MAINTENANCE OF CENTRIFUGAL PUMPS

TRAINIT ACADEMY

MUE222
Mechanical & Utility Engineering

COURSE TITLE

MAINTENANCE OF CENTRIFUGAL PUMPS

COURSE DATE/VENUE

28 June – 02 July, 2021

London, UK

COURSE REFERENCE

MUE222

COURSE DURATION

05 Days

DISCIPLINE

Mechanical & Utility Engineering

COURSE INTRODUCTION

Centrifugal pumps are among the most used machines in the world as their various designs permit their use in a variety of applications. They are used in everything from washing machines, refrigerators, cars and trucks to construction sites, wastewater treatment facilities and food processing plants. Pump running with least troubles and consequent less downtime improves whole system reliability. Right selection & operation, effective maintenance & inspection programs, and skilled staff are essential factors for prolonged pump life. This course is intended to enable the participants to learn more about pumps maintenance to achieve this required understanding. During the course, participant's discussion, comments and own problems are welcomed and encouraged.

COURSE OBJECTIVE

- Carry out preventive, predictive and corrective maintenance on Pumps (centrifugal single & multi stage, screw & gear types).
- Review the different types of pumps

- Learn how to carry out preventive, predictive and corrective maintenance on centrifugal single & multi stage pumps
- Guide the participants to the right steps of pump selection
- Discuss the effect of cavitations in pumps.
- Be familiar with the right procedure for pinpointing & eliminating pump problems.
- Have an overview and checklist of pump problems

COURSE AUDIENCE

Maintenance Engineers, Equipment Supply Engineers, Reliability Engineers and Senior Technicians working with pumping systems should benefit from this course. Also senior staff can update and refresh their knowledge by attending this course.

COURSE CONTENT

DAY 1

1. INTRODUCTION TO PUMPS

- Basic pump theory
- General Requirements of Pump Safety
- Pump Performance Basic Terms
- Pumping Factors

DAY 2

2. CLASSIFICATION OF PUMPS

- Dynamic pumps

Centrifugal pumps

- Positive displacement pumps

Reciprocating pumps-- Rotary pumps

- Slurry Pumps Pump Glossary
- Pump Selection Chart
- Review and update pump data sheet.

DAY 3

3. PUMP AND MOTOR ALIGNMENT

- Introduction
- Types of misalignment
- Causes of Misalignment
- Alignment techniques
- Equipment alignment sequence

4. PUMP BEARINGS

- Introduction
- Bearing lubrication
- Bearing failure
- Bearing maintenance
- White metal bearing technology

DAY 4

5. PUMP MECHANICAL SEALS

- Mechanical shaft seals Vs. packing
- Operating principles and fundamentals,
- Seal design, nomenclature.
- Materials of construction.
- Reconditioning dry seals.

6. PUMP MAINTENANCE

- Overview of Maintenance Practice (Corrective – Preventive – Predictive - Proactive)
- Lubrication Overview
- Pump Maintenance Procedure (Daily- weekly- semi-annual- Annual)

DAY 5

7. FIELD PROCEDURES OF PUMP TROUBLESHOOTING

- Pre-repair Investigation

- Onsite Inspection ▪ Miscellaneous remedial steps

8. PUMP PROBLEMS

- Cavitation
- Check list for Centrifugal Pump Troubles
- Check list for Screw Pump Troubles
- Check list for Gear Pump Troubles

9. PUMP CASE STUDIES

- Videos on pump maintenance
- Group open discussion

COURSE CERTIFICATE

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

COURSE FEES

$6,150 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