ones that have to balance the conflicting needs (and costs). Getting the balance right must involve the maintenance and production teams, taking a holistic view.

North Sea oil and gas platforms spend about 146 days idle every year. In 2012 production efficiency of these platforms was 60 percent, compared to 80 percent in 2008. Platforms are partly standing idle for longer due to more maintenance being carried out as they age but also because of a greater focus on safety.

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So what role does every work group have to play and what does reliability mean to them?

Answers to these questions can be found on Stand 3D 160
– Is it ever appropriate to operate equipment until it breaks down?
– What is the latest technology and best practice in condition monitoring?
– What are the benefits of applying condition monitoring to fixed equipment?
– Who is responsible for reliability?
– How can remote monitoring help the reliability of my system?
– How do I measure the reliable operating life of my equipment?
Many offshore platforms and vessels are operating well beyond their initial design life and are now projected to continue operating for many years to come. The challenge of understanding the current condition of these assets and assuring on-going safe and reliable operations is considerable. This talk outlines the challenges of operating beyond design life and outlines good practices to sustain continued operations. These practices cover the assets, the people and the systems to be used as well as understanding future investment needs. The particular issues of extending the life of obsolete equipment will be used to illustrate some of the key points of the talk.

**Speaker**
Andy Hollins  
Principal Integrity Consultant  
andy.hollins@gb.abb.com

Andy Hollins joined ICI in 1985 where he held a series of posts in process plant operation and maintenance, engineering department and research & development. He later transferred to Eutech, which was acquired by ABB in 2001.

**Speaker**
Stuart Melling  
Sales Manager - Marine & Crane  
stuart.melling@gb.abb.com

Stuart Melling is a Sales Manager supporting clients in the marine and oil industries. Stuart’s focus is on working with clients to support installed electrical and electronic equipment through the lifecycle of their assets.

Equipment and system reliability has long been understood as a key element of safe and profitable offshore operation. Achieving high levels of reliability becomes more difficult as assets age, operations change and experienced staff retire. The talk will outline the challenges of reliable operations and present a common framework for improvement. The talk will use examples to illustrate best practices in maintenance and condition monitoring.

**Speaker**
Phil Lawson  
Principal Integrity Consultant  
phil.lawson@gb.abb.com

Philip Lawson is a Principal Consultant based in Aberdeen specialising in the field of integrity and in the safe and reliable operation of rotating equipment.

**Speaker**
Charles Bennett  
Head of Process Automation Services Sales UK  
charles.bennett@gb.abb.com

Charles Bennett has overall responsibility for the design & development of ABB’s strategic service partnerships including those within the UK offshore and marine industries.
Achieving flawless project execution

Investing in the right supplier and partner can reap enormous efficiencies resulting in timely project completion, earlier production start-up and quicker returns. But first you need to find the right partner.

Whether building a new platform or extending the life of an existing one, the risks involved in coordinating various suppliers, executing the project on time and to budget, handling multiple system testing standards and overcoming skills shortages, can be seriously high.

As such many operators are now partnering with a single vendor to help improve the efficiency of project execution. This approach sees one company, such as ABB, take control of integrating the entire EICT (electrical, instrumentation, control and telecoms). Not only is ABB able to supply products and systems throughout the EICT chain, it has the experience to manage the interface with other engineering suppliers. Such interface management identifies critical challenges early in the project thereby avoiding any detrimental impact on project costs or the schedule.

However, there is much more to being an EICT vendor than product and system integration. The role extends to project management from front end engineering & design (FEED) studies through to the selection, manufacture, installation, commissioning and after-sales support. For instance, partnering with an EICT vendor early in a project increases the chances of using existing solutions that have been tried and tested on past projects. This migration of knowledge reduces engineering time and cost for purchaser, vendor and end-user.

Yet the idea of handing over everything to a single vendor, for some, can appear a high risk strategy in itself. But the benefits far outweigh the risks. Having one vendor project manage and engineer an integrated system instead of multiple standalone packages reduces expenditure on pre-tender engineering, vendor selection and procurement. This reduces expediting and inspection costs as only one contract needs to be managed, there are fewer progress review meetings, lower operational staff training costs covering the system instead of individual products and reduced design options giving simpler, faster designs.

An EICT vendor operates as an integral part of the client’s design team, thereby enabling faster communication, rapid resolution of queries and a closer working relationship. All of which reduces the interface role for the client, project management contractor (PMC) and the engineering procurement construction contractor (EPC) while providing clear contractor accountabilities, saving cost and schedule.

Sadly many major projects are over-running on delivery and costs. In many cases the use of an EICT vendor could help overcome both by addressing cost, schedule and resource shortages. When you require a complete managed approach to reduce risks in the provision of the automation/electrical solutions for your project - and throughout the complete life cycle of the plant, it pays to find the right partner.

“...The ability to provide a total solution should be a primary factor for any user choosing a system partner.”
Source: ARC

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Answers to these questions can be found on stand 3D 160

– How can upgrades be made more efficient?
– How to find and resolve skills shortages to maintain efficiency?
– What cost and safety challenges are faced when reducing operating teams on assets?
– How to be more efficient in cost of and rate of production?
– How can projects be delivered more effectively?
TechTalks

Power from shore – providing reliable, efficient and secure power to oil and gas facilities

**Speaker**
Ramachandra Karamongikar  
Head of Electrical Systems, ABB  
ramachandra.karamongikar@gb.abb.com  

Ramachandra Karamongikar has some 18 years’ experience in the design-bid-build project business, with specific focus on project acquisition and project management within the electrical, instrumentation and automation industries.

**Speaker**
Tor-Eivind Moen  
Manager for the Product Solution Centres - Subsea Electrification and Power from Shore - ABB Oil and Gas  
tor-eivind.moen@no.abb.com  

Tor-Eivind is responsible for sales and strategic technology management for these market segments.

TechTalks

Innovation in control: remote diagnostics developments

**Speaker**
Kevin Starr  
Research & Development Manager, ABB  
kevin.starr@us.abb.com  

Kevin is currently responsible for the development and implementation of service solutions that result in the increased life cycle and utilisation of industrial automation systems.

Smart instrumentation and increased levels of automation have increased the amount of data available to operations staff, engineers and managers. When managed well the data can be very useful in optimising operations and planning future improvements to the safety, reliability or efficiency of an asset. When managed badly the data can be overwhelming and provide little value. The talk covers possible approaches and technologies to better data management that will drive better collaboration across an organisation and lead to improved production performance. Improved management, structuring and access to industrial data are related to the innovations we have all experienced through tablets and smartphones.
The future of automation

“There is no reason anyone would want a computer in their home.”
Ken Olson, President, Chairman and Founder of Digital Equipment Corporation, 1977

It’s fair to say Mr Olson got it slightly wrong. We need to be careful when attempting to make predictions where technology may take us. The best we can hope for is to listen to our clients, monitor the latest technology and try to look ahead to ensure we are positioned to best serve our markets.

However, there are some non-negotiable requirements which our customers would expect without discussion. These include reliability, real-time behaviour, predictability, safety, security and long system life time. The future systems will ensure these requirements are catered for even better than they are now through more robust systems and networks.

So just why is it important to think about the future? Whether we like it or not the next generation of automation engineers will be holding technology of some description. Our children have smartphones and iPads and they are used to navigating by swiping a screen.

Human factors and ergonomics

It is becoming more important within the control room environment to keep the users engaged and active. There’s a bigger sense of pride in a suitable environment and this reflects in results. These environments also act as a window on the business. As these systems evolve it is becoming possible to gain information from the status of the system without ever interrupting an operator. The environments are becoming ever more intelligent and can gauge the asset status and react accordingly.

High performance HMIs

Today we are able to see the environmental controls on the HMI using simplified graphics pointing to deviations, showing information not data and providing fast navigation in asset context and rapid alarm response navigation. We are starting to bring in FLIR (Forward Looking Infra Red) cameras. These are able to spot heat signatures from individuals on a plant as well as machinery hot spots.

Social media

We disregard, at our peril, social media as a mechanism to gain plant and process information and obtaining real-time help regardless of where you are in the world. This social media explosion is only set to increase and as the next generation of users come online then they will already be used to real-time and immediate communications and information transfer.

ABB is investigating using social media feeds to change the way users get access to asset information. Access to real-time global information will help with asset uptime as onsite skilled resource becomes scarce.

Data to desktop

On show at Offshore Europe is the new D3 Collaboration Board. It uses the latest in touch-screen technology to give access not only to automation systems but also electronic maintenance systems and the clients document systems. Everything can be accessed on this table simply and all zoom, scroll and access functions are identical to the smart phone.

Whether we are ready for it or not, the Generation Gamers are coming and those automation systems not able to evolve to take this group into account will not attract the right calibre of people to operate their plants of the future.

“Smart instrumentation and increased levels of automation have increased the amount of data available to operations staff, engineers and managers. When managed well the data can be very useful in optimising operations and planning future improvements to the safety, reliability or efficiency of an asset. When managed badly the data can be overwhelming and provide little value. The talk discusses ways to better data management that will drive collaboration across an organisation and lead to improved production performance to all.”

