Process safety consultancy

Reliability for ageing assets
Effective management of breakdowns
Supporting the OPA UK sites with process safety consultancy
ABB has been providing process safety improvements
Site regeneration advisory services
INEOS O&P UK awards contract to ABB for site regeneration advisory services
Raising the bar on PSM
ABB has been contracted to review seventeen operating units for Essar Oil UK
Welcome to the summer edition of the ABB Solutions newsletter.

In this edition we discuss reliability for ageing assets and consider the effective management of breakdown strategies, we also have great case studies from the Oil and Pipeline Agency (OPA), INVISTA, INEOS and ESSAR covering issues such as process safety, process engineering software and site regeneration.

Recognising the continuing challenges facing industry today to reduce costs and improve production efficiency, ABB Consulting’s response in supporting our customers is to proactively consider ways to eliminate low-value activities and improve safety. Earlier this year we launched our ‘100 day cost reduction challenge’. Initially focusing on the upstream oil and gas sector the new scheme is designed to reduce low-value activities by up to 40% by identifying hidden opportunities and acting to realise the benefits. We will be sharing some of the pragmatic technical judgements and how they have been implemented within the 100 days to achieve cost savings in our next newsletter publication.

As always we have selected a round-up of recent ABB conferences and seminars, and key industry events. Extra to the ABB program this year are a number of Inspection workshops with great feedback from the delegates so far on the shared learning.

We hope you enjoy the newsletter and if you have any feedback or comments we would like to hear from you.

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Reliability for ageing assets
Effective management of breakdowns

A typical approach for maintenance policies and practices is for a proportion of maintenance activities to be based on ‘run to failure’, with the proportion depending on the type of manufacturing operation, availability requirements and economics.

But when the words ‘run to failure’ are replaced with ‘breakdown maintenance’ or even ‘fire-fighting’, then this essential feature of any well thought out maintenance policy suddenly becomes very unpopular and something to be disguised from auditors or consultants.

There is nothing wrong with breakdown or fire-fighting maintenance, providing that the circumstances have been properly evaluated in terms of risk, impact on OEE and maintenance costs. If it is the optimum strategy for that piece of equipment, it is the right thing to do, whatever consultants or reliability publications suggest.

If you are doing more fire-fighting maintenance than you think is the optimum and wish to move or try other strategies, such as ‘maintenance on condition’, ‘time based’ overhauls or proactive improvement initiatives, the first thing that you need to do is get good at fire-fighting maintenance through things such as contingency planning, spares availability and technician training.

You’ll generally always have to do a proportion of ‘fire-fighting’ maintenance, so you might as well be good at it, but if you don’t get good at it and reduce the impact it has on people and resources, you’ll never have the time to investigate and establish the other options for maintenance strategy. Most other strategies, apart from the proactive things that eliminate the root causes of failure, such as quality build plans or people competencies, only give you advance warning that a failure will take place, you still have to fix it! Fixing it is only a relaxed form of fire-fighting!

As assets age many operators find that the number of ‘one off’ equipment failures increase.

The failures are often where the root cause analysis does not suggest an elimination solution, other than equipment replacement.

A robust asset life planning strategy can make a major impact in proactively identifying equipment failures of this nature, but, since the assessments are usually based on risk, mitigating the impact of such failures by managing breakdowns effectively, including provision of spares or contingency planning, is a key feature of any effective ageing asset management strategy.

Martin Brown
Principal consultant with 30 years experience in maintenance, reliability and turnaround improvement and integrity management.

For more information on reliability for ageing assets please contact:
Martin Brown on +44 (0)7713 684440 or Email: martin.brown@gb.abb.com
Supporting the OPA UK sites with process safety consultancy

The Oil and Pipeline Agency (OPA) owns several ‘top tier’ COMAH sites for the storage and transfer of petroleum products, primarily aviation fuel.

Over the last 24 months, ABB Consulting has been providing process safety support to OPA to assist the organisation to achieve step change improvements in safety and ongoing compliance with the UK COMAH regulations.

ABB was selected to prepare a new safety report for a site being brought back into operation, whilst also supporting the revision of safety reports for several other sites in compliance with the requirements of Competent Authority (CA) published guidance and criteria contained in the Safety Report Assessment Manual (SRAM). ABB was awarded this work based on a strong reputation for process safety and the potential to bring a fresh approach from knowledge gained in other sectors of the process industry.

The format developed for the safety report has become the standard for OPA sites, and in addition to the preparation and updating of safety reports, a number of associated risk assessments on OPA sites have been carried out. Overfilling of storage tanks during import is a key hazard and ABB undertook Safety Integrity Level (SIL) assessments on the overfill protection systems. Losses from tank rundown lines can be controlled by early detection and closure of tank outlet valves, and ABB carried out a Remotely Operated Shut-off Valve (ROSOV) assessment in compliance with HSE guidance.
An OPA ‘top tier’ COMAH site.

Feature articles

© OPA UK

The Oil and Pipelines Agency (OPA) is a statutory corporation of the Ministry of Defence in the United Kingdom. Its statutory role is to be responsible for the safe, efficient, economic and effective management of the Government Pipelines and Storage System (GPSS).

For more information on process safety consultancy please contact: Andy Stoker on +44 1925 741264 or Email: andy.stoker@gb.abb.com

“OPA is working to challenging schedules; ABB integrates closely with our teams to ensure we meet our deadlines and consistently produce the technical quality required by the Competent Authority.”

Chief Executive Officer, OPA UK
INVISTA Performance Technologies (IPT), is a long-term user of ABB’s suite of process engineering tools, the Process Engineer’s Library, known as PEL.

The Windows® based software package has been a key tool used by IPT in its design process for successive generations of their polyester technologies.

Earlier this year IPT introduced its latest technology offering that delivers significant variable cost improvements compared to plants licensed just a few years ago. PEL was used extensively by the process engineering team in the development of the new technology.

More generally the PEL software is also used in the licensing phase of an IPT project. An example of this is the sizing of relief device pipework on multi-phase relief streams using the Visual PIPER package.

A new development in the PEL software range includes an Excel add-in for validated chemical engineering calculations, called CAPRE. IPT is currently evaluating CAPRE as a supplement to their in-house relief design methods.
Site regeneration advisory services

INEOS Olefins & Polymers (O&P) UK awards contract to ABB Consulting for site regeneration advisory services in support of its Grangemouth site.

As INEOS reviews its asset portfolio and prepares to regenerate their Grangemouth site, ABB has been awarded a contract to provide the O&P UK business with a site regeneration advisory service.

Initially acting as project manager ABB will be supporting the site management team with Construct, Design and Management (CDM) services. This work will include a detailed site survey, feasibility studies, preparation of preconstruction packs for the identified assets and updating the asbestos and hazardous materials survey.

The ABB team will also be supporting the INEOS’ procurement team on the contract scope, prequalification and tender processes.

“ABB has a demonstrative track record of excellence in health and safety that closely aligns with our own high standards and they have extensive experience of working in the UK Petrochemical industry. We were extremely impressed with ABB’s commitment to our proposals and a shared vision of the future of our business and we look forward to working in partnership with ABB to bring about the transformational change to our assets at Grangemouth.”

Stephen Hendry, Senior Procurement Specialist, INEOS

“We are delighted to be involved in the regeneration of the Grangemouth site. We look forward to supporting INEOS in moving towards a strong future in a very safe and cost effective way.”

Steve Andrew, Asset Closure and Regeneration Group Manager, ABB Consulting

INEOS O&P are Europe’s largest olefin producer with four of Europe’s most highly integrated and differentiated crackers, based in France, Germany, Norway and the UK. INEOS O&P produce 5.5 million tonnes per annum of olefins and aromatics, and 3 million tonnes of polyolefins. INEOS O&P produce polymers which are specifically tailored to provide high value solutions to customers in our chosen market sectors.

For more information on regeneration advisory services please contact: Steve Andrew on +44 (0)1642 833787 or Email: steve.andrew@gb.abb.com
Raising the bar on PSM

Keen to appraise alternative methods of improving Process Safety Management (PSM), Essar Oil UK wanted to be able to incorporate learning and best practice from other industry sectors to enhance their commitment to further raising the bar in their safety performance at the Stanlow Site in the UK.

