Dynamic Analysis For RC Structures Under Dynamic Loading In Petroleum Industry Course

Venue Information

Venue: London UK

Place:

Start Date: 2026-03-03

End Date: 2026-03-07

Course Details

Net Fee: £4750.00

Duration: 1 Week

Category ID: CACETC

Course Code: CACETC-26

Syllabus

- ## Course Syllabus

Course Description

- In most industrial projects as petroleum industry in general and power generation and also refinery projects. There are many structures affecting by dynamic load due to machines or due to blast load. The design management procedure for industrial projects will be clarified. All the load that affect the structure building in oil and gas facilities will be illustrated.
- The principal of dynamic analysis will be discussed in detail. This course will focus also about the phenomena of blast load, the dynamic material strength, in addition to the concrete and steel structure design to resist the blast load. The dynamic analysis technique will be presented. In addition the new materials as CFRP to be used to protect the structure from the

will be discussed.
- The concrete and steel structure design principal will be illustrated to select the suitable structure system. The materials response and characteristics will be discussed in the course.

Course Objective

- Familiarize participants with the issues, standards, and procedures used to design structures that resist blast loads.
- Provide participants with in-depth knowledge of the principles of dynamic analysis.
- Develop basic competence in the use of available engineering methods for calculating blast loads and
- dynamic structural response.
- Provide an overview of the design approach used for typical construction materials (steel, concrete, masonry),
- Systems (shear walls and frames), non-structural components (doors and windows).

Course Outline

Day One:

- Design Management process
- Control the design of the industrial projects
- Define the load on the industrial structure
- BS and ACI code in design of concrete
- The dynamic loads behavior

Day Two:

- Foundation design principal
- Design foundation under power turbine
- Design of foundation under reciprocating equipment
- Reason for blast load
- Blast load effect and calculation
- Pressure Vs time Characteristic
- Load combination with blast load

Day Three:

- Joints ductility / response to blast loads
- Special detailing of Blast Resistant structures
- Fragment impact, positive/negative phase duration.
- Behavior of structural members / damages forecast .
- Progressive collapse Dynamic material strength
- Materials and structure element type.
- Dynamic materials

Day Four:

- Dynamic analysis method
- Design procedure
- SDOF procedure
- MDOF procedure
- Typical detail for the connection
- Upgrade existing building

Day Five:

- Upgrade existing building to blast resistance.
- Evaluation of existing structure.
- Construction precaution to achieve design requirement