Construction Quality Control On-site

14 - 18 May 2017
Dubai, United Arab Emirates

This course is Designed, Developed, and will be Delivered under ISO 29990:2010 Standards & ISO 9001:2015
**WHY CHOOSE THIS TRAINING COURSE?**

Structural engineers are encountering many problems due to the hot climate and the other environmental conditions. Quality control in construction of the reinforced concrete structure is a complete function which involves management, statistics and engineering.

This training course case study and practical sessions will be for oil and gas projects as most projects are time driven and need a high quality to maintain the sustainable facilities along the production field life.

In a hot climate, it needs more precaution in concrete industry and on the construction of the building to match with the requirement to this weather. All the examples and real case studies are for oil and gas projects.

In this training course, the focus is on using the statistics as a tool to control all the activities of the construction projects, especially the concrete product. The quality control of the concrete is illustrated in scope of the different codes and specifications. This training course will deliver a state-of-art methodology to control the concrete quality, introduces ways to control the specification recommendations in detail, and all the new modern the techniques and methodology used in concrete industry to enhance the concrete quality. The course will cover the main Quality Control concept for Shell specifications and other international oil and gas companies.

**This training course will feature:**

- Different codes and standards for Quality Control
- Quality control test (video presentation)
- Effects of quality in project sustainability
- Main skills and required knowledge for QC On Site
- QC procedure for concrete in a hot climate
- QC for steel structure activities

**WHAT ARE THE GOALS?**

By the end of this training course, participants will:

- Familiarise all quality management techniques and procedures
- Learn available non-destructive testing for concrete and steel structure projects
- Understand the practical tools to control the concrete and the whole project that includes field-testing and the required laboratory facilities
- Familiarise various techniques for evaluating the structures under construction
- Learn modern field measurements such as concrete strength
- Familiarise with all quality control techniques in hot climate

**WHO IS THIS TRAINING COURSE FOR?**

This training course is intended for structural and civil engineers responsible for the Quality Control and Quality Assurance, with the most recent non-destructive testing for concrete and steel structure.

This training course is also beneficial for Construction Engineers, Project Managers, Construction Managers, Quality Assurance and Quality Control professionals.

**HOW WILL THIS TRAINING COURSE BE PRESENTED?**

This training course will utilize a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented. The daily workshops will be highly interactive and participative. Videos and photos will be used for illustration.
Daily Topics

**DAY ONE**

**Competency Description:** As an engineer you need to know the main element of quality management system on site.

**Key behaviours:**
- Understand the approach of ISO9001 and its application in oil and gas projects
- Understand the practical QA & QC for different oil & gas companies
- Understand the hot climate precaution and definition

**Topics to be covered:**
- Total Quality management system
- Quality assurance
- Quality control
- Who will perform the quality control?
- Quality management constrain in oil and gas projects
- Pareto chart
- How to control the concrete from ready mix plant
- How to control concrete casting onsite
- Coefficient of variation
- Auditing the construction site quality
- Precaution in design mix in hot climate

**DAY TWO**

**Competency Description:** As an engineer you need to know the construction methods and ways of QC for main structure foundations and building in oil and gas plant.

**Key behaviours:**
- Understand the approach of codes for QC
- Understand the roles of the inspector onsite
- Understand the main element of concrete QC
- Understand the main element of steel structure QC
- Understand piping and pipeline construction

**Topics to be covered:**
- Codes recommendation for the quality control
- Codes and specifications limitations as ACI and BS
- Comparison on different non-destructive testing
- Construction ways in hot climate
- The nature of concrete variability
- Concrete materials properties
- Aggregate QC
- Cement QC
- Concrete mix QC
- Steel sections QC
- Check laminar and porosity in steel sections
- Example of QC of concrete foundations construction under vibrating machine

**DAY THREE**

**Competency Description:** As an engineer you need to know the ways of concrete QC onsite.

**Key behaviours:**
- Understand the concept of quality statistics
- Understand the hot climate effect on concrete mix
- Understand the QC for HSC
- Understand the characteristic of steel structure erection QC

**Topics to be covered:**
- Basic statistics
- Collecting a data for evaluations
- Statistics for the quality control data
- Evaluating the grade of the quality
- Concrete design mix
- Precaution in design mix in hot climate for remote area
- QC for fresh concrete
- Quality control for concrete forum
- Pouring concrete in hot climate
- Workability test for concreted
- Cube and cylinder test
- The replacement of the steel bars
- The permissible deviation in erection steel structure
- Material receiving, storage and preservation at site
- Interface between E & I, piping and structure in construction activities
DAY FOUR

**Competency Description:** As an engineer you need to know the NDT methods and the concrete durability.

**Key behaviours:**
- Understand the relation between QC onsite and design approach
- Understand the concrete NDT dynamic load characteristic
- Understand the relation between QC and concrete durability

**Topics to be covered:**
- Core test
- Rebound hammer
- Lok test
- Load test for floor deck under machine
- Ultrasonic test
- Corrosion phenomena affect quality
- Different corrosion protection system
- QC for corrosion protection system for oil and gas plant
- Wooden and steel from QC
- Steel reinforcing QC
- Procedure of QC onsite
- Case study for foundation in gas plant

DAY FIVE

**Competency Description:** As an engineer you need to know the ways of steel structure QC on site.

**Key behaviours:**
- Understand the welding procedure
- Understand the ways of QC for steel structure
- Understand the overview the differences between the NDE methods
- Relation between QC and IMS for oil and gas plant

**Topics to be covered:**
- Materials used in welding steel structure
- QC for Equipment preservation and installation for static equipment
- QC for tank construction
- QC for foundation construction and machine installation
- The precaution in welding process
- Anchor bolts QC
- The reasons of welding defects
- Overview of the 5 methods (PT, MP, RT, UT, VI)
- Integrity management system for oil and gas plants
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### Hotel Accommodation

Hotel accommodation is not included in the Registration Fee. A reduced corporate rate and a limited number of rooms are available for attendees wishing to stay at the hotel venue.

Please make your request for accommodation **at least 3 weeks** prior to the commencement of the course.

### Certification

A Certificate of Completion will only be awarded to those delegates who attend the entire course.

### Course Schedule

14 - 18 May 2017
Dubai, United Arab Emirates

### Registration Fees

US$ 4,500/- per participant

This fee is inclusive of Documentation, Lunch and Refreshments

### Mode of Payment

- [ ] Please invoice my company
- [ ] Please invoice me
- [ ] Cheque payable to “PetroKnowledge Limited”

### Ways to Register

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E: info@petroknowledge.com
W: www.petroknowledge.com

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Dubai, United Arab Emirates

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**PetroKnowledge Limited**
P. O. Box 135120
Abu Dhabi, U.A.E.

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**Disclaimer**

Circumstances beyond the control of PetroKnowledge may necessitate postponement, change of venue or substitution of the Instructor. As such, PetroKnowledge reserves the right to implement such amendments.