

# **ENGINEERING STAFF COLLEGE OF INDIA**

Autonomous Organ of The Institution of Engineers (India) (IMS [ISO 9001:2015, ISO 14001:2015, ISO 50001:2018, ISO 45001:2018], ISO/IEC 17025:2017 Certified, AICTE & CEA Recognized Institution) Old Bombay Road, Gachibowli, Hyderabad – 500 032. Telangana, India



**Management and Technology Division** 

5 Day Workshop on

## Reliability Centered Maintenance (RCM) for Production and Maintenance Engineers (Excellence in Maintenance Execution) Dates: 18-22 December 2023 at ESCI Campus, Hyderabad

### **INTRODUCTION**

Reliability centered maintenance (RCM) is the process of finding the best possible maintenance strategy for every machinery in the organization. Reliability Centered Maintenance (RCM) is a customized maintenance process determined through the analysis of potential failure modes and its impact on system performance. Reliability centered maintenance encompasses reactive, preventive, and predictive (condition-based) maintenance as well as failure-finding processes to detect hidden or latent failure modes. The cardinal principle is that different equipment require different styles of maintenance management. Some demand continuous high-tech monitoring, while others are best left to the run-to-failure model. By studying cause and effect relationships along with the probability and outcome of each failure, maintenance tasks can be cost-effectively prioritized based on safety, security and the importance of each machinery to the overall operation.

A well-implemented Reliability-Centered Maintenance (RCM) program can bring the company a wide range of benefits. RCM primarily focusses on maintenance planning. It will ensure that systems and processes are operating effectively and efficiently. While root cause analysis uses cause and effect relationships to examine why a given failure occurred, RCM maintenance principles are based on understanding what is likely to happen if the cause of failure is known. The core benefits of implementing RCM in an organization are: Setting realistic expectations, providing insights into expected risks, improved relationships among stakeholders, Managing Environment, Health and Safety (EHS) risks and, overall cost reduction.

#### **OBJECTIVES**

The objective of the Workshop is to impart detailed exposure on RCM, its fundamentals and implementation strategies for effective maintenance of the plant machinery leading to overall cost reduction and reduced machine downtime.

#### COURSE COVERAGE

The following course content will be detailed during the training programme:

- Basics of Reliability Centered Maintenance (RCM)
- The importance of Reliability Centered Maintenance (RCM)
- RCM to improve Asset and Equipment Reliability
- Principles of FMEA and Failure Modes, Effects, & Criticality Analysis (FMECA)
- RCM Decision Diagram
- Strategies to Manage Failures
- Reliability-Centered and Other Maintenance Management Best Practices
- Lubrication schedules
- Spare parts management for continuous equipment functionality
- Life Cycle Management (LCM)
- Intentional overdesign and improved technologies
- Run to fail maintenance model
- Preventive maintenance
- Condition Based Maintenance / Predictive maintenance
- RCM Case studies

Computerized maintenance management

#### **METHODOLOGY**

Methodology of the programme includes class room Sessions with Lecture/discussion with audio visual aid, benched marked practices if any, video shows, Chalk & Talk sessions, group discussions, case studies, debates, sharing of experiences, etc. All the sessions will be interactive demanding active participation from all the members. Case Method of Instructions will be the main method of knowledge facilitation.

#### TARGET PARTICIPANTS

The Engineers, Managers and Executives involved with process, production and maintenance activities and working with military equipment manufacturing (Defense), Marine, Nuclear power, Steel manufacturing, Aviation, Pharmaceutical manufacturing, Fertilizers, Thermal power plants, Cement, Paper Mills, chemical and petro-chemical industries etc., finds this course very useful and helps them to implement best strategies to minimize maintenance costs.

#### EXPERT FACULTY

Mr. K. Krishna Murty

Formerly Head, Technical Training, Coromandel International Limited.

Author: "All In One of Manual of Industrial Piping Practice and Maintenance", Why Industrial Bearings fail?", by Industrial Press, New York, USA.

The faculty also consists of Eminent Experts from Process Industry, Manufacturers, and Service providers beside core faculty from ESCI.

#### PROGRAMME DIRECTOR

Dr. P.V.S.S. SRIDHAR, *M.E., Ph.D. (IIT-Guwahati)* Sr. Faculty & Head Management & Technology Division, Engineering Staff College of India Old Bombay Road, Gachibowli, Hyderabad - 500032 Mob: 7896172182 / Ph: 040-66304111/4112/4105 Email: <u>mtmkt@escihyd.org/mt@escihyd.org</u>

#### **PROGRAMME DATES & TIMINGS**

#### Dates: 18 – 22 December 2023

**Timings :** On the first day Registration will commence at **09:00 Hrs**. On all other days the programme timings will be from **09:45-17:15 Hrs** with breaks in between for tea and lunch.

<u>COURSE FEE:</u> Rs.25,000/- (Rupees Twenty Five Thousand only) per Participant + GST@18% Extra. Fee includes, course material, course kit, twin-sharing/single AC accommodation as per availability, breakfast, lunch, dinner, tea / coffee and snacks during the actual days of training programme.

**PAN Card No AAATT3439Q; GST No. 36AAATT3439Q1ZV**. **H.S. No. 999293** (Under commercial training or coaching services – clause 65(105) (ZZC) of Finance act – 1994).

Programme fee is to be paid in in favor of "THE INSTITUTION OF ENGINEERS (INDIA) – ENGINEERING STAFF COLLEGE OF INDIA" in the form of demand draft payable at Hyderabad. Alternatively, the payment may be made by Electronic Fund Transfer (EFT) to ESCI - SB A/c No.0432104000039631 with The IDBI Bank Ltd., Gachibowli Branch, Plot No. 2-53/2, JNIBF, IIIT Junction, Gachibowli, Hyderabad-500032 by RTG's/ NIFT / IFSC Code No: IBKL0000432. While using EFT method of payment, please ensure to communicate us your company name, our Invoice reference and programme title.

#### **CERTIFICATION**

A Certificate of participation will be awarded to each participant on conclusion of the programme.

#### **GENERAL INSTRUCTIONS:**

- ESCI encourages participants to present case studies from their respective organizations.
- ESCI provides complimentary accommodation and boarding to the participants one day before commencement (Check-in 1200 h) and one day after conclusion (Check-out 1200 h) of the programme duration. Overstay charges will be applicable as per ESCI rules (subject to availability of accommodation).
- Well-developed Information Centre and Internet facilities are available to the participants free of cost.