

“Physical Asset Integrity Series”

Material Selection and Corrosion Control in Oil and Gas Upstream



Dubai-UAE
Grand Millennium Business Bay Hotel
1st - 5th November 2020

Interactive Training
You will be attending training designed to share both the latest knowledge and Practical experience through interactive sessions. This will provide you with a deeper and more long-term understanding of your current issues.

PRINCIPAL COURSE LEADER

Dr. M.S. Parvizi, *FICorr, FIM3, CEng*



- 38 years of Materials Selection & Corrosion experience in the E&P and Downstream Sectors
- Authorized International NACE Instructor
- Senior Principal Materials Engineer in Mcdermott
- Regions of project experience: Europe, Asia, Middle East, Africa and Russia

Early Bird Registration
1st October 2020

Price/Person
AED 11,000/ USD 3,000

In Association With



Material Selection and Corrosion Control in Oil and Gas Upstream Course has been designed to improve knowledge, scientific and professional level of engineers. This course will be held over 5 days starting on Sunday 1st November, 2020 from 8:30 AM to 5:15 PM in Dubai, UAE.

A UNIQUE OPPORTUNITY FOR

- Corrosion and inspection engineers
- Process, Mechanical and Metallurgical Engineers,
- Integrity Managers
- Project Managers and Project Engineers
- All technologists who are involved with hydrocarbon production, processing, Safety and commissioning

COURSE DESCRIPTION

The purpose of this course is to provide the attendees with an overview of corrosion concerns in offshore upstream production of Oil & Gas industries. It aims to identify and examine corrosion, metallurgical and materials failures that can occur in any process and utility units within this industry. The attendees will have an opportunity to examine techniques and practices that can be used to control corrosion and enhance the integrity of the production plant. This course is designed for all disciplines engaged in the day to day operation of the plant. It includes, but not limited to, Corrosion and inspection engineers, Equipment, Process, Mechanical, Metallurgical Engineers, integrity managers, project engineers and all technologists who are involved with hydrocarbon production, processing, safety and commissioning. Management will also benefit by increasing their awareness of corrosion monitoring to maintain the plant in a safe mode. In addition, manufacturers of equipment, suppliers of materials to this industry and the procurement team engaged in the project will also benefit in attending this course.

LEARNING OBJECTIVES

- Develop a comprehensive understanding of Introduction to hydrocarbon production , Basic Corrosion , Types and Control measures, applicable to this industry
- Impact of corrosion and type of corrosion damage in oil and gas production
- Materials selection strategy and the types of materials used in petroleum industry by analysing the life cost approach.
- Types of standards used in oil and gas production industry
- Main types of corrosion and their perdition in petroleum industry covering
- Understand the failure mechanism imposed by sour service and the methods to tackle the failure by understanding NACE MR0175/ISO 15156
- Sweet and Atmospheric corrosion
- Water injection corrosion

- Materials selection and optimization in drilling, well completion, surface/topside facilities and pipelines
- Whole life cost analysis
- Corrosion mitigation methods i.e. Chemical injection, Coating, Cathodic Protection and design concerns
- Qualification methods of corrosion inhibition, biocide injection, scale inhibitor.
- Case histories and hands on exercises
- Describe techniques that can be utilised for mitigation of each mechanism of corrosion
- Identify and define the dominating categories of process and environmental related corrosion.
- Identify areas susceptible to failure.
- Identify and explain mechanical failure that may occur in equipment and utilise appropriate techniques for prevention.
- Identify the influential parameters in corrosion processes of each unit.
- Understand the most advanced Corrosion Monitoring Techniques

WHO SHOULD ATTEND?

- This course is designed for all disciplines engaged in the day to day operation of the plant. It includes, but not limited to:
- Corrosion and Inspection Engineers
- Equipment, Process, Mechanical, Metallurgical Engineers
- Integrity Managers
- Petroleum Engineers
- Project Managers and Project Engineers
- All technologists who are involved with hydrocarbon production, processing, safety and commissioning.
- Manufacturers and suppliers of equipment and materials



COURSE OUTLINE

Day 1 (1st November 2020)

- Assessment test of the attendees' knowledge of basic corrosion and materials engineering.
- Overview of exploration and production
- Fundamental and the key issues of corrosion
- Types of oilfield equipment
- Materials Classification and Materials of Construction used in Oil and gas plants.
- Types of oilfield corrosion mechanisms
- Sour service corrosion; mechanisms, types, the implications and means of design

