

Risk Based Inspection

Mastering this cutting edge risk assessment methodology to improve overall safety and equipment integrity for plant optimisation

Prince Hotel & Residence
Kuala Lumpur, Malaysia

24th & 25th May 2010

"It is not unusual to do an inspection and find something that needs correction,"

Sharon Watson

Organisations today are making it mission critical to embrace power in inspections and maintenance to optimise plant efficiency. By integrating quality Risk Based Inspection, organisations will be able to reengineer integrity and extend the lifetime in plant operations leading to enhanced safety compliance and risk assessment



Your distinguished course facilitator:

Stephen Anderson CEO of APTECH Engineering
Intertek US

Mr. Stephen A. Anderson, MSc., Materials Science is CEO and Senior Materials Scientist at Intertek APTECH with over 20 years of industrial experience in refineries, petrochemical plants and oil companies in the USA, Canada, and South Africa. For the past 20 years, he has specialised in Asset Integrity Management Engineered Safety, metallurgical and corrosion science of refinery and chemical plant equipment and the development of innovative inspection and maintenance programs for a variety of facilities

Some of the organisations' that Mr. Anderson has provided consulting and training services for include:

- Exxon
- Cairn Energy
- Celanese LTD
- CITGO
- Apache Nitrogen
- Flour Daniel Inc.
- H.B. Fuller Company
- Sasol
- Marathon Oil Company
- PetroCanada Company
- Samsung Atofina Chemical (S.K.)
- SK Chemical Company (S.K)
- Sunoco
- BP Exploration
- Caltex (S.A.)
- Chevron (Angola)
- Eastman Chemical Company
- Firestone
- GASCO (U.A.E.)
- Huntsman Chemical Company
- Kuwait Oil Tanker (Kuwait)
- Occidental Company
- Pioneer Natural Resources
- Kaiser Aluminum Corp.
- Suncor Inc.
- Tesoro Refining Company

Testimonials from similar past events

"marcus evans is a very good course organiser and able to group all people all over the world. Good networking for all of us."

Murphy Oil Sarawak

"There is a good interaction among the participants and a good exchange of information."

Pilipinas Shell Petroleum Corp

"The event have provoked a new perspective of the inter-phase between operations, maintenance and engineering departments."

Nigerian National Petroleum

"It was indeed a very good opportunity to get some clarifications on maintenance misunderstanding concepts."

Oman Polypropylene

Benefits of attending:

- **Incorporating** RBI to minimise duration of downtime and shutdowns, ultimately generating increased cost savings
- **Leveraging** RBI as a systematic tool that would help users make informed business decisions with regards to inspection and maintenance expenses
- **Maintaining** on stream time due to less turnaround time and reduction in risk and failure
- **Minimising** maintenance expenses by ensuring a consistent development of traditional maintenance strategies
- **Investigating** high potential areas of improved productivity with specific RBI implementation methods to help minimise cost
- **Reducing** the rate and impact of unforeseen risks by discovering ways to overcome unexpected accidents or failures
- **Reengineering** an extended lifetime of old plants by up-scaling safety, reliability and availability through thorough inspections

marcus evans courses are thoroughly researched and structured to provide intense and intimate professional development applicable to your organisation. Benefits include:

- An in-depth tailored programme to address market concerns
- Pre-course questionnaires
- Diverse real life case examples
- Comprehensive course documentation

Pre-course questionnaire:

To ensure that you gain maximum benefit from this course, a detailed questionnaire will be sent to you to establish exactly where your needs lie. The completed forms will be analysed by the course leaders. As a result, we ensure the course is delivered at an appropriate level and that relevant issues will be addressed. The comprehensive course material will enable you to digest the subject matter in your own time.

