INTRODUCTION TO CORROSION RESISTANT ALLOYS

This course addresses the subject of corrosion resistant alloys (CRA). CRAs here mean any metallic material other than carbon and low alloy steel. CRAs are not immune from corrosion; they have sufficient resistance to specific environments to allow them to be used in those environments. These represent conditions that are so aggressive as to cause unacceptable corrosion to carbon steels.

Whilst most CRAs have much greater corrosion resistance than carbon steel in all environments they are susceptible to damage by corrosion and cracking mechanisms in some environments. Those environments are different for different types of CRAs.

This course will address some of the limitations on the uses of CRAs and problems that are encountered with them. However, this is a large and complex subject that ACME recommends that professional advice be obtained from experienced and competent materials engineers when CRAs are selected for any project.

CRA material selection: Many factors must be considered in the selection process for CRAs: Corrosion and cracking characteristics; limitations, strength, cost; galvanic effects, etc.

The course will cover:

- Anodic stress cracking of CRAs
- MR0175 limits for austenitic s/s
- MR0175 limits for duplex stainless steels
- MR0175 limits for nickel alloys
- NORSOK M-001
- Testing for sour service assurance
- Avoidance of SSCC
- Standards and Specifications

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