TechTalks

The future of automation

**ABB stand 3D 160**
Thursday 5th September, 12:30 – 12:50

**Speaker**

Ian Holden
UK Oil & Gas Technology Manager
ian.holden@gb.abb.com

Smart instrumentation and increased levels of automation have increased the amount of data available to operations staff, engineers and managers. When managed well the data can be very useful in optimising operations and planning future improvements to the safety, reliability or efficiency of an asset. When managed badly the data can be overwhelming and provide little value. The talk discusses ways to better data management that will drive collaboration across an organisation and lead to improved production performance to all.

Since joining ABB in 1997 Ian Holden has worked in the metals and minerals, nuclear and oil and gas sectors.

In his current role, he is responsible for promoting ABB’s latest technologies into UK projects and services. Ian works with customers and ABB product development, primarily in the integrated operations, telecoms and asset evolution areas.
It is impossible to achieve 100 percent security against cyber-attacks. Even when a system is arranged with the latest array of security measures, it may still be vulnerable through the spiralling number of connections to the networks of suppliers, contractors and partners.

Cyber security is no longer constrained to enterprise-wide IT systems such as computers, servers and other network devices. Industrial automation and control system (IACS) are also vulnerable as connections are made to remote monitoring and troubleshooting tools. Yet often the very different cyber threats faced by enterprise IT and control system IT get lumped together as the responsibility of the company wide enterprise IT systems department. This could not be further from the truth.

IACS networks have changed from their standalone isolated operations and now face cyber attack vulnerabilities. Even isolated IACS systems that have minimal network interactions with third party suppliers, manufacturers or partners still have to contend with attacks from portable computers, memory devices, unauthorised software installs or even deliberate attacks by insiders.

The impact of an attack on control systems IT could, therefore, have a more serious effect on organisations than an attack on enterprise IT systems.

With the company-wide enterprise systems, the key priority should a cyber-attack occur, is to protect data confidentiality, followed by integrity of the system and lastly the availability of information to authorised network users.

However, when applying this to a cyber-attack on an IACS network, the priorities are in fact very different, with a criticality focus on availability, closely followed by integrity and confidentiality of information coming in last.

The reason for the disconnect in response to a cyber-attack lies in the structure of enterprise IT and control systems IT functions. Often the enterprise IT department is assigned the responsibility for the entire organisations cyber security and have criticality priorities towards enterprise system IT resilience.

Control system IT departments are responsible for the safe and continuous running of the production process and often has no cyber security expertise due to the traditional isolated nature of such IACS networks. This makes the control system IT department extremely vulnerable to cyber-attacks, the control of which is covered by the enterprise IT department, who often do not understand the differences in IACS networks and their complexities and are unsure how best to support them.

There is a need for both functions to build bridges around the differences that exist and recognise that while IACS networks are vulnerable to cyber-attacks, they simply can’t employ all the security measures a corporate network would use.

**TechTalks**

**Cyber security – Protecting your critical oil and gas assets**

**Speaker**

**Ian Holden**
UK Oil & Gas Technology Manager
ian.holden@gb.abb.com

Ian Holden is responsible for promoting ABB’s latest technologies into UK projects and services.

**Speaker**

**Walter Sikora**
VP of Security Solutions
Co-founder Industrial Defender

Walt Sikora has more than 29 years of experience with security for SCADA, DCS and ICS systems. In his current role, he is responsible for Industrial Defender’s security and compliance solutions.
Service and Consulting
Reducing risk, optimising costs, improving production efficiency.

We provide technical consulting and engineering services to improve performance in the areas of compliance, operations and engineering to customers in the global offshore industry. We work in partnership with customers, transferring knowledge to allow the benefits we deliver to be sustained and increased. We identify and implement pragmatic solutions based on technical excellence and industry expertise.

Key brochures available
- Effective Alarm Management
- Integrity Management for Upstream Oil & Gas Facilities
- ABB Advanced Services - ABB Service Port
- Marine Service Solutions Core Services - Health Care Presentation
- ABB Process Automation Lifecycle Services

Videos to watch
- Automation Sentinel – lifecycle management software
- Guidelines for migrating to a new control system
- Energy efficiency for process industries
- Strategic service partnership introduction

Instrumentation
Actuate, measure, record and control.

As a leading supplier to the oil and gas industry, ABB provides the measurement technology needed to operate downstream refining and petrochemical plants safely, productively and profitably. With proven high accuracy and reliability, ABB’s measurement products combine high performance with the lowest cost of ownership, giving customers predictable and safe operation.