Endorser



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Monday 24th May 2010

Incorporating RBI to improve plant integrity and optimisation

Session One

Focusing inspection efforts on the process equipment with the highest risk

- Highlighting importance of RBI in Asset Integrity Management
- Studying the background of risk and Risk Based Inspection (RBI) to shape a basic understanding of the RBI processes
- Understanding similarities and differences between different approaches in risk and reliability
- Comparing qualitative to quantitative risk assessments
- Identifying the size of the risk in an incident
- Developing a comprehensive grasp on risk in various industries and how we calculate it
- Coming to terms with the difference between RBI analysis and day-to-day inspection management

Exercise: Differentiating between risk, reliability and risk based inspection

Session Two

Reviewing project elements and data collection: Pin-pointing the key aspects within your organisation

- Conducting industry benchmarking and an inspection gap analysis
- Working together with regulatory compliance and industry codes and standards applicable to risk management
- Constructing, developing and harnessing the roles and responsibilities of project team members who implement RBI
- Adopting the elements that make up a successful RBI program
- Gaining knowledge on equipment data hierarchy, process streams, circuitisation, sub components, etc

Exercise: Identifying applicable industry codes and standards

Session Three

Scrutinising the planning process by developing preventive safety measures that suits your organisation

- Highlighting components that impact the development of RBI
- Designing and developing inspection throughout the full cycle of equipment
- Utilising the inspection tracking process and matrix
- Dealing with production volume and the effects of risk and RBI to this area
- Providing uniform adoption of performance standards: Key Performance Indicators (KPI's)
- Establishing a protective plan that works hand in hand with safety regulations
- Gauging and instilling preventive measures for potential threats within hazardous environments
- Constructing strategies to help prevent the occurrence of predicted and unpredicted failure modes

Exercise: Observing a basic set of tracking processes to understand potential areas of risk

Sessions Four

Recognising Consequence of Failure Analysis (COF) and dealing with hazards

- Confronting hazards and calculating Consequence of Failure (COF)
- Maintaining a working knowledge of data importance and approximations
- Knowing the different hazard scenarios that can occur within your organisation's operations
- Instilling various methodologies for calculating COF and using one that works for you

Exercise: Identifying mitigation strategies to lower the consequence of failure

Session Five

Screening Likelihood of Failure Analysis (LOF)

- Looking into damage mechanisms and calculating Likelihood of Failure (LOF) for your processes
- Creating a working knowledge of data importance for your LOF
- Knowing the description of metallurgy and corrosion mechanisms
- Damage mechanisms and what you need to know to combat failure
- Re-thinking the different methodologies that can be used for calculating LOF

Exercise: Discussing mitigation strategies that may impact the likelihood of failure

About your course facilitator:

Stephen Anderson CEO of APTECH Engineering Intertek US

Mr. Anderson is an accomplished trainer and manager who has been at the forefront of the development and implementation of mechanical integrity and risk based inspection programs. He has published many papers on the subject, and has been an invited speaker at numerous international conferences. This experience includes the inspection, condition assessment, fitness-for-service and remaining useful life evaluation of refinery and petrochemical equipment. Additional experience includes software development, corrosion control, metallurgical failure analysis, materials selection, materials testing, and the monitoring and analysis of vessel, topside equipment, pipelines and piping circuit corrosion data.

Mr. Anderson consulted for Shell, Huntsman, Samsung, Tesoro, Engen, BP, Eastman Chemicals, and Caltex in different refineries and process plants in Africa, the Middle East, Asia and North America. Currently, Mr. Anderson is the CEO of Intertek APTECH in Houston, Texas. Mr. Anderson has published and presented more than 10 papers in Asset Integrity Management, Risk Base Inspection and Engineered Safety.

Mr. Anderson holds a Bachelor of Science Degree in both Physics and Chemistry and a Masters Degree in Materials Science, all from the University of Cape Town, South Africa. He is a member of the National Association of Corrosion Engineers (NACE), the American Society of Mechanical Engineers (ASME), and the American Society for Metals (ASM).

Programme Schedule

Day One & Day Two

0830	Morning coffee & registration
0900	Morning session begins
1030	Morning refreshments and networking break
1100	Course commences
1245	Networking luncheon
1400	Afternoon session begins
1530	Afternoon refreshments and networking break
1600	Course re-commences
1730	Course concludes

About the Endorser

HKI (Himpunan Kimia Indonesia, Indonesian Chemical Society)

is a nonprofit, independent organization founded in February 1962 to facilitate communication among Indonesian chemists and related professions, and to promote the advancement of science, education, and application of chemistry to support the better life of mankind. HKI organize activities to enhance collaboration among chemists in various institutions, to disseminate new knowledge and research results in chemistry and related fields, to improve the knowledge and skills of chemists working in schools, universities, industries, research institutes, and other sectors, and other activities that support its missions.

marcus evans would like to thank everyone who has helped with the research and organisation of this event, particularly the course leaders, who have kindly committed and supported the event.

