BROCHURE

Inspection solutions
Delivering value and improving equipment integrity, whilst focusing on real risks
We do not just provide ‘MOT’ type certificates. Our inspection reports provide information to enable our clients to manage the deterioration and integrity of their statutory and non-statutory equipment in a focused and cost-effective way.

By focusing on areas of real risk, ABB can optimise the scope of the examinations to improve the integrity of the assets whilst driving down the total cost of inspection. Our inspection engineers get to know your plant and people and ensure that flexibility in the regulations is used to set appropriate intervals between examinations.

ABB provides technical and engineering services to improve performance in the areas of compliance, operations and engineering to customers in the chemical, petrochemical, oil & gas, power, pharmaceuticals, metals and consumer industries worldwide. Our accredited integrity management service has a long track record of inspection which, combined with our operating history and functional expertise, gives a leading edge capability across all assets.

**Capabilities**
- Inspection management
- Inspections and schemes of examination
- Fitness for service assessments
- Repair specifications
- Materials engineering and corrosion
- Risk Based Inspection (RBI)
- RBI revalidation
- RBI+© software
- Asset life studies
- Anomaly management
- Inspection software
- Training

**“The service provided has been excellent, 10/10.”**

Plant Engineer, INEOS
Integrity management

Asset integrity is one element of ABB’s overall asset lifecycle support offering. We can provide integrity management support throughout the plant life cycle.

**Inspection**
- Pressure systems inspection services
- Risk Based Inspection (RBI)
- Inspection software
- Non-Invasive Inspection (NII)

**Asset management**
- Asset Health Check (AHC)
- Technical Due Diligence (TDD) assessment
- Risk based approaches embracing safety, maintenance, criticality and inspection
- Competency and development training and appreciation programmes
- Integrity management solutions software

**Late life operation**
- Asset Life Studies (ALS)
- Late life operations
- Obsolescence studies
- Mothballing and preservation
- Ageing plant assessment

**Decommissioning and demolition**
- Managing redundant systems
- Preparing for decommissioning
- Land assessment and remediation
- Strategy development and management

**Design assurance**
- Pressure equipment specification and design
- Independent design review
- Fitness for service assessment
- Repair specification
- Materials engineering and consultancy

**Other ABB capabilities include:**
- Process safety
- Project services
- Technical engineering
- Technical software
- Technical training and competency

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Above: ABB’s equipment life cycle approach.
Enhancement of RBI+© pRIME tool

All RBI reviews undertaken by ABB have been delivered using the RBI+© pRIME (process Reliability and Integrity Management Excellence) tool enabling an efficient and robust assessment process. This software has now been further enhanced and is available for license as a standalone tool. Consequently, clients are now able to complete RBI reviews in-house effectively and efficiently according to ABB’s recognised methodology.

In addition to the existing benefits of ABB’s RBI+© methodology the enhanced tool offers:

- More efficient RBI studies, using less operating team time
- Access to a large knowledge bank of best practice guidance and equipment inspection data

pRIME toolkit

The RBI+© software is one element of ABB’s pRIME toolkit. pRIME is a methodology for managing asset integrity; recognising symptoms, diagnosing causes, and implementing corrective or improvement action. Adoption of the pRIME methodology will deliver a beneficial, cost effective, sustainable solution. All processes are risk based, ensuring that effort is concentrated on areas that will give the highest return.

Key features of the software

- Deployable via web, intranet and Lotus Notes
  The software can be accessed in various ways depending on client and project requirements.

- Secure
  The application is secured using tiered access, meaning that access and edit permissions can be set per person, module, by module. Data is secured through encryption.

- Access from anywhere
  The application can be accessed through a web browser or by using a local copy from the users PC.

- Data capturing and review
  Several team members can work concurrently in capturing the input data electronically to enable review during multi-disciplinary meetings. Data from the different team members is transmitted through client and browser based applications and aggregated allowing individuals to work separately. This allows the information to be reviewed by specialist engineers outside of the immediate project team.

- Corrosion loops
  The software enables similar items of equipment with similar operating conditions and deterioration mechanisms to be grouped together to form what are sometimes called corrosion loops. This ensures that a range of and changes in process conditions are considered consistently across the complete series of equipment affected. This also minimises the input requirements.

- Consistent workflow and management reporting
  Each equipment item review is subject to a series of secure stage gates to ensure that all of the necessary input data has been collected, analysed and the recommendations captured. This structured work process facilitates the tracking and reporting of project status by means of the progress dashboards.

- Risk assessment according to client’s criteria
  The assessment criteria for likelihood and HSE and business consequences are configurable to the client’s own risk assessment criteria.

