MFL Inspection

In this issue:

Technique

How it works

Why MFL

Technique

Magnetic Flux Leakage (MFL) inspection is a method of non-destructive testing (NDT) used to detect and assess corrosion, pitting and wall loss in lined and unlined metallic storage tanks and pipelines. A powerful magnet is used to magnetize the steel. In areas where there is corrosion or missing metal, the magnetic field “leaks” from the steel. MFL tools use sensors placed between the poles of the magnet to pinpoint the leakage field.

How it works?

In tank floor inspection, the floor of the tank is swept with the MFL tool. The area is flooded with magnetic flux and rare earth magnets are used to temporarily magnetize the steel while the magnetic field changes are recorded and analyzed. If the magnetic field is uniform, there are no flaws in the tank floor. If the magnetic field is distorted, internal or external flaws are present, such as pitting or corrosion and this distortion or "leakage" can be measured by the sensors.

Technicians proceed to mark areas that need to be verified by visual and ultrasonic inspections. The results obtained from the MFL inspection can be reported and used to establish an existing baseline for the equipment or to determine remaining wall and fit-for-service corrosion calculations in accordance with API, EEMUA and other applicable standards.

Why MFL?

- Rather than replacing plant assets, condition assessment using MFL and spot repair can often extend the life of a storage tank or pipeline.
- MFL inspection technology allows asset managers to proactively manage a tank or pipeline by repairing problematic locations.
- MFL Inspection reduces the risk of tank or pipeline failure.