

RISK-BASED INSPECTION

By Ir. In Jumanda Kasdadi, MT.

OVERVIEW

Risk-based inspection (RBI) is the process of developing an inspection plan based on knowledge of the risk of failure of equipment.

This is the combination of an assessment of the likelihood (probability) of failure due to flaws, damage, deterioration or degradation with an assessment of the consequences of such failure.

With RBI, you can improve safety and potentially reduce costs by optimizing your inspection strategy to focus resources on high-risk areas.

By attending this course, participants will have a complete understanding of the RBI methods and knowledge to plan and carry out risk-based inspections.

COURSE CONTENTS

Introduction to Risk-Based Inspection

Risk & Inspection Terminology - Risk value, risk level, risk matrix, hazard, danger, failure, likelihood, consequence

Hierarchy of Hazard Control - Elimination, substitution, engineering control, administration, Personal Protection Equipment (PPE)

Understanding & Scope of RBI - Definition, purpose, and outcome of RBI, pressurized & non-pressurized equipment, uninspectable risk

Overview of RBI Code & Standard (API 580 & API 581)

Plant Database Source and Structure - Component of RBI datasheet, heading, plant condition, process flow diagram (PFD), piping and instrument diagram (P&ID)

Qualitative RBI Analysis Level 1 - Screening system analysis, likelihood category, damage consequence category

Likelihood of Failure and Methodology - Generic frequencies, equipment Modification Factor (F_E), Management Systems Evaluation Factor (F_M), adjusted failure frequency

Consequence of Failure and Methodology - Hole size failure, Flammable Consequence, Toxicity Consequence

Properties of the Base Resource Document (BRD) Representative

Fluids – Normal boiling point, Molecular weight, density, calculation, examination

Technical Modules Sub Factor (TMSF) - Thinning factor, Stress Corrosion Cracking (SCC) Factor, High Temperature Hydrogen Attack (HTHA) factor, the mechanical fatigue factor

RBI Analysis Level 2 - Semi-quantitative

RBI Analysis Level 3 - Full-quantitative

Development of Inspection Programs - Damage type, damage mechanism, inspection effectiveness, approach to inspection planning

Discussion, Case Studies, and Film

WHO SHOULD ATTEND

This Risk-Based Inspection is designed for all personnel involved in the operation, maintenance and inspection of production, drilling and processing facilities such as:

- Facilities inspection team members
- Maintenance technicians, supervisors, and engineers
- Oil and gas processing plant inspectors, supervisors and engineers
- Facilities engineers and supervisors
- Production operation supervisors and engineers
- Drilling supervisors and engineers
- Pipeline inspector, supervisors, and engineers
- Safety and HSE officers

ABOUT THE INSTRUCTOR

Ir. In Jumanda Kasdadi is an experienced instructor and he has been conducting training for oil and gas companies since 1997. He has BS and MS in chemical engineering degrees from the Institute Technology Bandung.

Companies that have received Mr. Kasdadi's inhouse training include Chevron, Pertamina Hulu Energi-ONWJ, ConocoPhillips, Total, Medco, Petrochina, Pertamina, Star Energy, and many others.

Ir. In Jumanda Kasdadi was involved in several Front-End Engineering Design (FEED) and Risk-Based Inspection projects.

For course registration and more information about the course, please visit lditraining.com or send your email to LDI Training at [HYPERLINK "mailto:lditrain@indo.net.id" lditrain@indo.net.id](mailto:lditrain@indo.net.id).

LDI Training Outline / RBI (Risk Based Inspection (IJK)