

Reliability Based Mechanical Integrity – Lloyd's Register Capstone

ASSET
MANAGEMENT
SERVICES

Lloyd's Register's asset assurance services and technologies involve a systematic process for managing and reducing risk across a wide variety of asset families throughout the process industry. The Reliability Based Mechanical Integrity (RBMI) solution from Lloyd's Register Capstone Inc., a Lloyd's Register Group company, has a proven track record for delivering significant value to many of the major and super major integrated oil, petrochemicals and chemicals companies worldwide. RBMI is **third party certified to API 580** and can be integrated with back office systems such as **SAP, CMMS, document management solutions and data historians.**

Delivering RBMI globally:

With more than 240 offices worldwide and over 6000 dedicated and qualified staff, RBMI is now available from Lloyd's Register Group operations globally. The Lloyd's Register Group is a leading provider of risk based asset management services, the primary aim of which is to safely optimise business performance. Lloyd's Register Capstone's Reliability Based Mechanical Integrity (RBMI) software is key to our asset management services.

RBMI methodology

The RBMI technology defines the risk of operating equipment using a Criticality Rating process which combines two separate factors: the likelihood and the consequence of failure.

The Capstone Criticality Rating can be applied to all processes and categories of equipment including fixed equipment, piping systems, pipelines, rotating equipment, instrumentation and control and electrical systems.

Integrated with the criticality rating are **client modifiable** business process best practices strategies for inspection, maintenance and condition monitoring. This optimised plan focuses inspections, maintenance, fitness for service, repair and replacement on the highest risk assets first and when integrated with the work order system, allows the client to measure the performance of the program against plan as well as the timeline for achieving the target risk reduction for the asset, system, process unit, facility, production platform or across the entire enterprise.

The RBMI global delivery model achieves early time to value

The RBMI delivery model is auditable, repeatable and measurable. Our teams deliver RBMI asset management programs providing real and measurable return on investments ranging from 10:1 to 20:1 within six months or less of



completing the program. The RBMI delivery model is designed to optimise the client's time, blending client participation with the Lloyd's Register delivery team as desired.

KPIs and RBMI Program Management

The RBMI delivery model integrates all the asset data into one environment. When all the data has been collected, interfaces verified, criticality risk analysis reviewed and approved along with the initial inspection and condition monitoring plan, the program management or evergreen phase of the program commences

At this point clients may elect to manage the program, outsource to a third party or have Lloyd's Register Group manage the program going forward.





Regardless, our training programs and embedded KPIs ensure the sustained performance and continuous improvement of the program. Typical KPIs are made available at the desktop and can be filtered to include:

- turnaround cost savings
- ongoing reductions in high potential and environmental incidents
- ongoing reductions in business risk of lost production
- performance against plan
- performance of integrity operating windows
- asset remaining life.

Suggested Next Steps

Asset management projects like RBMI will provide significant value to your enterprise and therefore visibility of your asset management programs at the executive board room. For many of our clients, our RBMI program becomes one of their top implementation programs. Therefore, to more clearly understand the value proposition, technology and delivery model we've designed the following seminars and presentations:

- the RBMI value proposition
- the RBMI delivery model
- integrity operating windows – integrating process safety and asset integrity management
- RBMI and fitness for service
- scorecarding RBMI
- RBMI and turnaround planning
- storage tanks and RBMI
- RBMI software demonstration for upstream assets, downstream assets, relief devices, exchangers, pipelines, rotating equipment, electrical systems, instrumentation and control
- budgeting for an RBMI program.

We've also made a series of white papers available for your use:

- NH3 Storage Tank Analysis
- AICHE 2003 Relief Devices
- TAPPI 1999 Pulp and Paper
- IMIQ 2002 Integrating RBI and Real-Time Corrosion Management
- 2000 Using RBMI for a CUI Program
- NPRA 2007 Assessing the Value Creation of RBI

Simply contact Lloyd's Register and we'll either schedule a visit to your site or schedule a web seminar dedicated to your organisation. We'll also invite you to our user's conference where potential clients get a chance to hear directly from our users as to their experience working with Lloyd's Register Capstone and managing their RBMI Program.

Summary of business benefits

- confidence in the safety of your asset
- improved plant availability and income
- enhanced return on investment
- optimised inspection, mitigation and repair cost
- reduced system and equipment failure
- ability to safely extend operation beyond original design life
- a systematic managed approach to repairs and replacements.

We have an extensive history of independent and impartial delivery of asset verification, assurance and consultancy services.

www.lr.org

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