Training Title

ROOT CAUSE FAILURE ANALYSIS

Training Duration

5 days

Training Venue and Dates

HS051	ROOT CAUSE FAILURE ANALYSIS	5	02 - 06 Sept. 2024	$5,500	Dubai, UAE

In any of the 4 or 5 star hotel. Exact venue will be informed later.

Training Fees

$5,500 per participant for Public Training. Fees Include Course Materials/Handouts, Tea/ Coffee, refreshments, and Lunch.

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

Training Overview

Root Cause Failure Analysis (RCFA) is a methodical approach used to identify the underlying causes of problems or failures. Its goal is to uncover the fundamental reasons behind an issue rather than just addressing the symptoms. By doing so, RCFA helps prevent recurrence, improves system reliability, and enhances overall performance. The process involves gathering data, defining the problem, analyzing potential causes, identifying the root cause, and implementing corrective actions.

Training Objectives

Provide the knowledge and skills necessary to facilitate and understand how to maximize the result of your RCA program.

Applying ROOT CAUSE ANALYSIS to solve all types of problems. you can investigate errors, defects, failures, losses, outages and incidents in a wide variety of industries

The course is designed to enable the candidate to work out an investigation and document the root cause of all the problems relating to equipment and human error and equipment failure that results in loss of productivity, accident and damage.

Topics covered

- Problem Definition.
- The cause & effect principle.
- Cause & effect charting
- Cause & effect charting (cont'd)

P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com

- Identifying solutions.
- Reality charting software.
- Gathering data
- Putting it all together

Who Should Attend?

This program is designed for Supervisors, Team Leaders, Engineers and Managers in Maintenance, Engineering and Production from all industries.

Training Methodology

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your questions and to share in the development of the right answers using your analysis and experiences. Tests of the multiple-choice type will be made available daily to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- **30% Lectures**
- **30% Workshops and work presentation**
- **20% Group Work& Practical Exercises**
- **20% Videos& General Discussions**

Daily Outline

Day1

1 Failure of Machines and Inspection Based Failure Analysis

Failure analysis tools
Failure Mode & Effects Analysis
Root Cause Analysis

2 Causes of Machinery Failure –

Industrial failure
Introduction
Wear mechanisms, fatigue, fretting, and corrosion and electrolytic.
Equipment, failure and maintenance data
Causes and implication
Hazards

Thermal and chemical stability data and hazardous effects of inadvertent mixing of different material

Day 2

P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com

General principles of root cause analysis

General process for performing and documenting an RCA-based Corrective Action

1. Define the problem.
2. Gather data/evidence.
3. Ask why and identify the true root cause associated with the defined problem.
4. Identify corrective action(s) that will prevent recurrence of the problem (your 100 year fix).
5. Identify effective solutions that prevent recurrence, are within your control, meet your goals and objectives and do not cause other problems.
6. Implement the recommendations.
7. Observe the recommended solutions to ensure effectiveness.
8. Variability Reduction methodology for problem solving and problem avoidance.

Day 3
Root cause analysis techniques

- desired.
- Failure mode and effects analysis
- Fault tree analysis
- 5 Whys
- Ishikawa diagram, also known as the fishbone diagram or cause-and-effect diagram. Pareto analysis
- RPR Problem Diagnosis -

Day 4
Basic elements of root cause

- Materials
  - Defective raw material
  - Wrong type for job
  - Lack of raw material
- Machine / Equipment
  - Incorrect tool selection
  - Poor maintenance or design
  - Poor equipment or tool placement
  - Defective equipment or tool
- Environment

P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com

  - Orderly workplace
  - Job design or layout of work
  - Surfaces poorly maintained
  - Physical demands of the task
  - Forces of nature
- Management
  - No or poor management involvement
  - Inattention to task
  - Task hazards not guarded properly
  - Other (horseplay, inattention....)
  - Stress demands
  - Lack of Process
- Methods
  - No or poor procedures
  - Practices are not the same as written procedures
  - Poor communication
- Management system
  - Training or education lacking
  - Poor employee involvement
  - Poor recognition of hazard
  - Previously identified hazards were not eliminated

Day 5

Condition Based Maintenance

Data collection
Assessment
Correcton action
Inform
Follow up
Root cause failure
Failure modes and effects analysis
Failure mode, effects, and criticality analysis (FMECA)

Pre & Post Tests will be conducted
Case Studies, Group Exercises, Group Discussions, Last Day Review &Assessments will be carried out.

.....

P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com