ABB Consulting has been contracted to manage the three year program to review seventeen operating units across the site, undertaking both HAZOP and Process Hazard Reviews (PHR).

ABB's knowledge base will allow Essar Oil UK to access a much wider view of PSM and the current best practice addressing similar risks. Realising the benefits to operational effectiveness, the aim is to reduce incidents, loss of containment and wastage whilst improving reliability and production uptime.

Encouraging effective participation within the organisation, Essar Oil UK and ABB have a ‘one team’ based approach to achieve the maximum benefit from the studies.

Involving people from all levels of Essar Oil UK’s business from the site leadership team to process operators, the team aims to create a step change in PSM awareness and understanding as the studies progress.

The high hazard production units within the complex will be reviewed during the three year program.

Essar Oil UK's Stanlow Refinery is the 2nd largest in the UK with a nameplate capacity of 296,000 barrels per day. The site was established in 1924 and was acquired by Essar Oil UK from Shell in 2011.

For more information on PSM please contact: Gerry Brennan on +44 (0)1925 741275 or Email: gerry.brennan@gb.abb.com
CIA annual awards
Newcastle

ABB sponsored the annual CIA awards in Newcastle. ABB presented the ‘Manufacturing and Resource Efficiency Award’ to LyondellBasell, who beat other shortlisted firms BASF PLC, Dow Chemical Company PLC, and Stepan UK.

Left: Steph McGovern, Peter Hunt, ABB and Steve Elliott, CIA, with award winner Laurent Hautier, LyondellBasell.

International Petroleum (IP) week
London

Dr Joanne Murray, ABB, with our exhibition stand at IP week.

ABB exhibited and were delighted to support the Energy Institute (EI) at International Petroleum (IP) week in London. There were approximately 500 delegates who worked through a series of presentations, discussion panels and workshops to discuss these important agendas.

YCF 10th anniversary dinner
Leeds

ABB received an award at the Yorkshire Chemical Focus (YCF) 10th anniversary dinner for support of the cluster organisation and being a founding member. Dr Joanne Murray and Claire Haycock, ABB, collected the award and were able to meet with several of our Yorkshire based clients including BASF, Dr Reddy’s, Esseco and Nufarm.

Claire Haycock and Dr Joanne Murray, ABB, with their award.

Hazards 25
Edinburgh

ABB attended Hazards 25 in Edinburgh. As conference partner, ABB promoted its commitment to developing process safety management practices and helping our customers to build a safer industry. ABB presentations spanned a number of topics from human factors, to LOPA, alarm management and the CDOIF guideline.

Peter Hunt, ABB, presenting the welcome speech at Hazards 25.

Oil and Gas UK safety awards
Aberdeen

The Oil and Gas UK safety awards took place in the Aberdeen and was attended by over 300 representatives from oil and gas companies. Paul Everard, ABB, presented the ABB sponsored ‘Safety Leadership Award’ to Vic Retalic, HSE & Security Manager, Premier Oil Plc.

Process Safety
Manchester

ABB attended the biennial IMTOF (International Methanol Technology Operators Forum) conference hosted by Johnson Matthey, held in London. Paul Jackson, ABB, presented a paper ‘Confidence in plant Integrity for tomorrows demands’ to over 100 delegates representing Methanol operators from across the world.

ABB’s Process Engineering Library (PEL) software is a highly effective solution for generating and managing process engineering data.

Benefits

− Allows engineers to be more efficient and productive. With fewer manual calculations to do, tasks are carried out more quickly
− Improves QA and standardises procedures, through everyone using the same set of data and calculations
− Human errors in calculations are reduced
− Improves production as bottlenecks can be identified quickly so a solution can be sought


30 day free, no obligation evaluation
See the benefits of PEL for yourself.

