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SC028:
Industrial Building Design:
Blast Resistance and Resilient for Oil & Gas Field

Training Description:

The design management procedure for industrial projects will be clarified. The design of the reinforced concrete tanks and the design of the foundation under steel tanks will be illustrated.

This course will focus about the phenomena of ballast load, the dynamic material strength, in addition to the concrete and steel structure design to resist the ballast load. The dynamic analysis technique will be presented. In addition, the new materials as CFRP to be used to protect the structure from the ballast load. The course content relies heavily on the recently revised ASCE publication, Design of Blast Resistant-Buildings in Petrochemical Facilities.

The concrete and steel structure design principal will be illustrated to select the suitable structure system. The foundation design under vibrating machine will be illustrated. Pipeline support and foundation under separator, KOD and steel tower will be highlight on its principal of design and how we can review and implement the design package.

The advanced inspection methods for fresh and hardened concrete will be discussed and how to implement maintenance plan for all the concrete structure.

The integrity management system procedure will be illustrated taking into consideration the major factors in design, construction and repair to maintain the concrete structure economically in all its lifetime

Training Objective:

By the end of the training, participants will be able to:

- ✓ Familiarize with the issues, standards, and procedures used to design structures that resist blast loads
- ✓ Gain an 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).

Training Program:

DAY ONE:

PRE-TEST

- ❖ Design Management process
- ❖ Control the design of the industrial projects
- ❖ Define the load on the industrial structure

- Blast load effect and calculation
- Pressure VS Time Characteristic

DAY TWO:

- Load combination with blast load
- Concrete and steel structure design to resist blast
- CFRP principal and design
- Doors and resistance specs to resist blast load
- Precaution in control room design

DAY THREE:

- Static and Dynamic analysis for blast load
- Fire proofing materials in case of fire
- Reinforced concrete tank design
- Design of steel tanks ring beam
- Pipeline support design

DAY FOUR:

- Design of foundation under machines
- Reinforced concrete wall design principal
- Design of pipeline anchor block
- Reasons of fails and cracks of concrete structure in industrial

DAY FIVE:

- Precaution in repair of concrete structure
- Construction precaution to achieve design requirement
- The inspection and monitoring procedure to control the construction

Course Conclusion
POST-TEST and EVALUATION

Training Requirements:

"Hands-on practical sessions, equipment and software will be applied during the course if required and as per the client's request".

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 30% Workshops & Work Presentations, Techniques
- 20% Based on Case Studies & Practical Exercises
- 20% Videos, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:
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Training & Career Development Department