



Professional Services

Our pipeline integrity engineers and GIS professionals will support your integrity management program with a combination of expertise and proprietary software tools.

Risk Assessment

Quantify and qualify risk on your assets.

- Applicable to gas and/or liquid pipelines, facilities, and tanks.
- Qualitative and quantitative risk assessments per ASME B31.8S and API 1160.
- SCC susceptibility study, as part of the risk assessment or stand-alone.
- Determine PM&Ms based on risk assessment.

High Consequence Area (HCA) Analyses

Our GIS analysts use a verifiable, proven, and repeatable methodology to conduct HCA studies for both hazardous liquid and gas pipelines, as required by 49 CFR 192 and 195:

- **Hazardous Liquid HCA Analysis:** determination of a spill's ability to affect an HCA via direct, indirect, overland spread, direct watershed, indirect watershed, pool fire, and HVL dispersion per §195.450.
- **Gas HCA Analysis:** determination of a gas pipeline's consequence due to failure per §192.903 via Method 1: Class Location Analysis or Method 2: Calculating the Potential Impact Circle and identifying Identified Sites.

Gas Consequence Area Analyses (MCA & Class Location)

- **Moderate Consequence Area:** Analysis conducted per CFR §192.3 (new Mega Rule classification).
- **Class Location:** Identified per CFR §192.5.

Fitness-for-Service, ILI & Corrosion Growth Rate (CGR) Analysis

By leveraging CIM, ILI data can be efficiently ingested and aligned in minutes.

- **Vendor agnostic corrosion matching:** Pit-to-Pit alignment on 100% of the anomalies, regardless of the ILI service provider
- **Don't miss areas of accelerated growth:** Leverages machine learning and data science algorithms for greater matching accuracy and higher CGR resolution.
- **Regulatory reporting with ease:** CIM's embedded Power BI reporting provides a library of purpose-built CGR reports.

Crack Failure Pressure and Pressure Cycle Fatigue Analysis (PCFA)

Perform a comprehensive crack analysis that meets CFR §192.712(d) requirements.

- Calculate failure pressure using multiple models, including Raju-Newman, log-secant, MAT-8 and modified MAT-8 models.
- Calculate crack growth (and remaining life) for:
- Stress Corrosion Cracking (SCC) using fixed growth (linear) and half-life calculation.
- Cracks subject to fatigue growth using simplified fatigue analysis (SFA) and Pressure Cycle Fatigue Analysis (PCFA)
- PCFA provides full fatigue and remaining life analysis of cracks and crack-like flaws using rainflow counting of pipeline pressure data to determine pressure cycling behavior at crack locations.

Data Prediction using Machine Learning

Use machine learning to backfill integrity data gaps, e.g., install year, coating type, wall thickness, coating condition, etc., to utilize in a risk assessment.

Valve Studies

Perform valve placement studies for both gas and liquid pipelines per Code requirements.

- Gas pipelines: **Rupture Mitigation Valve (RMV)** study & risk analysis per CFR §192.935(c)
- Liquid pipelines: **Emergency Flow Restricting Device (EFRD)** study per CFR §195.452(i)(4)

Stray Current (AC & DC) and Lightning Interference Assessments

Analyze and risk-rank assets based on calculated threat from interference per CFR §192.473. Analysis based on recommendations from INGAA Criteria and CEPA A/C Interference Guidelines.

Compliance Services

- Regulatory plan creation i.e. O&M, IMP, etc
- Regulatory plan review, gap analysis, and updating, including a comprehensive Mega Rule review and update.
- Audit preparation.