ROOT CAUSE FAILURE ANALYSIS

TRAINING TITLE

ROOT CAUSE FAILURE ANALYSIS

VENUE

Dubai, UAE

DURATION

5 Days

DATES

11 - 15 September 2022

PRICE

US$4,000 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch buffet.

TRAINING INTRODUCTION

The highly interactive Root Cause Failure Analysis program addresses a modern approach to problem solving in maintenance management. The program is based on some of the most recent research in the field. Participants will be enabled to improve the performance of their operation with practical, down-to-earth techniques that are based on first principles.

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.

TRAINING AUDIENCE

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

TRAINING 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

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
    - 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

Correction action

Inform

Follow up

Root cause failure

Failure modes and effects analysis

Failure mode, effects, and criticality analysis (FMECA)

How Root Cause Analysis Works

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course

METHODOLOGY

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of "real life" issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.