

Solutions



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Dr Glyn R Hughes,
Chief Executive,
Humber Chemical
Focus Ltd.

Generating better chemistry in the Humber

If the chemical industry in the Humber was a single 'plc' it would rank some where in the top 25 league table of global chemical enterprises. The Humber has plenty of diversity too. Petrochemicals, oleochemicals, pharma, pigments and paints are all present with also a strong down stream consumer-personal care presence.

Although always highlighting our large and successful chemical sector in the Humber we are increasingly spending time talking about our cousins in the scale energy and power sectors. Carbon is the common denominator in all of this of course. The Humber lands, moves and processes over 60+ million tonnes of it in the form of coal, oil and gas. It's even more if you include the carbon embedded in agricultural feedstocks for which the Humber is a major transport and storage hub.

With a location with such a 'old and new' carbon processing base coupled to major ports infrastructure it's perhaps no surprise that the Humber is on the map for receiving scale investments from the process & power sectors based on renewable and sustainable feedstocks. Readers may no doubt have read recently about some of the new scale plant build plans for example, at Immingham (Drax plc), Hull (Dong Group), Stallingborough (Vireol) and Saltend (Vivergo). The region is also scheduled to attract and host some of the EU's first scale demonstrator plant for carbon capture. The plans to build major wind energy farms just off the coast is also raising the Humber profile.

All in all, the Humber seems well wired into the future chemical, energy, process and lower carbon fuelled economy. ■

ABB's office based in the Humber is located at The Deep Business Centre.



Improving integrity

ABB joined representatives from Penspen and Noble Denton at an integrity management workshop focused on Centrica Storage Limited's (CSL) Rough assets, both onshore and offshore. The focus of the day was building a team approach to integrity management ensuring clear boundaries with appropriate roles and responsibilities.



The team produced a vision for integrity; *“To be a leading organisation in understanding and managing integrity related risk using an integrated team approach and robust cost effective strategies to ensure asset performance and life.”* A workshop exercise was led by Kevin Walls, ABB inspection group manager, *“we focussed on identifying potential gaps in the integrity management process and pulled on the team’s extensive knowledge and experience to prioritise these opportunities for improvement.”*

The outcome was a clear action plan for dealing with the key issues ensuring consistency across the disciplines and assets. A key theme for the day was ‘pinch with pride’ with the team sharing best practises from a wide range of sectors, disciplines and organisations. The day included a team building exercise and the opportunity to share each company’s service provision and vision.

“This was a fantastic opportunity, as the new integrity manager for CSL, to bring the whole CSL integrity team together. Teamwork amongst our key integrity management providers is essential in building the collaborative approach we need to ensure the integrity of Rough is maintained. A great day was had by all with open and honest discussions; everybody came and left with a real energy and enthusiasm for improvement.” - Steve McKenny, Centrica Storage.

The next integrity workshop will be held at ABB’s head office at Daresbury and will build upon the success of the first event.



The integrity workshop participants

Process Hazards Reviews

Warwick International Ltd, is the worlds leading producer of Tetra Acetyl Ethylene Diamine (TAED) which is a low temperature bleach activator and their state of the art manufacturing site is based at Mostyn in North Wales. ABB Engineering Services are now working with Warwick to further enhance their process safety performance.



Warwick International Ltd, Mostyn site

A comprehensive programme of Process Hazard Reviews (PHR) have been carried out and the resulting actions are being implemented. One of the significant benefits achieved by this team based approach is a clearer understanding of the key areas upon which the process safety improvement projects should focus.

This improved focus means that the proposed projects have been constantly reviewed resulting in a project definition and scope that are fully aligned to the business safety risks and objectives. Additionally, significant payback has been achieved by modifying the scope and implementation phases to reduce the impact on production by keeping the plants on-line for longer.

ABB are also providing specialist functional engineering, including finite element analysis and materials engineering for process equipment used during one of Warwick’s complex reaction processes. Integrity management, compliance with legislation and efficient inspection services are also key areas that contribute to Warwick International’s continued success with ABB also providing help in these areas.

