STRESS CORROSION CRACKING OF PIPELINES

Stress-corrosion cracking (SCC) is thought to be responsible for a pipeline failure every year, it continues to be a safety concern to pipeline operators and government regulatory agencies, and it must be addressed in integrity management plans.

This course will define what stress corrosion cracking (SCC) is - and it will discuss the current understanding of SCC as well as how to deal and manage this phenomenon.

Fundamentals on an SCC management program, design changes, codes regulations and recommended practices will be introduced.
While the subject matter is wide ranging, the learning objectives will be to underlying engineering principles in each aspect of SCC.

Why SCC is a problem?
Stress corrosion failure can happen “unexpectedly” and rapidly after a period of service leading to disastrous failure of structures or leaks in pipe.

Mechanisms of Pipeline Environmentally Assisted Cracking (EAC)

- Definition of SCC/environmentally assisted cracking (EAC)
- Failure distributions
- High-pH (Classical) SCC
- Low-pH (Near-neutral pH, non-classical) SCC
- Stages of cracking
- Three factors – tensile stress, corrosive environment, susceptible material
- Role of coatings and CP
- The latest thinking from SCC R&D
- Risk Management and SCC

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