



# Charisma Education Pvt. Ltd.

## Training on Welding Process, Quality Assurance, Inspection and Repair

Vadodara, India, 3 Days, Year 2023

Training on **Welding Process, Quality Assurance, Inspection & Repair** will be held in Vadodara organized by Charisma Education Pvt Ltd.

### Objective

This training program is designed to refresh the engineers for the Welding Process, Quality Assurance and Inspection as per ASME PV Code Sec IX and Inspection of the welded structures and systems for their evaluation of fitness-for-service. This course includes instructions on the relevant codes & standards.

This program is designed to train individuals who are interested in undertaking the supervision and inspection of welded construction, identifying defects and repair. This training will enable Welding Inspectors to inspect equipment and structures as per guidelines of ASME PV Code Welding Sec IX.

### Contents

This training program covers the following major topics:

#### Set 1 (6 hours)

#### Structural and Equipment Inspection, Detection of Defects & Damages

##### Module 1: Introduction to Structural Inspection, Manufacturing Inspections

- Inspection of Raw materials, Welding Consumables
- Welding Procedure for Carbon and Alloy Steels
- Non-destructive Test of Welds
- Developing Inspection Plans and procedures

##### Module 2: Manufacturing Quality Assurance & Defect Assessment

- Quality Assurance /Quality Control Requirements in fabrication and welding as per ASME Sec IX
- Welding Procedure Specification (WPS)
- Procedure Qualification Record (PQR)
- Welder Performance Qualification (WPQ)
- Manufacturing & Welding Defects
- Identifying Weld Defects:
  - Welding Geometry, Reinforcements
  - Root Penetration
  - Incomplete fusion
  - Cracks
  - Slag Inclusion
  - Porosity



## Set 2 (6 hours)

### Module 3: Main NDT methods and their application

- Liquid Penetrant Testing
  - Process
  - Benefits, Limitations
- Ultrasonic Testing
  - Process
  - Benefits, Limitations
- Radiography
  - Process
  - Benefits, Limitations
- PMI for material Identification

### Evaluation of Defects, Damages Damage Repairs

#### Module 4: Inspection of Welds

- Non- Intrusive Inspections of welds
  - External Visual Inspection
  - Thickness survey of structural components
  - Inspection for local defects and damages
    - Cracks
    - Sharp surface geometry
    - Internal Defects evaluation based on NDT Reports
    - Metallurgical deterioration

## Set 3 (6 hours)

### Module 5: Repairs of Defective Welds

- Identify Types of Repairs to be recommended
  - Temporary Repairs
  - Permanent Repairs
- Welded Repairs
  - Weld overlay repairs (recommended for smaller areas)
  - Reinforcement repair, local strengthening

### Module 6: Case Studies



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- Discussion on Case Histories on Failures of Structures, Special Inspection & Repair Techniques
  - Case of service load induced Cracking, Inspection, Recommended Repairs
  - Case histories of participants will be invited; scheme for inspection, design evaluation & recommended repairs will be discussed.

This training program shall prove useful for

1. Experienced Professionals who wish to brush up their knowledge and stay abreast with the latest in the industry.
2. Engineers and Technologists and fresher from varied technical background interested in learning more about Welding technology, Quality Assurance, Inspections and Evaluation of Weld Defects.

The seminar package includes

1. Comprehensive course material of 150+ pages for the training program to each participant & exposure to Welding QA and Inspection.
2. Lectures by renowned experts of 30+ years of experience in the Industry

Our clientele include Oman Refinery, Qatar Petroleum, Oman Gas, STS Oman, PDO, L&T, ABB, TCE, EIL, GAIL, IFFCO, GSFC, IOC, RELIANCE, LINDE, REAL, BHEL, TRANSPEK, ONGC, PRAJ, Technimont ICB, MECON, Chennai Petroleum, COMFORI, CapSource Malaysia, Pakris Energy Nigeria & many others who have benefited from program conducted regularly by us.

## **METHODOLOGY**

1. Technical Sessions
2. Problem Solving Sessions
3. Case Studies

## **DATE & TIME**

**Place-** Charisma Group Conference Room, Vadodara, India

**Date-** 3 Days, Year 2023

**Time:** 10.00 AM- 5.00 PM

## **VENUE**

Charisma Group Conference Room, 302 Sunsilver Apartment, Productivity Road, Vadodara

## **REGISTRATION**

### **The Registration fees:**

Indian participants: **Rs 48000** per delegate

Foreign Delegate: The Registration fees shall be **US \$ 600** per delegate or in equivalent Indian Rupees.

The fee may be sent to us in the form of a Cheque drawn in favour of **Charisma Education Pvt. Ltd.**, payable at Vadodara. Fee may also be transferred to out bank account with HDFC Bank in Vadodara. Details will be sent on request.

Request for registrations can be sent on the organization letter-head along with the fee as cheque or through bank transfer to CEPL Bank Account.

## **CONTACT:**

### **Charisma Education Pvt Ltd.**

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