TRAINING PROGRAM ON

RISKED BASED INSPECTION (RBI) - Advance

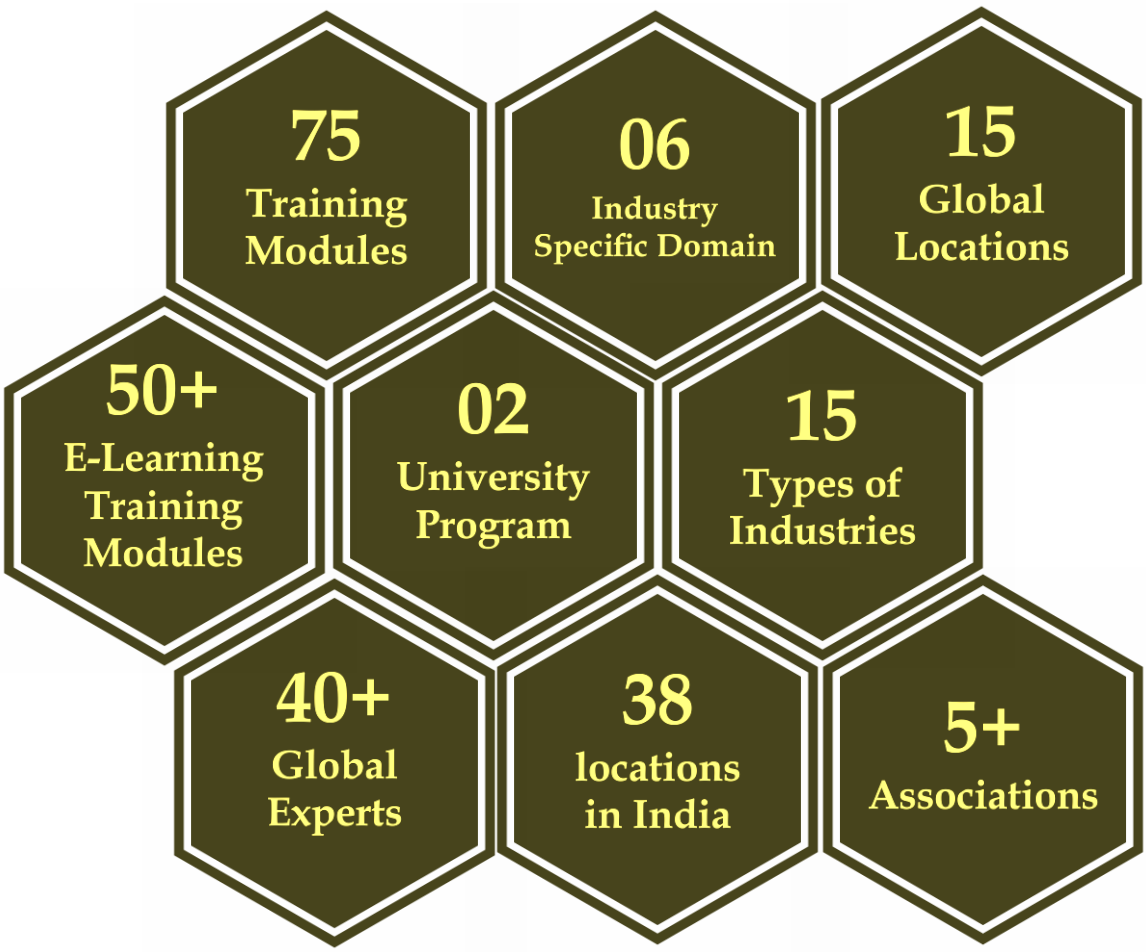
ABOUT ARRELIC TRAINING INSTITUTE

Arrelic Institute is focused to equip both industry professionals and college graduates with the skills and knowledge required for bridging the desire stare of workforce which industry needs to compete globally.

Arrelic Institute provides over 75 different type of customized training programs in the field of Reliability Engineering, Asset Management, Best Practice, Operation & Maintenance, Predictive Maintenance, NDT, Predictive Analytics, Quality, Risk & Safety.

