Risk Based Inspection 2020

New Standards, New Tools, New Application Areas

19th-20th March, 2020
Berlin, Germany

www.aureliusglobalmasterclass.com +44 203 239 8083
masterclass.registrations@aurelius.in
Introduction

Risk Based Inspection (RBI) and is an approach initially developed in and for Oil and Gas Industry has changed a lot in the year 2019. New industrial and international/European standards (such as EN 16991:2018 or new ISO standards, or the less recent API and ASME standards have been brought into the modern practice.

New tools corresponding to these documents and the overall Industry 4.0 trends have been developed, and, last but least; the application area has been broadened to areas such as power and paper industry.

In addition the integration of RBI with Maintenance, Process Safety Management overall Asset Management. This course will help its participants to keep abreast with these developments: both the experienced RBI practitioners and those only recently involved will find an “orientation baseline” in this course showing first-hand how these 2019-trends have been and are applied in refineries, power plants and other industry.

Key Benefits

→ LEARN BOTH about the basics of RBI and about the newest developments in the area.

→ OBTAIN highly practical approaches to a strategy that will help to improve and optimize inspection activities and effort whilst maintaining or even improving safety .

→ IMPLEMENT new systems for your own organization that will assist in developing inspection excellence .

→ GAIN new techniques and discover new tools that will improve your inspection and asset integrity performance .

→ IMPROVE your own way of dealing with inspection issues by self-assessment and worked examples .

→ LEARN the value of generic and individual knowledge and specific data .

→ LEVERAGE the value of information to develop effective decision making strategies

→ FOCUS your time, skills and capabilities on critical areas that will make a significant difference to your asset performance .

→ BENCHMARK against best practices .

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Who should attend?

→ Plant managers, in particular asset managers
→ Inspection & Maintenance personnel
→ Plant Reliability engineers
→ Materials and corrosion engineers.
→ Plant inspectors responsible for managing the integrity of ageing process equipment, pipelines, boilers and storage tanks.
→ Technicians responsible for the safe on-going operation of pressure containing equipment in oil and gas facilities and HSE personnel.
→ Production and other plant engineers

Our Faculty

All the masterclasses are conducted by world’s most renowned industry veterans with an average experience of 20 + years. They are highly skilled and have delivered trainings and masterclasses in their respective domains globally and a multiple times. They bring a lot of in-depth industry knowledge, best practices and know-how to a masterclass. This is a great blend of knowledge and experience with teaching and communicating skills.

Our faculty has written numerous publications combined for internationally recognized journals and conferences.

The approach is consultative in nature with a keen eye and focus on table of contents. This helps to create a situation and environment of knowledge sharing, problem solving, learning & needless to say professional networking.
Why you shouldn’t miss it? -

→ To keep abreast with the newest developments in the area of RBI.
→ To understand/rehearse basic principles improve risk management results.
→ To understand how you can include RBI in the overall process of the company risk and asset management.
→ To improve you current strategies of improving reliability and availability of the asset by planning and executing those inspections that are needed.
→ To optimize scope of inspections plans by increasing safety and reducing costs.
→ To improve mitigation risk of failures and their financial and operational consequences
→ To increase plant availability and reduce unplanned shutdown.
→ To provide a more cost-effective alternative to traditional inspections by means of non-destructive testing.
→ To improve adherence to current standards and codes of compliance resulting for increased.
→ To interact with the leaders and peers in the RBI in industry and share best practices with them.
→ To profit from the practical application cases presented.
→ To discuss the alternatives when coping with the challenges such as increasing lack of time, increasing pressure for cost control and lack of adequate resources.
Partial list of companies that have benefitted from our faculty's expertise:

- DuPont
- Sabic
- LyondellBasell
- Huntsman
- Exxon
- Total
- Eastman
- Johnson & Johnson
- Shell
- BASF
- AkzoNobel
- INA
- Q8
- BP
- DSM
- Knauf Insulation
- ABB
- UMICORE
- MOL
- C.P. Chem
- Rain Carbon
- Lanxess
- GSK
- SBM Offshore

Training daily schedule:

The daily schedule will follow the pattern expressed below:

08:30 - Morning coffee & registration, Course Begins at 09:00
10:30 - Morning refreshments and networking break
11:00 - Course re-commences
12:45 - Networking luncheon
14:00 - Course re-commences
15:30 - Afternoon refreshments and networking break
16:00 - Course re-commences, Course concludes at 17:30

Certification & feedback:

Certification of achievement and attendance will be issued on the successful attendance, completion and passing the end of course assessment.