Tuesday 25th May 2010

Creating inspection and turnaround plans, measuring progress over time and driving improvements through maintenance audits

Session One

Benefiting inspection through reporting and risk management

- Using and understanding how to use the risk ranking results
- Reviewing how to mitigate risk within your processes and your organisation
- Finding the link on how operations, process, maintenance and inspection activities impact risk
- Generating unique plant reports: Tracking risk and inspection results
- Learning how to conduct a cost benefits analysis to support inspection and turnaround activities
- Knowing how to provide feedback to personnel and management

Exercise: Leveraging on unique risk drivers for topsides equipment, storage tanks and pipelines

Session Two

Resources deployment and damage mechanisms used to ensure smooth process of RBI implementation

- Virtualising the barriers to implementing an in-depth RBI program
- Pin-pointing priorities and critical equipment based on risk of failure
- Leading the way and motivating for change from conventional inspection methods
- Incorporating quality control of data input and output to assist in RBI implementation

Exercise: Developing inspection methods to assist in plant optimisation

Session Three

Upgrading inspection and turnaround planning through value added methodologies

- Weighing the difference between RBI analysis and day to day inspection program management
- Revolutionising the fundamentals of inspection and risk based turnaround planning
- Updating your inspection program: Evergreen process
- Understanding deficiency resolution: Defects and Fitness for Service evaluations
- Shaping short and long term inspection planning
- Dealing with the issue of how to prioritise inspection activities and the use of different NDE techniques

Exercise: Configuring an inspection plan for various piping circuits

Session Four

Prioritising audit / control in providing an efficient and streamlined approach to RBI

- Spearheading the important components of the management control structure in providing valuable performance data, management of change
- Understanding the importance of timelines and intervals
- Ensuring consistent and effective inspection techniques
- Exploring a structured risk based decision making processes
- Incorporating risk scores to highlight prioritised inspections
- Impact on operations and developing operating integrity windows

Exercise: Performing a gap analysis test and identifying control measures in maintenance

Professional In-House Courses

If you have a number of delegates with similar event needs, then you may wish to consider having a professional in-house course delivered locally on-site. Course can be tailored to specific requirements.

For further details, please use the contact information given on the last page of this brochure.

Why you cannot miss this event

This **Risk Based Inspection** course will address challenges in risk based assessment processes. It is mission critical to conduct Risk Based Inspection to ensure companies are making the right decisions in leading to increased productivity for their plant long term viability.

For seamless plant optimisation to take place, the organisation has to recognise the value of inspection. An organisation needs to find the underlying balance of inspection to avoid over inspection that may be uneconomic to compete in the market place or under inspection that causes constant replacement of equipments and machineries. By incorporating effective Risk Based Inspection, organisations will be able to improve plant safety and reliability by reducing risk in operating unit, eliminate unnecessary work, achieve full compliance with regulatory requirements and most importantly minimise cost of inspection and maintenance.

This two-day quality-driven course will revolutionise debate on real-life experiences and cultivate innovative solutions to reshape the quality of your Risk Based Inspection process. Delegates will value information in regard to high level design inspection, prioritising risk, plant intelligence, inspection tools, maintenance framework, integrity assurance program and data management to upscale standards in their organisation.

By attending this course, delegates will be able **strengthen their risk assessment when involved in plant maintenance through outstanding operations and proven techniques in Risk Based Inspection.**

Who should attend

Chiefs, VPs, General Managers, Managers, Directors, Heads, Team Leaders of:

- Inspection
- Process Engineering
- Safety Engineering & Loss Prevention
- HSE/ EHS
- Facilities
- Project Managers
- Maintenance & Reliability
- Process Control
- Technical Safety
- Operations
- Plant Managers

From:

- Oil & Gas (Refineries, Exploration)
- Energy/ Power Plants
- Mining and Minerals
- Utilities
- Any facilities that are dealing with high risk & reactive processes
- Petrochemicals/ Chemicals
- Steel
- Storage Terminals

About the Media Partners

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Argus is the world's leading independent source of energy price information and analysis, with nearly 40 years experience in international energy markets. Argus provides reliable pricing benchmarks as well as insightful analysis and targeted business intelligence for the global petroleum, LPG/NGL, natural gas, emissions, coal and transportation industries. For a full listing of Argus products and services, visit www.argusmediagroup.com