IN-LINE INSPECTION (ILI) OPERATIONS SUPPORT

ILI safety audits during launching, running and receiving.

OVERVIEW

Operators have several options for integrity assessments of their pipelines include coating surveys, CIS, depth of cover, direct assessment, pressure testing, and in-line inspection (ILI).

Among all integrity assessment methods, ILI yields the highest discovery of anomalies and is the most cost-effective method on a per-mile basis. ILI is your best choice to meet your regulatory, safety, operational, and reliability demands. ENTRUST Solutions Group has a team of highly qualified and experienced engineers in multiple offices across North America who provide ILI support to pipeline integrity.

With decades of operational and project experience, our professionals provide expertise in pigging operations with utility pigs and ILI field operations of various technologies (MFL, hard spots, ultrasonic metal loss and crack detection, EMAT, deformation, and mapping), metallurgy, and GIS data integration. ENTRUST can assist through the life cycle of the inspection or perform specific tasks, including:

ILI FEASIBILITY STUDIES

- Review of flow rates, operating pressures, pressure drops, and capability to handle liquids.
- Engineering review of the pipeline design, including but not limited to P&ID reviews, technical characteristics such as steel grade, type of welds, length, internal diameter, and elevation profiles.
- Review of restrictions, bends, known ovalities, valves, and unbarred tees through which the ILI tool may need to negotiate should be identified per NACE SP0102-2010).
- Plan development for the use of temporary (or permanent launchers and receivers) to run utility pigs (cleaning and gauge) and caliper pigs.
- Mechanical analysis
- Hydraulic analysis
- Operational risk analysis
- Required modifications
- Modifications engineering design

PROJECT PLANNING AND SUPPORT

- ILI run management, supervision and resources
- ILI plan and procedures support
- Tool procurement
- Risk and threat assessments
- Scheduling
- Pre-inspection
- Pipeline cleaning method selection
- Potential debris sampling
- Post-run analysis
- Data quality assessment in the field and data acceptance
- Contingency planning
- Preliminary report evaluation and data analysis verification
- Immediate conditions and permitting
- Integrity dig management
- ILI verification and validation per API Std 1163
- Direct examination of anomalies including metallurgical analyses
- NDT results evaluation, repair determination, and repair/replacement decisions

ILI SAFETY AUDITS

- Revision of ILI procedures, work safety procedures, pipeline questionnaires, tool specifications, hazard assessments, and job safety analysis.
- Gap analysis on the operator's ILI procedure and comparison with 49 CFR Part 192/195, OSHA relevant regulations, SP0102-2017 (formerly NACE RP 0102), In-line Inspection of Pipelines, API Std 1163 In-line Inspection Systems
- Qualification, ANSI/ASNT ILI-PQ-2017 In-line Inspection Personnel Qualification and Certification, and relevant NTSB and PHMSA accident reports.
- Report with gaps that could present potential safety issues and concerns, recommendations to improve the procedures, and opinion on whether procedures comply with applicable internal operational qualifications documents.

ILI FAILURE INVESTIGATION AND ROOT CAUSE ANALYSIS

When an accident or an ILI is determined to be inconclusive or incomplete based on acceptance criteria, EN can perform a Root Cause Analysis (RCA) process to find the causes of the accident or the origin of substandard ILI data or failed ILI run. The root cause analysis process used by EN may employ different tools such as: Paretto chart, the 5 whys method, fishbone diagram, scatter plot diagrams, and the failure mode and effect analysis tool. After the completion of the RCA, EN will recommend corrective actions and proactive measures to prevent the problem from reoccurring in the future.