

# € TRAINING

Design and Maintenance of Cathodic  
Protection System





# Design and Maintenance of Cathodic Protection System

## Introduction:

This training program focuses on equipping participants with essential skills and knowledge in designing, installing, and maintaining cathodic protection systems. Participants will learn principles, practices, and techniques necessary to prevent corrosion and ensure the integrity of metallic structures.

## Program Objectives:

By the end of this program, participants will:

- Understand the principles of cathodic protection and its application.
- Gain proficiency in designing cathodic protection systems.
- Learn techniques for installation and commissioning of cathodic protection equipment.
- Develop skills in monitoring and maintaining cathodic protection systems.
- Implement best practices for corrosion prevention and mitigation.

## Target Audience:

- Corrosion engineers and specialists.
- Pipeline engineers and operators.
- Maintenance technicians and inspectors.
- Facilities and asset managers.
- Professionals involved in infrastructure protection and maintenance.

## Program Outline:

### Unit 1:

#### Fundamentals of Cathodic Protection:

- Introduction to Corrosion and Corrosion Control.
- Principles of Cathodic Protection.
- Types of Cathodic Protection Systems Sacrificial vs. Impressed Current.

- Electrochemical Processes in Cathodic Protection.
- Standards and Regulations for Cathodic Protection.

## Unit 2:

### Designing Cathodic Protection Systems:

- Corrosion Risk Assessment and Site Survey.
- Design Criteria for Cathodic Protection Systems.
- Selection of Anodes and Cathodic Protection Materials.
- Electrical Isolation and Bonding Requirements.
- Design Considerations for Different Structures Pipelines, Tanks.

## Unit 3:

### Installation and Commissioning:

- Steps for Installation Techniques for Anodes and Monitoring Equipment.
- Commissioning Procedures and Initial Testing.
- System Calibration and Adjustment.
- Safety Considerations during Installation.
- Documentation and As-Built Drawings.

## Unit 4:

### Monitoring and Maintenance:

- Monitoring Methods and Techniques Potential Measurement, Current Interruption.
- Data Collection and Analysis.
- Troubleshooting and Diagnostics.
- Routine Maintenance Procedures.
- Assessment of Cathodic Protection Effectiveness.

## Unit 5:



## Best Practices in Cathodic Protection:

- Operational Best Practices.
- Continuous Improvement in Cathodic Protection Systems.
- Emerging Technologies in Corrosion Control.
- Case Studies on Successful Cathodic Protection Projects.
- Future Trends and Innovations in Corrosion Mitigation.