Day 2 (2nd November 2020)

- The impact of corrosion on oil & gas industry
- Sweet (CO₂) corrosion: mechanism, types, parameters and the implications.
- Corrosion by Waters, Potable, Seawater, Brackish and Brine water.
- Corrosion by Soil
- Corrosion by Concrete
- Corrosion Prevention Techniques
- Erosion damage and interaction with corrosion and means of design.
- Downhole corrosion control and downhole completion concerns

Day 3 (3rd November 2020)

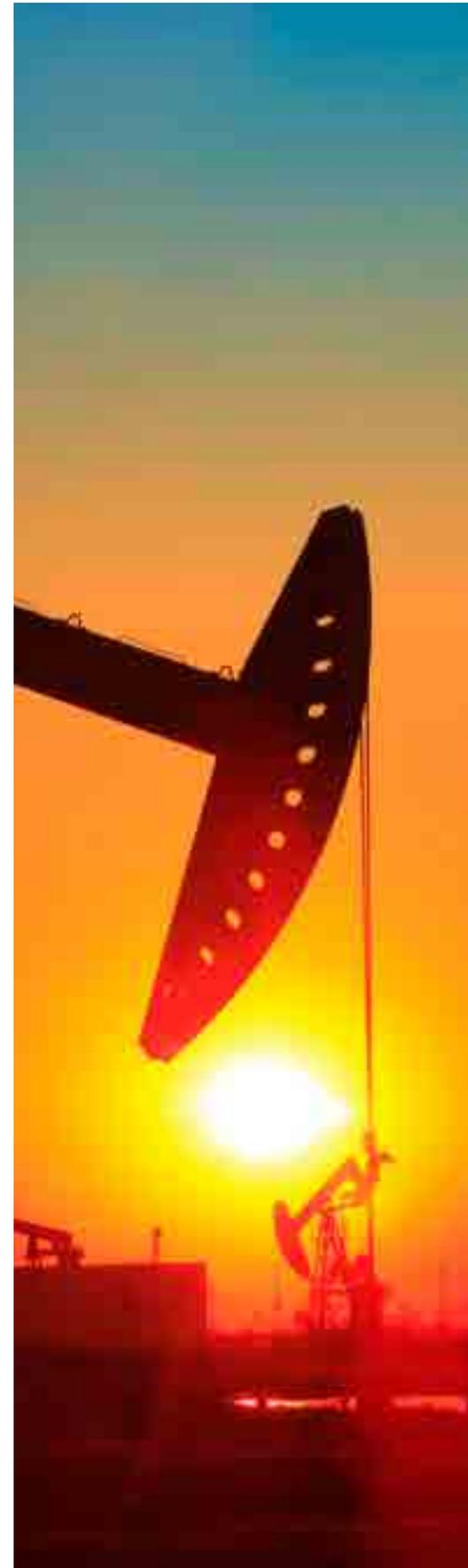
- Corrosivity evaluation, system corrosivity and predictive models
- Water chemistry (gas production and oil production), production conditions, and principal parameters affecting performance
- Key challenges in oilfield materials and corrosion.
- Corrosion Control Concerns on Oil, Gas, and Water Transmission Pipelines.
- Internal Corrosion protection philosophy
- Corrosion concern and protection techniques on oilfield jackets(platforms)

Day 4 (4th November 2020)

- Corrosion inhibition, principles, key parameters affecting performance
- Corrosion monitoring and inspection, principle types, considerations in using them and practical deployment methods
- Non-corrosion related failures

Day 5 (5th November 2020)

- Some case studies review on upstream Oil and Gas industries
- Corrosion testing, materials evaluation, inhibitor evaluation techniques.
- Role of Materials & Corrosion Engineer in phases of Project
- Corrosion Management Strategy and scope of interaction with Corrosion Engineer and other disciplines.
- Workshop, upstream project case studies.
- Discussion and exchange of ideas
- Final examination covering the main course contents taught





ABOUT YOUR PRINCIPAL COURSE LEADER

Sadegh Parvizi has over 38 years' experience in Oil, Gas, Refineries, Petrochemical, Power industries and Manufacturing Plants. His particular expertise includes materials evaluation as well as integrity management, remnant life assessment and implementation of corrosion control techniques in these industries. He has been actively engaged in investigating and advising on various technical problems, such as selection of materials, optimization of their use, plant failure investigation, Welding/ NDT review, CP design review, and technical advice on repair procedure, auditing, writing materials specification. He has been involved in technical clarification activities with the manufacturers on a numbers of projects. He has been involved in a large number of projects world-wide ranging from the conceptual stage to commissioning and production. He has played an important part in troubleshooting of some major production plants.

