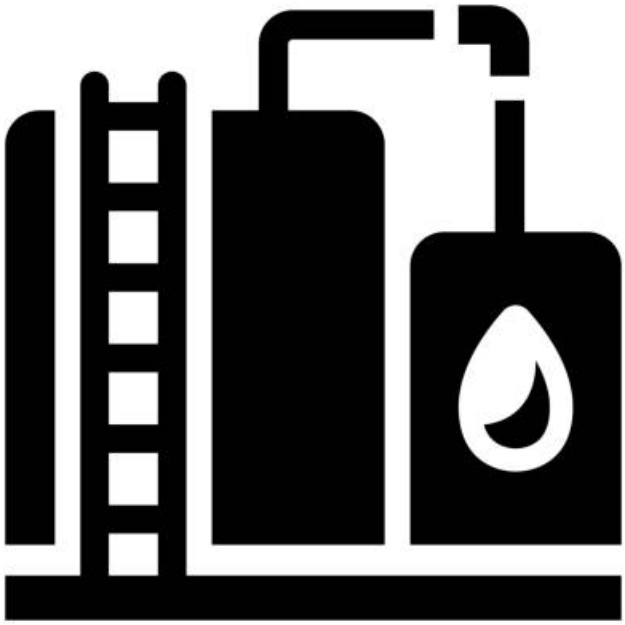
HDTC Training Center

Provide

Technical proposal of the Training program

Tank Farms Mechanical Preventive and Corrective Maintenance



Introduction

Tank farms serve as the critical backbone of oil and gas logistics and storage infrastructure. They house vast quantities of petroleum products, chemicals, and other essential fluids, and are composed of an intricate network of mechanical systems, piping, valves, and instrumentation. The continuous operation and safety of these tank farms are directly dependent on the integrity and reliability of their mechanical components. Failures or lapses in maintenance not only risk severe operational disruptions but also pose significant environmental, financial, and safety hazards.

In recognition of these high stakes, HDTC Group is proud to present an advanced, in-person training program on Tank Farms Mechanical Preventive and Corrective Maintenance. This comprehensive training is meticulously designed to equip engineers, technicians, and maintenance professionals in the oil and gas industry with the theoretical knowledge, practical methodologies, and industry best practices required to ensure the optimal performance and longevity of tank farm mechanical systems. The program emphasizes precision maintenance strategies, fault detection, structured inspections, failure diagnostics, and robust corrective techniques, all tailored to the unique operational environment of oil and gas tank farms.

Program Overview:

This five-day intensive training program, delivered in-person by HDTC Group, provides a thorough exploration of the mechanical systems used in tank farms, their failure modes, and proven approaches to preventive and corrective maintenance. The sessions are structured to blend technical theory with real-world applications and are facilitated by seasoned experts with decades of field experience. Participants will engage in high-level discussions, guided inspections, maintenance simulations, and case study analyses designed to maximize understanding and operational capability.

Program Objectives:

At the end of this training program, participants will be able to:

- Understand the mechanical architecture and critical components of tank farms.
- Implement industry-standard preventive maintenance schedules and protocols.
- Diagnose common and complex mechanical failures effectively.
- Execute corrective maintenance procedures aligned with international safety standards.
- Optimize maintenance operations to reduce downtime and extend equipment life.
- Apply risk-based inspection techniques for tank farm equipment.
- Integrate maintenance documentation, auditing, and reporting practices.

Program Outlines:

★ Day 1: Introduction to Tank Farms and Mechanical Systems

- Overview of tank farm operations and classifications
- Mechanical layout and system interdependencies
- Key equipment: storage tanks, piping, valves, pumps
- Standards and regulatory requirements (API, ASME, etc.)
- Common mechanical vulnerabilities in tank farms
- Safety considerations in mechanical maintenance

★ Day 2: Preventive Maintenance Strategies

- Principles and philosophies of preventive maintenance
- Maintenance planning and scheduling techniques
- Routine inspection checklists for mechanical components
- Lubrication management and wear control
- Predictive maintenance tools and technologies (vibration, thermography)
- Documentation and data logging practices

★ Day 3: Failure Modes and Corrective Maintenance Techniques

- Mechanical failure analysis: causes and classification
- Breakdown repair procedures for tanks, valves, and pumps
- Pipework maintenance and flange integrity
- Welding and mechanical repair standards
- Spare parts management and reliability considerations
- Case studies of failure and remediation

★ Day 4: Integrated Maintenance Systems and Diagnostics

- Condition monitoring methods for tank farm equipment
- Use of diagnostic tools and inspection instruments
- Root Cause Analysis (RCA) applications
- Computerized Maintenance Management Systems (CMMS)
- Reliability-centered maintenance (RCM) introduction
- Integration of HSE protocols in mechanical maintenance

★ Day 5: Practical Exercises and Applied Case Studies

- Workshop: Development of a tank farm maintenance plan
- Fault scenario simulations and response drills
- Maintenance audit checklist creation
- Analysis of real-world incidents and lessons learned
- Group discussion and problem-solving exercises
- Program wrap-up and participant feedback session

Conclusion:

The Tank Farms Mechanical Preventive and Corrective Maintenance program by HDTC Group is a cornerstone for developing excellence in mechanical maintenance practices within the oil and gas industry. By bridging theoretical frameworks with practical implementation, this training empowers professionals to safeguard the mechanical integrity of tank farms and enhance operational resilience. Participants will return to their facilities equipped with tools, strategies, and confidence to drive maintenance excellence and mitigate mechanical risk.

Target Audience:

- ✓ Mechanical and maintenance engineers
- ✓ Tank farm operators and supervisors
- ✓ Reliability and asset management personnel
- ✓ Technical inspectors
- ✓ Operations and maintenance planners
- ✓ HSE personnel involved in mechanical safety inspections

Program Requirements:

- ❖ Professional background in mechanical, operations, or maintenance engineering
- ❖ Basic understanding of industrial equipment and systems
- ❖ Active participation and engagement in all training activities

Program Methodology:

- ✓ Expert-led interactive lectures
- ✓ Illustrated presentations and technical diagrams
- ✓ Hands-on simulations and scenario-based workshops
- ✓ Real-life case study analysis
- ✓ Group work and technical problem-solving
- ✓ Daily reflection and Q&A sessions