Repair & Maintenance Of Reinforced Concrete Structure

Introduction:

Reinforced concrete structures are widely used in industrial sector special in oil and gas field for onshore. Therefore, the basis of design for concrete structure for strength, serviceability and robustness will be discussed in scope of codes concept. So ACI, BS, UBC and ASCE will be discussed in scope of practical wise to use the suitable design method to serve our business safety and operability. The objective of this course is to train engineers to be familiar with using American Concrete Institute Standard (ACI) and British standard (BS). The concept and basics of codes and standard will be introduced concerning the probability of failure specifically in ACI and BS. The course will cover the basis of design for retaining wall, liquid tanks, foundation under machines and foundation under steel tanks, separator, KOD. Moreover, the key steps in design and review design will be illustrated.

Who Should Attend?

Construction Engineers, Senior Construction Engineers, Construction Supervisors, Construction General Supervisors, Construction Project Managers, Engineering Technologists, Supervision Engineer, Inspection Engineers, Civil Inspectors, Foremen, Design Structural Engineers, Planners, Structural Engineers, Material Specialists, Quality Control and Quality

Assurance Experts, Architects, Supervision Engineers, Team Leaders, Site Officers and Managers, Mechanical Engineers, Technical Professionals, Field Production Supervisor, Operation Engineers, Clients Representatives.

Course Objectives:

By the end of this course delegates will be able to:

- Have an overview modern and effective procedures for the design for reinforced concrete structures in oil and gas industry
- Learn about reinforced concrete elements which use in oil and gas industry as pipe rack and ring beam under steel tanks in plant process
- Be able to increase the knowledge and assist in using new tools for designing and reviewing the design for new project or modify the existing one
- Know about the design of foundation under all types of vibrating equipment
- Discuss the design and review design the foundation
- Be provided with illustration of real design issues that may assist the designer to provide concrete structure that is safe, economical and constructible

Course Outline:

- Introduction
- The fundamental of concrete technology
- Basic concept of concrete design
- Main features for ACI and BS for concrete design
- Effect of different loads on the building
- Earthquake , wind load effect
- Loads affect pipe rack, static equipment and tanks foundations
- Principal, limitations for different codes in concrete (ACI, BS codes)
- Codes and standards Philosophy

- Principal of concrete design and precaution
- Different structure systems
- Different slab types
- The way to use the suitable structure system
- Design of slab, beam and columns
- Pipeline support design
- Checklist to review the design
- Soil investigation
- Shallow foundation design philosophy
- Pile foundation design philosophy
- Foundation under machines design
- Checklist to review foundation under rotating equipment
- Precaution in design foundation under vibrating machines
- Pipe rack configuration
- Pipe rack design
- Retaining walls design principals
- Load and forced in retaining walls
- Retaining walls design checks
- Design for reinforced concrete liquid tanks
- Structure system for concrete tanks
- Circular and rectangular tank
- Principal Design for ring beam for steel tanks
- Integrity and maintenance management system principal