“ABB Engineering Services have demonstrated that they are able to provide a high level of specialist support in a variety of disciplines in a pragmatic, timely and cost effective way. This has led to a significant reduction in capital expenditure and maintenance inspections whilst maintaining process safety at high levels.” - Jon Cooil, Chief Engineer, Warwick International Ltd. ■

Upstream oil and gas: extending the life of topsides equipment on offshore installations

A changing scene

Mature offshore fields, in the North Sea and elsewhere, are all operating against a background of:

- Falling production rates
- Increasing unit costs
- Infrastructure fast approaching, or already operating beyond, its design life

Until recently the response of the operating companies was a combination of divestment, decommissioning and dismantling. But over the last few years there have been significant changes in the industry:

- Changes of operating companies
- Higher, but volatile, oil prices
- Improvements in drilling and well technology
- Increased recovery rates
- Tie-in of smaller, previously marginal, fields to existing (ageing) infrastructure



The result is that the equipment installed on offshore installations may now be required to remain in service for anything up to 20 years beyond its original design life.

Consequence

One of the consequences is that stakeholders are increasingly looking for the following when considering the implications of extending the operating life of their assets:

- Continued licence to operate - technical justification for operating the equipment beyond its design life
- Confidence in continued safe, reliable and profitable operation
- Knowledge for investment decisions - future CAPEX and OPEX requirements for the asset. Typically \$100m
- Quantified improvements to the bottom line - avoiding production losses and expenditure, from the improvements made

Meeting the challenge

ABB Engineering Services has been applying its structured asset life extension methodology to enable offshore operators to address these issues. The methodology ensures that the full range of factors affecting the integrity of the asset over its extended operational life are considered in a rigorous and structured process.

- Degradation mechanisms - corrosion, fatigue, creep etc.
- Obsolescence
- Changes in process fluids or conditions
- Workforce age and competency
- The quality of historical records
- Dependence on contractors
- Existing initiatives to improve asset reliability and integrity
- The regulatory framework and changes in legislation



A typical design life for topsides equipment is 25 years. Operating beyond design life does not necessarily mean that it is no longer fit for service and will automatically require replacement. ABB's experience from conducting asset life extension studies is that, under the right circumstances, much of the topsides equipment can be operated for far longer. This is frequently against a requirement to cope with increasingly onerous operating conditions.

The deliverables of these studies provide:

- Equipment criticality ratings and approaches for the mitigation of risk
- The current status of the equipment versus the effective degradation mechanisms
- Identification of the actions necessary over the extended life cycle and the associated OPEX requirements
- The development of CAPEX profiles for the investment required to maintain asset integrity, reliability and uptime
- The capability of the equipment against the anticipated production profiles

Benefits generated

Typical findings for topsides equipment are that 75 to 80 % of the installed equipment can continue in service with the appropriate maintenance and inspection regimes. Circa 10% of the equipment requires replacement or major repair and a further 10% is likely to require minor repairs during the extended operating life. The benefits derived from these studies give a typical payback better than 10 to 20 times the cost of the study.

For more information on this article please contact: Andy Hollins, Principle Consultant, ABB - andy.hollins@gb.abb.com

ABB wins extension to contract with SASOL



ABB Engineering Services', operations improvement group, has extended its contract with SASOL to continue the work in raising the operational performance of the manufacturing business units. Past work included benchmarking 10 plants which led to the development of an operations excellence management system, that defined the standards (or expectations) of business practices in an organisation operating at excellent levels of performance.



SASOL plant in Secunda, South Africa

Using these practices standards and measuring hard performance against a range of key metrics, ABB has conducted a baseline on a further 12 plants worldwide and facilitated improvement teams focused on the issues raised. Step changes in performance have been achieved by full time task teams of production and engineering personnel, supported by part time task teams of senior and middle managers.

Senior teams have focused on issues such as value chain integration, whilst middle managers have often reduced systemic wastes around business processes and procedures across functional silos. Additionally the group has helped to develop SASOL's own internal consultancy group with the expressed intention of these people taking control of the process for themselves without the need for external consultants.

Due to the successes achieved by the two groups of consultants (ABB and internal), resulting in a conservative return on investment ratio of 10:1, SASOL has engaged ABB for a further year to maintain the progress. SASOL is also interested in improving safety, energy and asset integrity performance with a similar approach.