- Automated generation of reports
  Summary and detailed reports of each RBI review project program can be created in Word and Excel. The format of these reports is configurable in the field on a project by project basis.

- Portfolios
  Standard templates are available for each sector - oil and gas, refinery, petrochemical, pharmaceutical and power. These templates prompt assessment of relevant deterioration mechanisms for each sector.

To see how RBI+© pRIME software can benefit your business try our free demo at: www.prime-toolkit.com
Our approach
Examinations are based on the operational risks of the specific equipment, built on an understanding of how deterioration will occur and the best method of monitoring this deterioration. This ensures legal requirements are met while minimising costs and improving uptime.

Schemes of examination focus on the areas of real risk, identifying:
- What to inspect - i.e. where failure is unacceptable
- Where to inspect - specific areas where deterioration could occur
- How to inspect - the particular technique required
- When to inspect - optimise the frequency between examinations

Inspection reports
These clearly identify any issues and provide valuable information on the condition of the equipment, recommendations and actions that will maintain it fit for purpose. Photographs, sketches and non-destructive examination results are recorded and assessed.

Procedures and guides
These ensure the legal and business requirements are met cost effectively and promote best practice, providing a robust system for the implementation of modifications, repairs and deferments. This eliminates the requirement for clients to maintain their own inspection procedures and guides.

Information management
Information management of inspection reports, schemes of examination, repairs / modification, scheduling of examinations and defect tracking. Integrated web accessed databases that provide a complete asset management tool.

Benefits
- Improved integrity and reduced costs by focusing on areas of real risk
- Cost and time efficiencies gained by using supporting services for all asset integrity issues
- Elimination of low value inspections and associated inspection preparation costs
- Improved asset integrity through a team based approach
- Cost effective compliance with legislation and business requirements
- Improved equipment reliability and availability

“The transition to ABB was undertaken in a seamless manner. Our inspection service has since significantly improved with better budgetary control, improved standard of inspection, reporting and excellent team working leading to an improvement in the integrity of our asset.”

Engineering Manager, BP
Inspection software

Effective and efficient control of inspection work is a critical component of a successful plant integrity and reliability management system.

With the sheer volume of assets which require regular inspection, along with all the activities performed in order to support the inspection work, it can quickly become a difficult and time consuming process to manage.

ABB has developed a web based software tool to provide seamless integration between its inspection service and site engineering asset management staff.

Designed as a whole inspection lifecycle management solution, the key features include:

**Inspection records**
Repository for all inspection records including inspection reports, Written Scheme of Examination (WSE), Non-Destructive Testing (NDT) reports and other information which provides insight to the condition of the equipment. Having all the data in one place for the inspection, maintenance and planners, ensures the whole team are working with the latest information.

**Photos, NDT information**
Photos of the overall condition of the equipment and any defects provide an excellent means of comparison over the life of the equipment. The software can effectively store and interrogate large volumes of data, ensuring they can be readily accessed.

**Electronic signature and workflow tracking of documents**
The software eliminates the requirement for printing out paper copies of reports and the time consuming activity of getting wet signatures from the inspection engineer and responsible engineer. The electronic signature feature ensures that the report is signed by the correct people and the tracking system provides up-to-date information on the status of where the report is in the workflow. No more lost reports or confusion on who has the master copy.

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Example of personalised dashboard.
Enhanced features
The software can also provide the following enhanced features as part of inspection pRIME plus.

Dashboards
The software provides a traffic light system to identify equipment items that require particular focus, either due to identified anomalies or changes to frequency. This ensures the higher risk items are given the appropriate focus. The workspace also works on a traffic light basis, with new actions appearing in the green area and as the action approaches its target date moving into the amber area, with red highlighting overdue actions. This provides effective action tracking with clear current status.

Scheduling tool
Inspection due dates can be interrogated by plant and timeline, clearly identifying the upcoming workload and those items that have yet to be completed on the system. This gives real time data, enabling the whole team to review and plan the inspection, repairs and maintenance aspects of ensuring equipment integrity. The menu system enables different parameters (plant, timeline and inspection engineer) to be viewed and then compared.

Additional workflow
The following activities can be completed online ensuring progress can be tracked and all aspects of the equipment history is recorded and can be interrogated.
- Modification forms (INS5)
- Deferment forms (INS6)
- Deregistration (INS8)
- Relief valve testing (INS9)

This reduces the time taken to complete these important processes and ensure all the master data is readily available to the whole team.

Example of output of scheduling dashboard.

“It looks great, and is easy to use. The wide range of tasks associated with an inspection event isn't always recognised, so this software will really improve how we manage inspection work here on site.”

Asset Engineer, Chemical Sector