Sadegh Parvizi graduated from department of the Metallurgy and Materials Engineering at Sharif (ex-Aryamehr) University of Technology in Tehran in 1976. He has an MSC in Materials Engineering and a PhD and Postdoctoral degree in Materials Science and Technology from the University of Surrey, UK. His professional career has been sectioned into three distinctive areas as follows:

- **Research and Development:** Working in International Copper Research Association (INCRA), USA on alloy development projects, Electrical Research Association (ERA), UK on metallurgical behaviour of materials at high temperature. In British gas on the effect of natural gas contaminants on the material performance and leading the department of R&D in National Petrochemical Complexes (NPC) of Iran.
- **Oil & Gas Operating Companies:** British Gas, UK, ADMA-OPCO, UAE, Occidental Petroleum of Qatar and Consultant to Exxon Mobil for Chemical plants in Singapore.
- **Engineering Companies:** Working with major international Engineering companies such as Technip, Bechtel, and Foster-Wheeler and, at present, working for Mcdermott as a Senior Principal Materials Engineer.

Sadegh Parvizi is an active fellow member of the Institute of Materials, NACE International and Chartered Engineer. He is an approved instructor of NACE in Refining Industries. Dr.Parvizi has lectured on a number of occasions for researchers, engineers and operators. He has developed a dynamic mechanism on the interaction of different disciplines in projects set-up. He has published and presented a number of papers internationally and has been a key speaker at several Corrosion Conferences.

CAPITALISE ON DR.PARVIZI'S LEADING EXPERTISE TO

- **UPDATE** on the latest research and development of upstream material & corrosion
- **UNDERSTAND** and **LEARN** best practices developed and implemented by leading companies
- **IDENTIFY** and **MONITOR** the causes of corrosion and material failure
- **MITIGATE** internal and external corrosion
- **SPECIFY** cost effective materials for safe operation
- **LEARN** the latest subsea recommendations of EEMUA 194 **GAIN INSIGHTS** to new technologies like Tube



TERMS

PREREQUISITES FOR ATTENDING THE COURSE

- University Engineering Degree (e.g. Mechanical, Metallurgy, Chemical &..) is highly recommended.
- Sending the completed "Course Registration Form" by **1st October 2020**.
- Knowledge or background in the field of "Process Machinery and Maintenance" is highly recommended.
- Formal language of the course is English.

COURSE FEE / REGISTRATION

- Payment of **AED 11,000** (Equivalent to USD 3,000) to Pro Training LLC, Account Number: **101-10939113-01** (IBAN: **AE860260001011093911301**), Emirates NBD Bank, Jumeirah Branch P.O.BOX 11909, Swift Code: EBLIAEAD by **1st October 2020**.
- The above price does not include 5%VAT.
- Payments are required with registration and must be received prior to the course to guarantee your place.
- The regular registration period ends on **1st October 2020**. Afterwards, late "Registration Fee" of **AED1,000** will be charged.
- A certificate of successful completion of the course will be awarded to participants who attend and complete all course sessions and successfully pass the final exam of the course.
- The registration payment includes: Course Materials, Coffee Break & Lunch.

TERMS OF PAYMENT, CANCELLATION & REFUND

1. All payments must be received prior to course commencement. Payments are accepted in the form of bank cheque or bank transfer.
2. Cancellation requests by applicants should be in writing and received 30 days before commencement of the course and the fee to be refunded minus registration/administration cost of **AED 3,000**.
3. Cancellations must be made in writing. No refunds will be made for cancellations received less than 30 days before the start of the course.
4. Enrollment is not automatically cancelled if participant does not show up. A substitute participant may be nominated upon approval of PRO TRAINING.
5. PRO TRAINING reserves the right to withdraw or postpone a course if the number of participants is not sufficient, up to three weeks prior to the course starting date. If a course is cancelled by PRO TRAINING, you will receive notice by email or fax.
6. A full refund of paid registration fees will be given or can be transferred to another PRO TRAINING public course within 12 months (date of registration) of equal cost. Please keep our registration and cancellation policies in mind when arranging your travel as PRO TRAINING does not accept liability for any costs incurred for cancellation or change of travel or hotel reservations.