ABB's services to Petronas



Petronas is a fully-integrated oil and gas corporation wholly-owned by the Malaysian government and is vested with the entire ownership and control of the petroleum resources in Malaysia. It is ranked among the Fortune Global 500 largest corporations in the world.



Petronas plant in Malaysia

ABB Engineering Services has a long established relationship with Petronas and has recently put in place an arrangement allowing Petronas to obtain call-off support for our suite of services, in a very quick and simple way. This work can be carried out if practical, in the UK or, where there is a real need, by travelling to Malaysia. Two recent examples of work carried out under this contract are as follows:

- 1) Advice on a contractor repair procedure for defects found in a set of pressure swing absorbers in an ammonia plant at Kerteh, Malaysia. The advice given was all provided from the UK via e-mail and required input from integrity management, materials and pressure systems consultants.
- 2) Provision of a consultant to chair and lead a risk based review meeting looking at a novel design for a gas distribution system in a refinery. The meeting was held in the Petronas offices at Dayabumi in Kuala Lumpur.

The ABB asset integrity pRIME database was used to record the discussions during these reviews and record any actions required. The client was very pleased as the database allowed a draft hard copy of the review to be provided within a couple of hours of the conclusion of the review and hence met an important deadline for an internal Petronas meeting. ■



Petronas Towers in Kuala Lumpur, Malaysia

26th annual GPA conference



ABB Engineering Services attended the 26th annual Gas Process Association (GPA) 2009. Dave Burgess of ABB presented a paper on 'Simultaneously improving integrity and reducing cost on a BP gas plant'. The paper was based on ABB's RBI support to BP's Dimlington terminal and was well received.



Dave Burgess of ABB presenting at the 26th annual GPA conference

Alarm management



ABB's alarm management consultant Rob Turner gave a presentation entitled 'Alarm management; a key element of Process Safety Management? Or a personal view from the field' at the IQPC conference held in London on 'HSE, risk management and process safety for power generation'. The delegates included representatives from DRAX Power, E.ON, Centrica and British Energy.

DIA conference



Dave Thompson of ABB chaired the Drug Information Associations (DIA) conference on pharmaceutical quality in Prague. The conference was attended by around 60 senior personnel representing all stages of drug manufacturing - R&D, clinical trials through to manufacturing. In addition to being chairman for the event, Dave led an interactive workshop on 'Describing the design space in the submission and translation for the manufacturing environment'.

Improving business performance



ABB ran the annual improving business performance through resource efficiency and manufacturing excellence conference in Warrington. There were over 90 attendees at the event, that we run in conjunction with the Chemical



Conference speakers: Nick Lindop Pentagon, John McFadyen, MacFarlan Smith, Martin Brigg, EA, Peter Hunt, ABB, David Bailey, Innopsec, Mike Lancaster, CIA, Dale Curless, GSK, Bruce Adderley, Cours, Brian Murphy, Robinson Brothers Ltd, Tony Walmsley, Solvent Resource Management Ltd.

Industries Association's annual business performance awards. Senior leaders from the CIA and Environment Agency spoke at the conference along with the shortlisted companies for the ABB sponsored award.

Energy Institute conference



ABB in partnership with the Energy Institute hosted a conference on 'Process Safety Management for power and steam generation' and there were approx 80 delegates from companies such as E.ON, RWE npower, EDF Energy and Centrica Energy. Graeme Ellis of ABB gave a presentation entitled 'Identifying and assessing major accident hazards on power stations'. The date for 2010 conference is 8th July 2010 held in London.



Conference speakers: Nick Burnham, ABB, Judith Hackitt, HSE, Andy Jones E.ON, John Pond, EDF, John Mumford, BP, Peter Dawson, HSE, Martin Carter, E.ON, Graeme Ellis, ABB, Andy Geddes, Scottish Power, Marc McBride, Centrica

Hazards XXI conference



ABB sponsored, exhibited and presented at the IChemE Hazards XXI conference in Manchester, with over 300 delegates present. Neil Blackhall of ABB gave the welcoming address at the reception and ABB also presented 6 papers. The conference started with a workshop on Safety Instrumented Systems which was attended by 30 delegates from companies including BP, Ureco, AZ, Unilever and Shell UK.



