



ME166: Report Writing and Root Cause Analysis

Training Description:

This intensive course is divided into two part, the “report writing” and “root cause analysis”. Two days and half will discuss the report writing techniques and followed by the root cause analysis in another two days and half.

“Report Writing” there are many types and classifications of reports. Technical reports are very important for all factories, establishments and associations. Any problem needs a report to be discussed by concerning personnel to find the required solutions. Improvement and development are done through reports and suggestions. Purchasing accessories and new equipment is processing through reports. Writing a letter represents a report, whatever the contents included. Accusing a person, association or any group is done through reports. Therefore, almost, everywhere and every time, reports play important roles in our daily life.

“Root Cause Analysis”, this course presents a systematic approach to fault diagnosis and failure analysis in the process, manufacturing, power generation and mining industries. A highly effective root cause failure analysis (RCFA) method is explained in detail. The course will highlight two different approaches to fault investigation: One, addressing sporadic failures and two, solving inherent, chronic or recurring faults in equipment and systems. The course is based on the existence of three distinct levels of cause.

Training Objectives:

By the end of the training, participants will be able to learn:

- ✓ The different types of reports
- ✓ A general overview of the report nature
- ✓ Report organization
- ✓ Latest techniques in writing process of a report
- ✓ Gain an understanding of structured, results-oriented root cause failure analysis methods
- ✓ Learn how parts fail and why they fail in a given mode related to cause
- ✓ Approach the analysis of failures that happen either sporadically or chronically
- ✓ Learn how to set up failure analysis teams and gain a thorough understanding of the importance of failure or repair data collecting
- ✓ Gain an in-depth knowledge in applying statistical techniques in the analysis of available historical failure data enabling them to formulate maintenance and operating strategies
- ✓ Everyone will leave with several techniques that they could apply right away in their daily work of failure fighting

Training Designed for:

This course is intended for Operators, and maintenance groups, Electrical and mechanical technicians, engineers and supervisors, Instrumentation personnel, Management and head quarter departments. This practical advanced course is also designed for operating, manufacturing and equipment reliability professionals, supervisors and technicians involved in plant operating reliability and availability management.

Training Requirement:

“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

- ❖ PRE-TEST
- ❖ Introduction
- ❖ Quality of a good report
- ❖ Report organization
- ❖ Writing and proofreading and Report structure
- ❖ Nature of a report
 - Who is involved?
 - What is a report?
 - Where and when are reports used?
 - Why? And How?
 - Elements of a report
- ❖ Understanding technical reporting language
 - Language
 - The good report and the good reporter
 - Discussion-type presentation
 - Objectivity, Newness and Usefulness
- ❖ The writing process (preparation)
 - Preparation
 - Objective
 - Headers
 - Readers
- ❖ The writing process (research)
 - Practical Exercises, group work

DAY TWO:

- ❖ The writing process (organization)
 - Organization
 - Methods of development
 - Outlining, Examples and Format
- ❖ The writing process (writing a draft)
 - Writing a draft
 - Topic sentence
 - Writing paragraphs
- ❖ Exercises

DAY THREE:

- ❖ The writing process (revision)
- ❖ Glossary of business terms
- ❖ List of useful abbreviations
- ❖ **ROOT CAUSE ANALYSIS**
- ❖ Introduction & Abbreviations
- ❖ Maintenance Definition and Policies
 - What is the maintenance?
 - Maintenance Objectives
 - Maintenance Policies
 - Maintenance Management
- ❖ Key Elements for RCA & CREI Statement
 - Definition of a problem
 - How problems are communicated using the CREI statement
 - What are the types of problems
 - What is the problem solving methods
 - Process View of problems
- ❖ Essentials of Conducting RCA
 - The Student/Analyst
 - The RCFA Method
 - The Training
 - The Work Environment

DAY FOUR:

- ❖ Root Cause Analysis Techniques
 - General principles
 - General process for performing and documenting a RCA
 - Root cause analysis different techniques
- ❖ Levels of Causes
 - What is a RCA
 - Levels of RCA
- ❖ Some Points on Metrics
 - Importance of RCA
 - Strategy map
 - Asset Management Perspective (AMP)
 - Key Performance Indicator (KPI)
 - Mean-time-between failures (MTBF)
- ❖ Important Items on RCA
 - Availability
 - Reliability engineering
 - Key Performance Indicator (KPI)
 - Balanced score-card
 - The RCA work process

DAY FIVE:

- ❖ Techniques of RCA
 - 5-WHYS RCA
 - ISHIKAWA diagram
 - Failure mode and effect analysis
 - Fault tree analysis
- ❖ Pareto Chart
 - Introduction
 - Eight easy steps to creating the Pareto chart
- ❖ Case Study
 - Compressor surge
 - Pump cavitation
 - Shaft break of a single-stage, single volute, double suction centrifugal pump
- ❖ Course Conclusion
- ❖ POST-ASSESSMENT and EVALUATION

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:

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