Arrelic Institute conducts public trainings and workshops in 38 locations across India and 10+ International locations. We are working for large corporate house from 15 different types of industries ranging from Airlines, Automobiles, Cement, Defence Manufacturing, FMCG, Glass, Marine, Metals, Mining, Oil & Gas, Power, Pulp & Paper, Facility Management and Fertilizer.

ARRELIC INSTITUTE: AT A GLANCE



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ARRELIC AWARDS & RECOGNITIONS

NASSCOM®

TOP5

Won the Top 5 Startups in eastern India in Thieve 30 by NASSCOM

GLOBAL ENTREPRENEURSHIP SUMMIT INDIA 2017

Selected for GES – 2017, Hyderabad and showcased among top 100 Start-ups from India.

SMART FIFTY
50 Solutions to Transform India

TOP50

Emerged as one of the top 40 startups in #Smartfifty' – a search for solutions to transform India

PULSE THE VENTURE INSPIRING INNOVATION

Top 24 Start-ups selected over 1850 startups across India By CNBC.

NASSCOM® PRODUCT CONCLAVE

Selected for NPC – Bangalore and NPC – Kolkata for Product showcase.

TiE CON DELHI-NCR

Product showcased in TIECON – 2017 and selected through Govt. Of Odisha.

#startupindia

Startup India Recognize

Startup Odisha

STARTUP ODISHA recognised.

birac
Ignite Innovate Incubate

BIRAC finalist in SPARCH - 2017

web summit
LISBON, NOVEMBER 6-9, 2017

Selected for Web summit - Lisbon

hello tomorrow

Selected for Hello tomorrow, Paris Summit.

100 open startups

Selected and presented in 1000 open startups.

ABOUT THE TRAINING COURSE
RISKED BASED INSPECTION (RBI) - Advance

In today's highly competitive market In today's highly competitive market, RBI is becoming an accepted and dominant methodology to schedule fixed pressure equipment inspections. If done correctly, it can reduce the frequency of inspections while ensuring the risk does not increase. Conversely, it can shorten inspection frequencies should the risk necessitate it. It stands to reason, therefore, that those involved with the RBI process should possess some form of training and certification to prove their competency in RBI.

The aim of API 580 is to provide inspectors with the knowledge they need to be able to demonstrate expertise in the RBI techniques. The American Petroleum Institute (API) offers a certification program for individual in-service inspectors handling the in-service inspection of pressure vessels, pipework and storage tanks. API also manages an expansive catalogue of API "codes" which standardized practice.

Risk Based Inspection is a critical step in achieving and defining the audit. Under these conditions, the concerns for developing the best methods in this field are varied. Both at practical and theoretical lev-el, in auditing, but also in other activities, are numerous qualitative, semi-quantitative and quantitative methods which try to estimate individual components of risk for a result to better reflect the reality. However, in our days, there is now a universally accepted method, able to predict and assess all events and actions carry risks. In this paper are presented, with examples, the three main categories of risk evaluation methods (quantitative and semi-quantitative and qualitative) and how they can be applied in auditing, trying to identify the method that best meets the actual requirements of a specific mission.

LEARNING OBJECTIVES &
KEY BENEFITS OF ATTENDING THE WORKSHOP

By attending this technical training on **"Risked Based Inspection (RBI) - Advance"** delegates will be able learn and deliver the following things.

- ✓ **Understand methodologies that can be applied for repairable systems analysis**
- ✓ **Identify critical components (or failure modes) and determine the most effective ways to improve system availability**
- ✓ **Evaluate potential maintenance strategies and calculate optimum PM intervals and/or overhaul times**
- ✓ **Use simulation to obtain estimated performance metrics that can facilitate decision-making in a variety of areas, such as scheduling planned maintenance, planning for spares, identifying bottlenecks in production throughput and estimating life cycle costs**
- ✓ **Resource utilization**
- ✓ **Meeting the business demand by reducing outages caused by breakdowns and by reducing the loss of revenues caused by unavailability**
- ✓ **Appropriate maintenance scheduling by Understanding the financial implications of maintenance and Decision making based on modelling**
- ✓ **Facilitate the planning of developmental testing programs**
- ✓ **Track demonstrated reliability performance over the course of the testing**
- ✓ **Project anticipated reliability beyond observed testing**