Neil Blackhall of ABB giving the welcoming address at the reception

International petroleum



ABB's asset management consultant Laza Krstin gave a presentation entitled 'Assuring sustainability through effective asset management' at the Energy Institute's international petroleum conference. ABB had an exhibition stand present and sponsored part of the conference which attracted over 500 delegates over the three day period. ■

Environmental and waste management

Andrew Reay, ABB, presented a paper on 'Environmental accident management' at a CIA's environmental and waste management event in Huddersfield. The event was attended by Dow Corning, BASF, SABIC, Novartis, Genzyme and included presenters from the Environment Agency and Shell.



Project management training

ABB continues to deliver project management training for Bombardier Transportation across Europe and the message of ABB delivery is growing with waiting lists on each of the events. The last event, project initiation and planning, delivered by Amanda Eyles of ABB received comments such as "Thanks very much for training some of our staff, they both said it was the best course they have ever been on!"



GENSIP technical exchange meeting

ABB hosted a technical exchange meeting with GENSIP (Electricity Generators Safety and Integrity Programme), including representatives from E.ON and RWE npower. The exchange helped us to better understand the key industry drivers and practices for process safety and integrity management in the energy industries.

IChemE awards dinner

ABB hosted a number of tables at the high profile IChemE annual awards dinner in York. ABB also sponsored and presented the prestigious manufacturing sustainability award.



Host Derek Thompson (left) presenting the award to Cardiff University & Solvay, winners of the IChemE sustainable technology award with Neil Blackhall, ABB (right)

IMechE evening seminar

A technical talk on 'Condition monitoring practice - Past, present and future' was given by ABB's integrity management consultant Ray Cochrane at the IMechE evening seminar at Teesside University. 47 people attended, representing the various industry interests in the Teesside Area.



Inspection seminars

Gillian Roycroft and Paul Jackson of ABB presented two half day seminars on inspection hot topics to 36 INEOS asset engineers at Daresbury.



Feedback from senior INEOS engineers was very positive and ABB committed to run further seminars next year.

HCF 10th anniversary

ABB sponsored the Humber Chemical Focus' 10th anniversary celebration, the event included key inputs from members.



Speakers: Dr Glyn Hughes, HCF, Peter Hunt, ABB, Andrew Dear, OAMPS Specialist Insurance, Michele Cusack, N.E Lincolnshire Council, Clive Rounce, CATCH, Tony Ogden, BOC, Glenn Sibbick, Centrica Storage

ABB webinars

ABB have completed 3 open webinars. Over 120 people from around the world registered, Laza Krstin, Chris Loveridge and Graeme Laughland of ABB talked about Corrosion Under Insulation, Boiler care and Process Safety KPI's. The hour long events were the first couple of monthly webinars planned for this year. For the complete list on forthcoming webinars visit - www.tinyurl.com/es-courses



Launch of annual pressure relief conference



Pressure relief conference flyer

ABB Engineering Services has launched its annual pressure relief conference to be held on 30th June 2010 at the Radisson Blu Hotel, Manchester Airport.

Pressure relief forms a key part of many asset process safety systems and the conference will focus on best practice, latest developments and learning from incidents.

Speakers are from a wide range of companies including: BP, Syngenta, SABIC, INEOS, Huntsman and HSE. To find out more please contact Debby Law - deborah.law@gb.abb.com. There will also be an exhibition of many suppliers at the event. ■

Conferences

Conferences are major industry forums focusing on key topic areas

Conferences 2010		
9th June	Occupied Buildings	London
30th June	Pressure Relief	Manchester
2nd November	Process Safety Management	Manchester
1st - 2nd December	Shutdowns and Turnarounds	Edinburgh



Seminars

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

Seminars - May 2010 to September 2010		
27th May	After the Energy Audit	Edinburgh
22nd June	Complying with PFEER Offshore	Aberdeen
29th June	Inspection Workshop	Aberdeen
13th July	Alarm Management in Practice	Birmingham
7th September	Human Factors in Practice	Grimsby
7th September	Demolition and Remediation	Grimsby
22nd September	After the Energy Audit	Manchester
23rd September	Risk Based Inspection	Aberdeen
28th September	Inspection Workshop	Teesside
28th September	Living with IEC 61508	Grimsby



Webinars

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

Webinars - May 2010 to September 2010		
26th May	Automation System Upgrade	
23rd June	Asset Life Strategy	
29th September	Managing Pressure Vessels	



Technical training

Training courses provide in-depth knowledge on key subjects as part of an engineer's professional development.

Technical training courses - May 2010 to September 2010		
24th - 28th May	Process Safety Management Best Practice	Manchester
26th - 27th May	Managing Deterioration of Plant Equipment *	York
8th June	SIL Awareness for Control / Electrical Technicians	Edinburgh
15th June	Working with CDM Regulations	Grimsby
15th - 17th June	Pressure Relief *	Manchester
16th - 17th June	Delivering Energy Savings *	Northampton
16th - 17th June	IEC 61508 / 61511 and SIL Determination *	Aberdeen
23rd June	An Understanding Process Safety Management	Cardiff
29th June	Process Safety Management Leadership	Manchester
1st July	Hazard Study Awareness *	Grimsby
6th - 8th July	Human Factors in the Workplace	York
8th - 9th September	IEC 61508 / 61511 and SIL Determination *	York
21st - 22nd September	Root Cause Analysis and FMECA	Manchester
28th - 30th September	Pressure Relief *	York
29th - 30th September	Essentials of Pressure Systems *	Edinburgh



* IChemE approved course.

All of the above events are organised and delivered by ABB Engineering Services.

For more information on: Seminars please telephone: +44 (0)1642 372029 or e-mail: deborah.law@gb.abb.com

Training courses please telephone: +44 (0)1642 372121 or e-mail: jackie.kendall@gb.abb.com

Customer satisfaction increases to our highest level - so far

We have just received the results of our Engineering Services customer survey for 2009 and the first point is to thank all of our customers that took part in the survey, giving us some very valuable feedback. The great news is that our overall satisfaction score increased to 79.3%, the highest level in the 7 years we have been doing the survey.

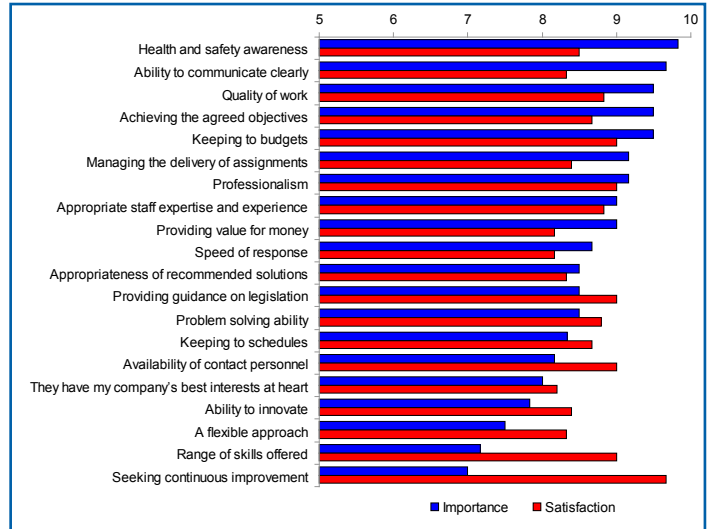
Despite the economic difficulties during last year we invested in company wide customer service training and a number of other service improvement initiatives that have contributed to the improvements we made. 140 customers were surveyed earlier this year and rated our performance against 20 key factors affecting customer services.

The areas we are most highly rated for include:

- Professionalism
- The expertise and experience of our staff
- Achieving agreed objectives
- Safety performance and guidance on regulations
- The range of skills we offer

The areas where we had the biggest improvements were in the availability of personnel, our flexibility and keeping to budgets - all areas we concentrated on in the customer service training.

While we are very pleased with the results from last year we are also determined to do even better next year. We are planning more customer focussed training in 2010 and each of our delivery groups has developed a customer service improvement plan, based on the specific feedback they received from the survey. ▶



Doing best what matters most - the scores for one of our groups

If you have any comments or feedback in the ABB Engineering Services Newsletter please contact: Graeme Collings - graeme.collings@gb.abb.com

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