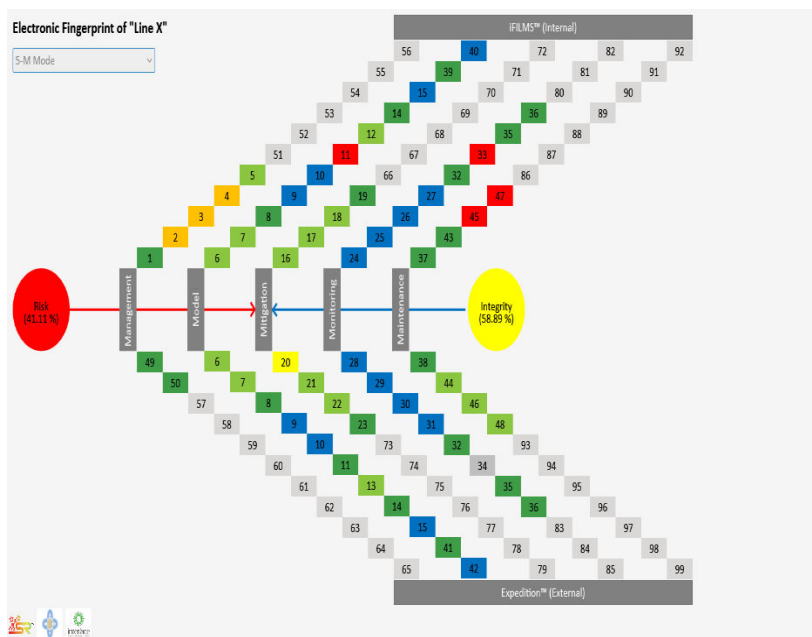


Fall 2020, October Edition: Newsletter 01

Pipeline Corrosion Electronic Fingerprint



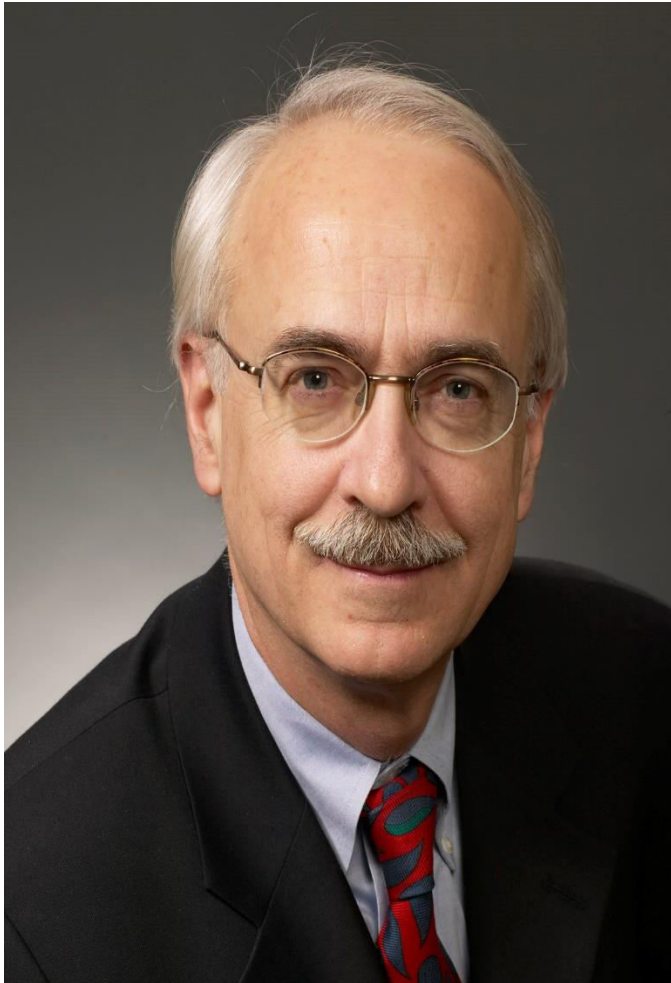
Pipeline Corrosion Electronic Fingerprint (PCEF) provides corrosion status of a pipeline; helps to coordinate various corrosion control activities; and performs cost-benefit-analysis (CBA).

Case study: PCEF analysis of an oil transmission pipeline indicated that the integrity of the pipeline is fair (Integrity score 59% and risk score 41%). The integrity of the pipeline can be improved by:

- Considering all corrosion damage mechanisms that take place in the pipeline (KPI 11)
- Developing unity plots of corrosion rates or percentage wall loss from ILI and model (KPI 33)
- Improving data collection, storage, and retrieval best practices (KPI 45, 47).

PCEF helped the company to decrease corrosion cost by 20% without increasing corrosion risk.

**Top Influencer of This Newsletter:
R. Winston Revie**



My Story

Looking back over the past 55 years, there are two areas that I studied that have gone from relative obscurity in the 1960s and 1970s to a major renaissance over the past few years: Corrosion of surgical implants and materials reliability in converting solar energy to thermal energy. Over 33 years (1978 – 2011) at the CANMET Materials Technology Laboratory in Ottawa, my research was almost exclusively on oil and gas pipelines. The unique, multifaceted pipeline program – where I was project leader/program manager for many years - was focused on R&D to enhance pipeline reliability, environmental protection, and public safety. Projects on corrosion led to products that were developed, and international standards that were written, as well as advice to the Minister and explanations to the public on pipeline reliability and safety.

Greatest Contribution

That is for others to judge, from their own perspective.

PS: The industry recognizes Winston Revie as instrumental for many initiatives – Founding trustee of the Canadian National Capital Section of NACE International, founding President of the NACE Foundation of Canada, and founder of the Banff Pipeline Workshop (BPW) to name a few. The biennial BPW – that Winston started in 1993 – brings industry personnel, regulators, service providers, researchers, and other stakeholders together to identify industry issues, and provides a platform to develop and deploy solutions.

Advice to Industry

To manage corrosion and to achieve the ultimate goal of zero incidents, my advice is:

1. To the extent possible, design corrosion out, using a combination of materials design and process design, including cathodic protection, inhibitors, and coatings.
2. Inspect for corrosion as frequently as necessary to detect corrosion before it becomes a major problem that results in leakage, contamination, or rupture.
3. Monitor corrosion.
4. Engage a corrosion specialist to:
 - a. Review designs, plans, and procedures for construction, operation, and maintenance, and
 - b. Assess data obtained from inspection and monitoring during operation