



CorrMagnet Consulting Inc.



External Protective Coating and Cathodic Protection Evaluation

Expedition™

Expedition™ predicts external localized corrosion rate as well as external Stress-Corrosion Cracking (SCC) rates of carbon steel for oil and gas pipelines and facilities. Many leaks, ruptures and incidences are due to external localized pitting corrosion and SCC. Expedition™ helps oil and gas industry to minimize failures, ruptures and leaks due to external localized corrosion and SCC, and thereby leads to uninterrupted operation, cost savings, safe environments and enhanced corporate reputation.

Expedition™ Uniqueness

- ▶ Integrates data collected during the laboratory selection and qualification of coatings to project an early indication of the performance.
- ▶ Adopts and adjusts Corrosion Damage Mechanisms (CDM) and corrosion rates (projected from laboratory data) based on the field conditions and field operating conditions.
- ▶ Validates CDM and corrosion rates (from field operating conditions) based on field above-ground survey.
- ▶ Quantifies CDM and corrosion rates (from field above-ground survey) based on inline inspection (ILI).
- ▶ Verifies CDM and corrosion rates (from field above-ground survey or ILI) based on field below-ground inspection.
- ▶ Logically derives information from the available data, i.e., the user is not restricted due to unavailability of data in developing effective and economical integrity management program to control external corrosion and SCC.
- ▶ Provides the users the essence of 175+ standards in a user-friendly, cost-effective and prompt manner.



Expedition™ is the only software that predicts corrosion rates considering several Corrosion Damage Mechanisms (CDM) including localized pitting corrosion, stress-corrosion cracking (near neutral and high pH), narrow axial external corrosion, microbiologically influenced corrosion, corrosion under insulation and Alternate Corrosion (AC).

Expedition™ is the one stop solution for controlling external corrosion and external SCC.

Do you know:

- ▶ Good coating and Cathodic Protection (CP) combination can reduce external localized corrosion and SCC rate to less than 4 mpy (0.1 mm/y).
- ▶ Poor coating and CP combination can accelerate external localized corrosion and SCC rate to more than 40 mpy (1 mm/y).



Expedition™ Validation based on

- ▶ Laboratory evaluation of more than 30 types of coating using 20 different methodologies over a 20-year period.
- ▶ Field testing of 4 types of coating over a 4-year period.
- ▶ 40+ years of field data and ILI data from both oil transmission and gas transmission pipelines.

For more details

Web : www.stemcorrosion.com | Technical : office@corrsmagnet.com | Sales : info@interlaceindia.com

How can I benefit from Expedition™?

Laboratory Personnel

Expedition™ is an essential tool to enter, consolidate and collate the data generated in the laboratory; Expedition™ analyzes the data to project the coating life.

Design Engineers

- ▶ Expedition™ provides guidelines for route selection and coating selection based on the field operating conditions.
- ▶ Expedition™ optimizes the corrosion allowance of carbon steel based on the realistic localized pitting corrosion and stress-corrosion cracking rate.

Piggable Pipeline Operators

- ▶ Expedition™ integrates data from ILI with other data to enhance reliability.
- ▶ Expedition™ provides pitting corrosion rate and SCC rate from both model and ILI.
- ▶ Expedition™ helps to determine the ILI run frequency.

Non-Piggable Pipeline Operators

Expedition™ is useful in carrying out several integrity assessment activities including:

- ▶ NACE SP0502, "Pipeline External Corrosion Direct Assessment (ECDA) Methodology"
- ▶ NACE SP0204, "Stress-Corrosion Cracking Direct Assessment (SCCDA)"
- ▶ NACE SP0113, "Pipeline Integrity Method Selection"