We offer a 30 day free trial of the PEL software. Simply download your evaluation copy at www.pelsoftware.com/installs

For more information, please contact:

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PEL Sales Manager
+44 (0)7720 342414
dermot.mcginnis@gb.abb.com

Continued support Loughborough University

Over the past few years, ABB has been providing support to the Loughborough University Mechanical Engineering (MEng) students on the HAZOP section of their design project. The students are typically divided into groups designing various projects. Each group provides a brief summary of their project and then talk the ABB representative through the HAZOP study they have done for their design project. The ABB representative then provides feedback on the HAZOP study completed and ways to improve the effectiveness of the HAZOP study for the design.

HAZOP studies training Singapore

ABB ran a 2 day ‘HAZOP studies’ training course, organized in-house by The Polyolefin Company, Singapore (TPC). TPC turned to the ABB Consulting Singapore team to provide the training. The event had 16 delegates with everyone commenting on the course positively.

Handling flammable liquids seminar Manchester

ABB sponsored the University of Cambridge, Department of Chemical Engineering & Biotechnology 3rd year undergraduate design project.

Undergraduate design project University of Cambridge

ABB sponsored the University of Cambridge, Department of Chemical Engineering & Biotechnology 3rd year undergraduate design project.

GPA annual conference Madrid

ABB sponsored the GPA annual conference which was held in Madrid. Kevin Walls, ABB, presented a paper entitled ‘Risk Based Inspection - an opportunity for improvement’ to an audience of over 100 delegates from 14 different countries.

Handing flammable liquids seminar Manchester

ABB attended the Energy Institute (EI) seminar in Manchester. Steve Sherwen, ABB, presented a paper entitled ‘Area classification code for installations handling flammable fluids (EI15)’ and was very well received, attending companies included Shell, Valero, Perenco, Air Products and Dana Petroleum.
## Conferences

Conferences are major industry forums focusing on key topical areas.

Please contact us if you would be interested in presenting at any of our 2015 conferences.

### Seminars

Seminars are focused on industry ‘hot topics’ and include inputs from external speakers.

### Forums

Lunchtime and evening forums provide an update on key industry topics and share best practice.

### Webinars

Webinars are focused on industry ‘hot topics’ and are accessed over the web.

Previous webinars can be viewed on our Youtube channel: ABBConsultingUK

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## Forthcoming events for 2015

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<td>Internet</td>
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<td>2nd - 3rd September</td>
<td>IEC 61508 / 61511 and SIL determination*</td>
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<td>8th - 9th September</td>
<td>Essentials of pressure systems*</td>
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<td>9th - 13th November</td>
<td>SIL determination and hazard assessment*</td>
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All of these events are organised and delivered by ABB Consulting.

For more information on:

Seminars, conferences, forums, webinars please contact - 
**Deborah Law**

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Training courses please contact - 
**Jackie Kendall**

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E-Mail: jackie.kendall@gb.abb.com

* IChemE accredited training course

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[Image of people at conferences]

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The ABB PEL team is now providing training on the use of our software products which is an important part of the service to its customers.

Recently the ABB PEL team has been looking at how we can use the Web to improve this further. Webinars have been a great way to reach customers around the world, providing flexible and interactive training which matches their requirements.

For a large healthcare company we used their internal communications system to introduce users on sites in the UK and Singapore to CAPRE, our Excel-based tool for process engineering and pressure relief calculations.

We also used ABB’s own system to deliver an international public webinar which allowed current and potential customers to log in and be part of a similar demonstration of CAPRE.

Currently we are organising a session to provide an overview and demonstration of the whole PEL suite of software to one overseas customer as part of a package which will also include visiting them to provide more traditional face-to-face training.

Using webinars in this way has been very successful, and our approach has improved as we have learnt from our experiences. For example, in order to make it easy for the audience to participate, it is helpful if the main presenter has an assistant who can monitor the presentation and spot when an audience member wishes to ask a question.

Training is much more than death-by-Powerpoint. Webinars allow us to demonstrate our software dynamically and interactively, responding immediately to requests to see particular features. We can set up sessions at short-notice and tailor them to the needs of an audience however large or small. They have become a valuable part of a trainer’s toolkit.

Contact and follow us

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