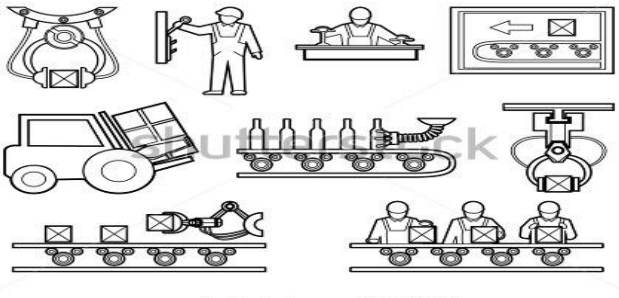
WHO SHOULD ATTEND ?

Successful risked based inspection programs require the disciplined application of proven processes and interdepartmental partnerships. It is important for departments that are influenced and impacted by the processes to understand the processes. People in the following roles should participate in this training:

- ✓ **Quality Managers**
- ✓ **Quality Engineers**
- ✓ **Lean practitioners**
- ✓ **Business Process Owners**
- ✓ **Process Improvement Managers**
- ✓ **System Implementers**
- ✓ **Management representatives**
- ✓ **System Coordinators**

INDUSTRIES THAT CONCERN ABOUT

LOW PRODUCTIVITY



Conventional use of time-based approach for maintenance does not take into consideration the way assets are being utilized, their current condition and real world operating conditions.

HIGH DOWNTIME

Failure to curb unplanned downtime and lack of control over value chain processes lead to high costs , inefficiencies and poor compliance. These severely impacts the profit and industrial growth.

INADEQUATE ASSESS CONTROL

Industries lack the ability to interpret assets data and because of unavailability of proper predictive methods they are unable to predict equipment failures which leads to unplanned downtime.

HIGH MAINTENANCE COST

Increased competition, pressure to grow revenue & profit , tighter regulations, scarcity of raw material, fluctuation demand and obsolete technologies have impacted the way industries are being operated.

COURSE OUTLINE

DAY – 1

RAM SYSTEM MODELING AND ANALYSIS
- ✓ Introduction

FAULT TREES AND RELIABILTY BLOCK DIAGRAMS (RBDs)
- ✓ Events and logic symbols
- ✓ Qualitative Analysis of Fault Trees
- ✓ Quantitative Analysis of Fault Trees
- ✓ Relationship between Fault trees and RBDs

REPAIRABLE SYSTEM ANALYSIS
- ✓ Background
- ✓ Power Law Model
- ✓ Goodness-of-Fit Tests
- ✓ Confidence Bounds
- ✓ Economic Life Model

RELIABILITY GROWTH MODELING
- ✓ Growth Planning Models
- ✓ Growth Planning Inputs

REVIEW & Q/A

DAY – 2

RAM ASSURANCE
- ✓ Introduction
- ✓ RAM Analysis Method

RELIABILITY DEMONSTRATION TESTING (RBT)
- ✓ Cumulative Binomial Test
- ✓ Non-Parametric Binomial Test
- ✓ Exponential Chi-Squared Test
- ✓ Non-Parametric Bayesian Test

RELIABILITY GROWTH PLANNING
- ✓ Continuous Reliability Growth Planning
- ✓ Discrete Reliability Growth Planning

RAM ANALYSIS
- ✓ Data Analysis Methodologies

REVIEW & Q/A

DAY – 3

PHYSICS OF FAILURE
- ✓ Introduction
- ✓ PoF Models
- ✓ Deterministic versus Empirical Models

FAILURE MECHANISMS
- ✓ Mechanism Types
- ✓ Methodology
- ✓ PoF based prognostic approach
- ✓ Fusion Approach

CASE STUDIES

POST ASSESSMENT

PROGRAM SCHEDULE

09:00 -10:30	Morning Session 1	13:30 -15:00	Afternoon Session 1
10:30 -11:00	Refreshments & Networking Break	15:00 -15:30	Refreshments & Networking Break
11:00 -12:30	Morning Session 2	15:30 -17:00	Afternoon Session 2
12:30 -13:30	Lunch	17:00 -17:30	Day review & Q/A