

Integrity Management for Pipeline Companies

The proper condition and safety of pipelines transporting gas, oil and fluids is an important goal for pipeline operators, not only considering the economic point of view. Legislative authorities as well as the public demand responsible actions when it comes to the safety of pipelines.

This requires the implementation of a rule-compliant pipeline integrity management process in terms of organizational, technical and information integrity. Knowledge and experience of employees, measurement data, inspections and technical documentations etc. are important elements for this process. In recent years, GEOMAGIC has been cooperating with pipeline operators on software modules that support the process of pipeline integrity management. These software modules collect and connect all relevant data and allow you to build a pipeline integrity management system.

Such a pipeline integrity management system enables pipeline operators to meet the integrity requirements of a transmission or distribution line:

- Maintaining high safety standards
- Operating pipelines efficiently
- Cost effectiveness in planning maintenance and repairs
- Preventing economic loss
- Preventing environmental damage
- Compliance with rules, regulations, industry standards

Assessing pipe condition

Various parameters are used to evaluate the condition of a pipeline or a pipe section. For an objective statement, a variety of available data must be collected from several sources. Then it must be structured. Assessing a pipeline or pipe section based on comprehensive data is possible with the software trascue. GEOMAGIC offers an out-of-the-box interface between trascue and GE Smallworld GIS: the PI Data Manager. Other geographic information systems can also be used.

trascue is a software solution family that consists of several components that provide a universal integration and presentation platform, but also deliver optional modules for assessment.

trascue is based on an architecture that allows pipeline operators to decide freely how to assess a pipeline. It is a flexible approach that enables staff to configure the assessment engine using e.g.:

- ASME B31G,
- FMEA / FMECA in accordance with DIN EN 60812,
- Probabilistic assessment according to DIN EN ISO 16708,
- Corrosion assessment,
- RSTRENG and
- Customer-specific assessment models.

trascue also allows the auditproof storage of documents, as the evaluation results can be stored encrypted. Thus, the software meets both in-house and regulatory requirements for auditable storage of assessment rules, input data and results.

Applying PHMSA rules and calculating MAOP

GEOMAGIC can help you being compliant to federal rules. Together with GE Grid Solutions we offer the MAOP Calculator, which is an Eclipse-based application for calculating MAOP values in accordance with 49 CFR 192 (US Code of Federal Regulations) for steel transmission pipelines for natural gas in a verifiable, traceable and complete method.

This calculator fundamentally integrates the calculation of the MAOP with your current GIS which allows for ease of reporting by creating a living analysis of the current and future system design.

The MAOP calculator also provides the following benefits:

- Out of the box reporting on line data
- Capability to compare assessment configurations and results
- Full ability to view results in band view diagrams, maps or input data tables
- Ability to track data origin
- Audit proof tracking of changes to data
- Full capability to edit and manipulate line data outside of the GTO environment to fill gaps, correct data or run what-if scenarios
- Versioning of line data to preserve snapshots in time

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