API 653ABOVE GROUND STORAGE TANK

(Certification Preparation Program)

Course Date:	To Be Determine with Benefeciary
Course Overview:	This is an intensive 10 days training course to provide a comprehensive understanding of the design, inspection and maintenance of Above ground storage Tank based on API 653 standards. It aims to provide the oil, gas and petrochemical industries with the assurance that Tank inspectors have been trained under this internationally recognized program to have the required knowledge and experience for inspection of in-service Storage Tank. Course participants aspiring to be certified by API will get well versed with the various code books and standards to be prepared for the API 653 examination.
Course Objectives:	The course provides participants with the knowledge necessary to: ✓ Successfully pass the API 653Above ground storage Tank Inspector certification exam ✓ Effectively use major codes: ASME B&PV & Sections V, IX &API 650 ✓ Perform all basic Tank calculations needed for the API exam (e.g. tmin, test pressure, MAWP, MDMT, corrosion rates, remaining life, etc.) ✓ Use API's requirements during inspection, repairs, and alterations of Storage Tank ✓ Review welding procedures (WPS/PQR) and welder performance qualifications (WPQ)
Who should attend?	The Course is designed for Storage Tank Inspection Engineers, Inspection Personnel, Operating Engineers, Managers, Maintenance Engineers and personnel involved in design, operation, inspection and maintenance of Storage tank. This course will also be beneficial to those who are preparing themselves for the API 653 certification examination.
Training Outline:	**DAY 1** 1) Welcome & Introduction 2) API 650 - Tank Fabrication Code Understand the following key concepts: □ Purpose & Scope of the Code □ Organization of the Code □ Key tank terminology □ Uniqueness of major tank components □ Qualification requirements specified by the Code □ Fabrication limits □ Inspection & Testing methods □ Tips on how to find needed information in the Code **DAY 2** 1) API 650 - Calculations & Charts □ Minimum Design Temperature □ Impact Testing Limits □ New Shell Thickness □ RT's of new Shell Welds

DAY 3
1) Review Homework from Day 1
2) API 653 - In-Service Tank Code Understand the following key concepts:
- Purpose of the Code
- Scope of the Code
- Inspection Types & Inspection Schedules
- Risked Based Inspection (RBI)
- Suitability for Service Evaluations

3) API 653 - Calculations & Charts Learn how to determine the following:
- Corrosion Averaging for a Shell Corroded Area
- Minimum Thickness of a Shell Corroded Area
- Minimum Thickness of a Shell Course
- Maximum Shell Pit Depth
- Minimum Bottom Thickness at Next Inspection

DAY 4
1) Review homework from Day 2
2) API 653 - In-Service Tank Code Understand the following key concepts:
- Types and results of Tank Settlement
- Brittle Fracture Evaluation for Existing Tanks
- Requirements and Limits of Bottom Repairs
- Requirements and Limits of Shell & Nozzle Repairs
- Requirements and Limits of Roof Repairs
- Design & Erection of Reconstructed Tanks
- Shell Hot-Tapping Limitations

DAY 5
1) API 653 - Calculations & Charts
Learn how to successfully determine the following:
- Shell Repairs - Weld Spacing Limits
- Bottom Repairs - Weld Spacing Limits

DAY 6
1) Review homework from Day 3
2) API 653 - In-Service Tank Code.
- Use of NDE for In-Service Tanks
- Hydrotest Requirements and Exemptions

DAY 7
1) ASME B&PV Section V - NDE.
- Purpose & Organization of the Code
- RT Techniques, RT Film Density Requirements
- Purpose & Selection of IQI's
- Key terms discussed in the Code
- Tips on how to find needed information in the Code

DAY 8
1) ASME B&PV Section IX - Welding Code:

	□ Purpose of the Code □ Roles of the Inspector □ Organization of the Code □ Welding Positions - Test and Field □ Testing Requirements and Acceptance Criteria □ Welder Qualification Process and Restrictions □ Weld Procedure Qualification Process and Restrictions 2) Review and Evaluate a WPQ (Welder Performance Qualification) □ Repairs, Alterations & Rerating □ Underground Piping 3) Review and Evaluate a WPS (Welding Procedure Specification) and the associated PQR (Procedure Qualification Record) **DAY 9** 1) Review homework from Day 5 2) API 651 - Tank Cathodic Protection (CP) □ Basic Parts of a Corrosion Cell □ Types of CP (with Advantages & Limitations) 3) API 652 - Tank Coatings □ Types of Coatings (with Advantages/Limitations) □ Causes of Lining Failure □ Coating Installation Requirements **DAY 10** Final Review Practice Exam □ Closed Book Exam similar to the API 653 Exam □ Open Book Exam similar to the API 653 Exam □ Evaluate one WPS/PQR
Training Methodology	**Work Shop**

Duration:10Days**Venue:**Jubail

Time:08:30 AM -05:30 PM **Numbers of hours: 80** Hours