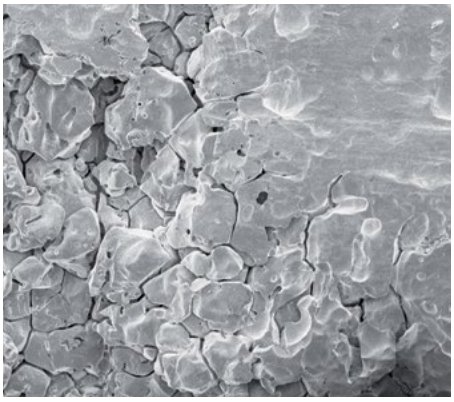
Quest Integrity™
A TEAM Company

Corrosion Consulting Services



Our solutions are built on over 30 years of industrial experience and research in materials degradation in aqueous, high temperature and severely corrosive environments. Our experienced corrosion engineers have a proven track record in infrastructure, thermal and geothermal power stations, oil and gas production facilities, refineries, and production facilities for ammonia, methanol and nitric acid.

Services and Expertise

- Corrosion consultancy for plant and equipment, from conception and design to end-of-life
- Asset management and risk assessment, including management of change
- Remaining life assessment to safely extend plant and equipment lifetimes
- Materials selection to maximize plant life-cycle value
- Solutions to problems, not just test results
- Risk-Based Assessment and implementation of Reliability Management System™ (RMS) software
- Failure investigation and root cause analysis
- Condition assessment through metallurgical and NDT techniques
- On-line, on-site corrosion monitoring
- Overhead conductor condition assessment and remaining life prediction
- Comprehensive corrosion testing facilities
- Expert witness and litigation support
- Research and development
- Corrosion training on damage mechanisms, corrosion monitoring and materials selection
- Corrosion chemistry modelling and prediction of corrosion rates
- Corrosion materials/process database of R&D results and collected literature

Quest Integrity offers comprehensive corrosion consulting services to maximize the reliable service life for plant and equipment.

Corrosion Management Planning

A corrosion management plan forms a critical element of the overall asset integrity management system. Quest Integrity has expertise in conducting failure mode and effect analysis (FMEA), corrosion inhibition reviews, and development of corrosion control documents and corrosion management plans for upstream and downstream operations. Our team can provide guidelines for the required mitigation practices, monitoring, inspection and maintenance activities to manage corrosion related threats.

Effective implementation of a corrosion management plan will allow potential challenges to the asset such as aging, changes in feed/product specification or operating conditions, to be properly mitigated. A corrosion management plan also provides a basic framework for review and audit of system performance and in the formulation of integrity operating windows (IOWs).

Condition Assessment and Root Cause Analysis

Critical assets, such as steam turbines, experience a range of damage mechanisms. Our team has the tools to determine the condition of equipment on-site in a manner that identifies precursors to failure, allowing targeted maintenance and life extension.

Understanding the cause of failure can help prevent future failures and avoid the costs encountered with unplanned shutdown. Our technical specialists investigate the modes of failures and their root causes and provide recommended solutions to prevent further failures.

Tools and Facilities

- Software based corrosion prediction models for aqueous and gaseous environments
- Corrosion rate database for CO2, H2S, sulfidic, naphthenic acid and HCl corrosion, metal dusting, cooling waters, atmospheric environments and soils.
- Equipment for on-site condition assessment and NDT tools
- Equipment for on-line monitoring for aqueous and high temperature corrosion
- Electrochemical testing laboratory
- Solids and erosion corrosion test facility
- Pressure vessel capability with CO2 and H2S
- Atmospheric corrosion test to ASTM standards
- Slow strain rate machine for stress corrosion cracking

Figure 1. Corrosion damage on geothermal steam turbine blades

Figure 2. Pitting and stress cracking on stainless steel

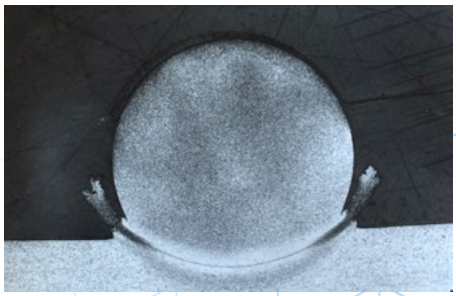


Figure 3. Weld spatter damage on parent material