

*WebCorr Corrosion Consulting Services Presents*

# Corrosion Control and Prevention in Seawater Desalination Plants

Date: As published on website Venue: As published on website

## Course Overview

Seawater is known to be the most corrosive environment in nature. Many engineering materials used in seawater desalination plants worldwide including stainless steels and alloys are susceptible to various forms of corrosion such as crevice corrosion, pitting corrosion and stress corrosion cracking. This one-day corrosion short course aims to provide the participants with a thorough understanding of the causes of corrosion in seawater desalination systems and the state-of-the-art technology for corrosion control and prevention. Upon completion of this short course the participants will be able to identify different forms of corrosion, analyze the root causes of corrosion failures, apply appropriate methods and strategies for corrosion control and prevention in seawater desalination operations.

This corrosion short course is available for in-house training, online and distance learning worldwide. It can also be customized to meet the specific needs of your organization.

## Who Should Attend

Owners and operators of seawater desalination plants, corrosion practitioners, designers, engineers, technical managers, inspection and maintenance engineers, quality control personnel and those involved in failure analysis.

## Course Outline

1. Introduction to Seawater Desalination
  - 1.1 History of Seawater Desalination
  - 1.2 Overview of Seawater Desalination Processes
  - 1.3 Thermal Method of Desalination
    - 1.3.1 Multi-Stage Flash Distillation (MSF)
    - 1.3.2 Multi-Effect Distillation (MED)
  - 1.4 Membrane Method of Desalination
    - 1.4.1 Seawater Reverse Osmosis (SWRO)
    - 1.4.2 Electro-dialysis (ED)/Electrodialysis Reversal (EDR)
2. Corrosion: Basic Concepts and Terminology
3. The Corrosivity of Seawater



## 4. Corrosion in Seawater Desalination Plants

- 4.1 Overview of Corrosion in Desalination Plants Worldwide
- 4.2 Vapor Space Corrosion
- 4.3 Corrosion in Flash Chambers
- 4.4 Corrosion in Heat Exchangers
- 4.5 Corrosion in Distillate Systems
- 4.6 Corrosion in Ejectors and Ejector Condensers
- 4.7 Corrosion in Venting Systems
- 4.8 Corrosion in Pumps and Valves
- 4.9 Corrosion in Intake Systems
- 4.10 Corrosion in High Pressure Piping
- 4.11 Corrosion in Reverse Osmosis Plants

## 5. Case Studies of Corrosion Failures in Seawater Reverse Osmosis (SWRO) Plants

## 6. Corrosion Control and Prevention in Seawater Desalination Plants

- 6.1 Material Selection
  - 6.1.1 Plain Carbon and Low Alloy Steels
  - 6.1.2 Stainless Steels and Alloys
  - 6.1.3 Copper and Copper Alloys
  - 6.1.4 Nickel and Nickel Alloys
  - 6.1.5 Composite Materials
- 6.2 Design Against Corrosion
- 6.3 Control of Operations

## 7. Corrosion Monitoring in Seawater Desalination Plants

### Course Registration

Please register online at [www.corrosionclinic.com](http://www.corrosionclinic.com)  
Or use the form below (photocopies of this form may be used for multiple bookings).

Dr/Mr/Ms \_\_\_\_\_  
Organization \_\_\_\_\_  
\_\_\_\_\_  
Contact Person \_\_\_\_\_  
Contact Dept \_\_\_\_\_  
Telephone \_\_\_\_\_ Fax \_\_\_\_\_  
Email \_\_\_\_\_

Payment should be made by TT or online banking. Currencies in Australian Dollar, Canadian Dollar, US Dollar, Euro and Sterling Pound can be transferred directly without conversion. Our bank details can be found at the link below:

<https://www.corrosionclinic.com/payment.html>

### Course Fee and Discount

**Standard:** \$2500      **Discount:** \$2250

The fee includes a hardcopy of course note, certificate, light lunch, coffee breaks each day during the course.

Discount applies to a group of 3 or more persons from the same organization registering at the same time, or early-birds making payment at least 8 weeks before the course commencing date.

### Cancellation and Refunds

Cancellation or replacement should be conveyed to WebCorr in writing (email or fax). An administration charge of 50% of the course fee will be levied if the cancellation notice is received from 14 to 7 days before the course commencing date. No refund will be made for cancellation notice received 6 days and less. No refunds will be given for no-shows. Should WebCorr find it necessary to cancel a course, paid registrants will receive full refund. Refund of fees is the full extent of WebCorr's liability in these circumstances.



WebCorr has NACE certified Corrosion Specialist (#5047) providing customized in-house training, online and distance learning corrosion courses, corrosion seminars and workshops on corrosion, materials, metallurgy, paints and metallic coatings. Our corrosion courses are developed and taught by NACE certified Corrosion Specialist with over 30 years of practical experience in the field. Our training success is measured by your learning outcome.