The feedback will collected by the lecturer using web-based interactive tools (Slido).
Key Topics

- Data Collection for RBI
- Risk Analysis
- Consequence of Failure
- Likelihood of Failure
- How Inspection Affects Risk
- Assessing Inspection Effectiveness
- RBI Inspection Planning
- RBI Inspection and Task Management
- Benefit & Limitations of RBI
- Case Studies
- Example of major chemical accidents/incidents with inspection or materials & corrosion
- Shortcomings as cause of the incidents

Berlin, Germany's capital, dates to the 13th century. Reminders of the city's turbulent 20th-century history include its Holocaust memorial and the Berlin Wall's graffitied remains. Divided during the Cold War, its 18th-century Brandenburg Gate has become a symbol of reunification. The city's also known for its art scene and modern landmarks like the gold-colored, swoop-roofed Berliner Philharmonie, built in 1963.
Day 1

**ASSET INTEGRITY MANAGEMENT (AIM) IN THE PROCESS INDUSTRY**
- Discussion: Audience perception of AIM
- Process Safety and Asset Integrity Management (AIM) – A holistic approach and its basic elements (RBI + RCM + SIS)
- RBI as a part of AIM
- Relationship between RBI and RCM (reliability Centered Mainance) and SIS (Safety Instrumented Systems)
- Role of Risk Based Inspection within AIM and Continuous Improvement
- RBI: typical benefits & limitations

**RISK ASSESSMENT CONCEPTS**
- Discussion: Audience perception of risk assessments
- What is risk?
- Risk management & risk reduction
- Case Study: Case histories of AIM in a refinery and in a power plant
- New standards
  - EN
  - API
  - ASME

**INTRODUCTION TO RISK-BASED INSPECTION**
- Key elements of an RBI Program – The major steps
- Consequence of Failure
- Probability/ Likelihood of Failure
- Types of RBI assessments
- Understanding how RBI can help to manage operating risks
- Relationship between RBI and other (risk-based) initiatives
- Jurisdictional requirements

**DAMAGE MECHANISMS AND FAILURE MODES**
- Identification of degradation mechanisms
- Preparation of corrosion loops
- Establishment of Integrity Operating Window

**APPLYING RBI PRACTICALLY**
- Establishing objectives & goals of a RBI assessment
- Data quality required versus data available
- Resources and budget issues
- Scope of the RBI analysis
- Legal requirements
- RBI software versus other IT based solutions like Asset
- Integrity Software with RBI tool

*Case Study: Case Histories of major industrial incidents Group Discussion: Cases of damage*
Day 2

APPLYING RBI PRACTICALLY: ASSESSING PROBABILITY/ LIKELIHOOD OF FAILURE (POF/ LOF)

- Introduction to probability/likelihood analysis
- Types of probability/likelihood analysis
- Accumulated damage

APPLYING RBI PRACTICALLY: ASSESSING CONSEQUENCE OF FAILURE (COF)

- Intro to consequence analysis
- Consequence Categories to be included or not
- Types of probability/likelihood analysis

APPLYING RBI PRACTICALLY: RISK MANAGEMENT AND RISK-BASED INSPECTION PLANNING

- The Risk Matrix and Risk Management
- Risk target
- Inspection effectiveness
- Intrusive versus non-intrusive strategies
- Classic and advanced NDE technology
- Inspection strategies based on RBI results
- Inspection measures to address specific failure modes and degradation mechanisms

CLOSING SESSION

- Examples of RBI Pitfalls
- Q&A session

There will be examples throughout the course to demonstrate how to deal with individual steps when performing an RBI analysis. Question and Answer: Open session to discuss any aspects of the training and cover off items identified at the start of the session which have not been covered.

POST-TRAINING COURSE ASSESSMENT (END OF DAY TWO & END OF COURSE)

- Case Study: Relationship between RBI & a FFS assessment
- Monitoring issues
- Knowledge Management

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**Email:**

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- Ms
- Mrs
- Mr Surname

**Name:**

**Job Title:**

**Email:**

**Mobile No:**

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**Event Production**

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**Venue:** You can be assured of a comfortable, convenient learning environment throughout the duration of the course. We will send out the venue confirmation 2 weeks before the course commences. **Accommodation:** Accommodation is not included in the registration fee. To reserve hotel accommodation kindly contact: masterclass.registrations@aurelius.in **Cancellation Terms & Conditions:** CANCELLATION must be received in writing at least 30 days before the event. All bookings carry a 50% cancellation fee immediately after a signed contract has been received by Aurelius CS. Cancellation within 7 days notice from the event date will not be able to obtain a full credit for any future events. NO Refund will be made available. Upon the completion and receipt of the registration form, payment is required within 5 working days of the issuance of the invoice.

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