Key brochures available
- Coriolis X Series Interface
- Gas Flow Measurement
- Gas Well Production
- Measuring Gas Under High Static Pressure

Websites to watch
- ABB Measurement Products – Measurements
- ABB Temperature Measurement White Paper - Basics and Practice
- ABB Flow Measurement White Paper - Understanding Coriolis Mass Flowmeters
**Electrical systems**

Total integrated electrical solutions for oil and gas, petroleum and chemicals industries

ABB has launched an integrated electrical main execution centre to deliver electrical solutions for the complete project life cycle, from conception, FEED, design and engineering, project management, supply and site service. The centre is specifically oriented towards the oil and gas industries, including upstream (Offshore and onshore exploration, production and processing) and downstream (refining, petrochemical processing, and ancillary production such as power from cogeneration).

**Key brochures available**
- Optimized Cost of Ownership
- LV Motors for Hazardous Areas
- HV Flameproof induction Motors
- ABB Review - Integrated systems

**Websites to watch**
- Low voltage products and systems
- Arc Protection - Ultra Fast Earthing Switch “UFES”
- Future proof communications / standard / interoperability - “Relion and IEC61850”

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**Automation Systems**

Integrated control, safety, instrumentation and telecoms solutions.

As a proven performer in the oil and gas industry, ABB continues to expand its industrial solutions for the hydrocarbon supply chain, encompassing production, processing, transportation, storage and distribution.

**Key brochures available**
- Cyber Security Fingerprint - Frequently Asked Questions
- Functional Safety Management for End Users
- Comparison of the Extended Operator Workplace against Traditional Sight
- The Effective Operator
- Independent High Integrity Safety System

**Websites to watch**
- Safety
- Telecoms
- Offshore production portal
- Oil and Gas industry portal
SPE Offshore Europe 2013
Schedule of Technical Talks and Demonstrations

ABB your partner in safe, reliable and efficient operations for today and tomorrow. Pre-register at: www.abb.co.uk/offshore-europe or visit us on Stand 3D 160.

Tuesday 3rd September 2013

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<td>12:30 - 12:50</td>
<td>Cyber security - protecting your critical oil and gas assets</td>
</tr>
<tr>
<td>14:00 - 14:20</td>
<td>Extending safe &amp; reliable platform and vessel life; a case study</td>
</tr>
<tr>
<td>16:00 - 16:20</td>
<td>Making a step change in reliability; managing obsolescence</td>
</tr>
</tbody>
</table>

Technical demonstrations

10:30, 12:00 and 15:00: We will be demonstrating some of the latest solutions and services on stand to illustrate how people, systems and equipment collaborate effectively to achieve safe, reliable, efficient operations. Come along to our interactive demonstrations which will run alongside several new product launches.

Wednesday 4th September 2013

<table>
<thead>
<tr>
<th>Time</th>
<th>Technical Tasters</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 - 10:20</td>
<td>Effective trips and alarms - across the lifecycle</td>
</tr>
<tr>
<td>11:00 - 11:20</td>
<td>Safety barriers - where to look for holes</td>
</tr>
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<td>12:30 - 12:50</td>
<td>Cyber security - protecting your critical oil and gas assets</td>
</tr>
<tr>
<td>14:00 - 14:20</td>
<td>Power from shore - providing reliable, efficient and secure power to oil and gas facilities</td>
</tr>
<tr>
<td>16:00 - 16:20</td>
<td>Innovation in control; remote diagnostics developments</td>
</tr>
</tbody>
</table>

Technical demonstrations

10:30, 12:00 and 15:00: We will be demonstrating some of the latest solutions and services on stand to illustrate how people, systems and equipment collaborate effectively to achieve safe, reliable, efficient operations. Come along to our interactive demonstrations which will run alongside several new product launches.

Thursday 5th September 2013

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<thead>
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<th>Time</th>
<th>Technical Tasters</th>
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</thead>
<tbody>
<tr>
<td>10:00 - 10:20</td>
<td>Extending safe and reliable platform and vessel life; a case study</td>
</tr>
<tr>
<td>11:00 - 11:20</td>
<td>Making a step change in reliability; managing obsolescence</td>
</tr>
<tr>
<td>12:30 - 12:50</td>
<td>The future of automation</td>
</tr>
<tr>
<td>14:00 - 14:20</td>
<td>Effective trips and alarms - across the lifecycle</td>
</tr>
<tr>
<td>16:00 - 16:20</td>
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Technical demonstrations

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Friday 6th September 2013

<table>
<thead>
<tr>
<th>Time</th>
<th>Energise your future ® Offshore Europe ’13</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:45</td>
<td>Welcome presentation - Fleming Auditorium</td>
</tr>
<tr>
<td>11:00 onwards</td>
<td>Industry stand visits</td>
</tr>
<tr>
<td>12:25 - 13:15</td>
<td>Lunch, Crombie Suite</td>
</tr>
</tbody>
</table>

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