Contact: info@applus.com

Storage Tank Inspection

Storage tank inspections cover both in- and out-of-service inspections of vertical and horizontal bulk storage tanks, both above and below ground. A combination of techniques is used to provide a comprehensive storage tank inspection, reporting on the overall condition of tank floors, shells, roofs and structures. The inspection reports include engineering calculations in accordance with API 653 and 650 and other relevant specifications.

Equipment and techniques used in storage tanks inspections include: floor scanning (MFL and SLOFEC™) – detection and measurement of corrosion; shell crawlers – ultrasonic assessment of shell plates; laser surveys (3D and conventional); LRPA (long-range ultrasonic phased array) – critical annular-to-shell-joint inspections with tanks remaining in service; and conventional NDT – ultrasonic, magnetic particle, vacuum box testing, etc.

THE Applus+ SOLUTION

Applus+ delivers comprehensive storage tank inspection and calibration services to operators of bulk storage tanks in accordance with API 653 and other relevant specifications. We have been a tank inspection specialist in the Asia Pacific region since 1991, completing in excess of 3,500 inspections without any safety incidents or lost time due to injuries.

Applus+ has a core team of specialist tank inspection personnel with wide experience in the field of storage tank testing and inspection. These personnel assists tank owners to optimize their inspection intervals based on detailed inspection data and the application of remaining life and RBI principles. The tank inspectors are supported up by a dedicated team of tank engineers who can provide specialist advice relating to all aspects of storage tank inspection, repair, modification, and maintenance. The engineering team also provides accredited tank calibration services, as well as specific engineering solutions and assessments.

Applus+ has developed proprietary software to calculate and assess all engineering and design parameters (including wind loading, roof frangibility, tank design pressure, etc.). We can also provide detailed design calculations for tank-modification works, including nozzle replacement or installation and the installation of wind girders; tank stress assessments for excessive settlement using finite element analysis; and data assessment (MDR review and matching, etc.) for return-to-service activities, as required by API standards.

In addition to tank calibration, Applus+ also has the capacity and resources to conduct tank-out-of-roundness and detailed profile surveys using advanced laser 3D mapping tools. The tank inspection team at Applus+ is continually researching supplementary and alternative techniques, often in conjunction with our Applications Centre.

Finally, we also provide storage tank floor inspections: small, previously untested zones close to the tank wall or to plate welds; testing under installations; heating pipes with diameters of only 130mm; plates up to 25mm(testable plate thickness depends on the scanner type); high-speed testing; testing through non-conductive coatings up to 15mm (testable coating thickness depends on the scanner type).

Target customers

Both the API 653 inspection code and industry standards state that all bulk storage tanks should be inspected at minimum intervals of 5 years for in-service (on-stream) inspection and 10 years for out-of-service (off-stream) inspection.

Key customer benefits

Benefits of conducting regular bulk storage tank inspections include:

- Maintaining statutory compliance
- Ensuring product containment
- Maintaining asset integrity
- Reducing maintenance costs
- Extending life-cycle
- Increasing the safety of operations
- Complying with industry best practice
- Lengthening the intervals between inspections
- Saving both time and money by combining inspection and calibration into a single activity