PREPARE RCA FOR BASIC INCIDENT & TAKE CORRECTIVE ACTIONS

MUE216
Mechanical & Utility Engineering

TRAINIT ACADEMY

COURSE TITLE

PREPARE RCA FOR BASIC INCIDENT & TAKE CORRECTIVE ACTIONS

COURSE DATE/VENUE

04 - 08 July, 2021

Istanbul, Turkey

COURSE REFERENCE

MUE216

COURSE DURATION

05 Days

DISCIPLINE

Mechanical & Utility Engineering

COURSE INTRODUCTION

The natural tendency of many individuals and organisations when presented with a prob lem is to jump to a solution, any solution. They do not systematically analyse the problem to determine a root cause before considering potential solutions.Reliability engineering and predictive maintenance have two major objectives: preventing catastrophic failures of critical plant production systems and avoiding deviations from acceptable performance levels that result in personal injury, environmental impact, capacity loss, or poor product quality.

COURSE OBJECTIVE

This course provides clarification of regulatory expectations and guidance,
and the Essential skills necessary to ensure effective and efficient investigations. Topic

s will examine each step of the investigation process from failure identification and notifi cation through documentation.

Participants will practice root cause analysis techniques and Identify corrective and/or pr eventive actions towards successful remediation.

At the end of this course you should be able to:

- Deal with the root causes of failures (Physical Roots and Human Roots.) in Industrial Activities.
- Know How the Multiple Roots Interact.
- Handle the General Analysis Techniques and the Root Cause Failure Analysis Methodology
- Carry out Troubleshooting (as an Extension of Failure Analysis) and to be acquainted with the Causes of Machinery Failures. How to analyze Machinery Component Failures
- Establishing Safe Operating Limits for Machinery and Regulatory Compliance Issues.
- Distinguish the Sources of Stresses, Overload failures, Understanding and Recognizing Corrosion and the available effects as well as the Lubrication and co relation with Wear.
- Understand the Interpretation of Collected Data through Vibration Analysis
- Formalize Failure Reporting as a Teaching Tool
- Communicate the "Seven-Cause Category Approach" to Root-Cause Failure Analysis

COURSE AUDIENCE

This course is designed for personnel who are responsible for the failure and deviation investigation process in a GMP (global process management) environment and maintenance engineers. This course will be practical in its application and particularly valuable to those newer to this field or those who wish to refresh their knowledge of root cause analysis and investigate techniques.

COURSE CONTENT

1. What is failure

- The Causes Of Failures
- The Purpose Of RCFA (Root Cause Failure Analysis)
- Effective Use Of The Analysis
- Personnel Requirements
- When To Use Of RCFA Method

2. Understanding the roots

- Physical Roots
- Human Roots
- Problem- Solving Process
- Define And Verify Root Causes
- Corrective Actions

3. RCA Techniques

- The Fault Tree Approach& Role of Fault Trees in a PRA
- The 5(five) whys
- Fault Tree Analysis
- Fault tree construction

4. Pareto Analysis

5. Fishbone Diagram

6. Human Error & Its Causes

7.Risk management

- Quantitative Risk (QRA)
- Qualitative Risk
- Performance measurement

8. RCM Principles and Methodology

- Reliability And Risk Prediction
- Achieving Reliability And Safety-Integrity
- Failure Rate And Mean Time Between Failures
- The Methodology

- The Reliability Prediction Method
- The RCM Task Selection
- Methods Of Modeling
- The RCM Implementation
- FMEA (Failure Mode And Effect Analysis)
- Safety Integrity Levels (SIL)

9. FAILURE REPORTING

- Collecting the Data
- Reporting Equipment Failures
- Reporting Software Problem

10.ANALYSIS

- Failure Analysis Process
- Failure Review Board
- Root Cause Analysis
- Failed Parts Procurement
- Corrective action

11.Maintenance management system

- Reactive Maintenance
- Preventive Maintenance
- Predictive Maintenance
- Proactive Maintenance
- Reliability Centered Maintenance
- Equipment Reliability Metrics
- Lateral Learning
- Learning From Failure
- Performance Monitoring

12. Preventive / Corrective Actions (CAPA) Guidelines

- Corrective Actions
- Preventive Actions
- Differences between Corrective and Preventive Actions
- CAPA Procedures (Report Source, Explanation of the Problem, Evidence of the Problem.)

- Evaluation (Potential Impact Assessment of Risk. Remedial Action.)
- Investigation (Objective, Procedure, Responsibility / Resources.).
- Analysis (Possible Causes / Data Collection, Results and Data, Root Cause Analysis)
- Action Plan.
- Action Implementation

COURSE CERTIFICATE

TRAINIT ACADEMY will award an internationally recognized certificate(s) for each delegate on completion of training.

COURSE FEES

$5,400 per Delegate. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

COURSE METHODOLOGY

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation, discussions, sector-specific case studies and exercises. Above all, the course leader will make extensive use of real-life case examples in which he has been personally involved. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions