



STORAGE WITH ACCEPTABLE RISK



YOUR COMPETENT BUSINESS PARTNER FOR INSPECTION, VERIFICATION AND TESTING

Storage of large quantities of hazardous substances entails risk for the population, the environment and the surrounding area. Spills of hazardous substances into the soil can lead to expensive decontamination processes. Leakage from storage tanks containing oil, gas or chemicals can be caused by the influence of weather on the external surfaces and product type on internal surface or material can be affected by internal product flow & temperature variations. These situations could lead to a disaster. Periodic inspections, conducted in good time, can prevent such disasters from happening.

Head Office in Sydney, Australia, ARL is one of the leader and innovator in inspection, verification, testing and certification services.

Founded in 1996, ARL is recognised had achieved its benchmark in quality and integrity.

With 160 employees, ARL operates a network of 08 offices and laboratories around the world.

ARL Laboratory Services Pty. Ltd. Is a 100% Australian owned company and has associate companies in China, Malaysia, Abu Dhabi and Pakistan.

The core values of complete independence, transparency and integrity guide us in our mission to deliver first class services on a constant high quality level to customers around the world.

Partnering with ARL will guarantee access to unparalleled know-how and facilities. We eliminate uncertainty, enhance mutual confidence, and offer you the freedom to concentrate on the things that really matter: the growth of your core operations and the profitability of your enterprise.



STORAGE TANK INSPECTION & AUDIT

In order to assure your Storage Tanks compliance with Local Regulations as well as with the relevant Standards and Codes, ARL provides Technical Inspections & Audits according to API 650 or 653 or Clients' Specifications.

These Inspections include:

- ✚ Tank farm and foundation stability & settlements evaluation
- ✚ Tank bottom evaluation
- ✚ Tank shell evaluation
- ✚ Tank roof evaluation
- ✚ Tank access evaluation
- ✚ Tank security instruments check
- ✚ Tank environmental study
- ✚ Survey of repairs

ARL has the experience, Accreditations and equipment to carry out expert controls and inspections for owners of storage sites for hazardous substances and installations in all industrial sectors.

With the competence of a Notified Body, ARL performs independent assessment, testing and certification for storage tanks.

Besides periodic visual inspections, ARL is also a specialist in Non-Destructive Testing (NDT). By offering a complete range of Conventional NDT Techniques and Special Examinations, ARL is in the position

to provide not just a list of standard techniques but solutions using a combination of multiple techniques.

FULL SERVICE

- ✚ Periodic visual external and internal inspections
- ✚ Fugitive Emission and Leak Detection through Infrared Camera
- ✚ Mechanical Integrity Study
- ✚ NDT techniques
 - Traditional NDT techniques
 - Floorscan/Magnetic Flux Leakage
 - Corrosion Mapping
- ✚ Tracing of system leaks and determination of material strengths
- ✚ Hydrostatic pressure Tests
- ✚ Ultrasonic density tests
- ✚ Determination of water and sludge inside containers
- ✚ Determination of subsoil Corrosiveness
- ✚ Safety systems control
- ✚ External thickness Measurements and calculation reviews
- ✚ Adjustment and stamping of identification plates
- ✚ Welding procedures and Welding qualifications for Customary international Standards, including ASME, ISO15614 and DIN EN 287

- ✚ Project Management and Supervision of Construction
- ✚ Environmental Impact Studies and Risk Analysis

ARL also monitors safety procedures for cleaning or welding activities of Contractors during maintenance on-site.

This applies for facilities such as:

- ✚ Underground and aboveground flammable and hazardous product storage sites
- ✚ Storage tanks for compressed or liquefied gases

STANDARDS AND CODES

ARL inspects tanks for conformity with all international construction codes and standards, such as EN, API, BS, DIN and ASME.

RECOGNITION AND ACCREDITATIONS

- ✚ Accreditation according to ISO/IEC 17025
- ✚ NDT operators certified according to SNTC-1A standards
- ✚ Safety commitment in accordance with AS/NZS 4801
- ✚ Recognised Third Party



NON-DESTRUCTIVE TESTING

The storage of dangerous goods in tanks must be executed in a safe way. In order to reduce the economical as well as the environmental risks, a thorough knowledge of the tank condition, and in particular the tank bottom and shells, is of outmost importance.

With the knowledge and inspection experience of ARL, Non-Destructive Testing (NDT) services provide your installation with added quality, cost reduction, business security and improved safety, for both existing and new installations. NDT gives a clear insight into the risk of leakage or other safety critical defects, which increases the integrity and safety within the installation, and hence avoids undue operating expenses.

Non-Destructive Testing of Storage Tanks includes several methods of examining materials, components and connections in order to identify and quantify material defects and degradations.

Tank Bottom Inspection

For the inspection of tank bottoms, ARL offers you a quick and above

all reliable inspection by combining two techniques: Magnetic Flux Leakage (MFL) and Ultrasonic Testing (UT). By using these two techniques, corrosion is detected effectively (MFL) and reliably quantified (Phased Arrayed).

MFL is a detection technique, which detects volumetrically changes. A strong magnet induces a magnetic field in the material. On a corrosion spot, a leakage field will arise. The larger the corrosion the larger the field will be.

After the fast MFL inspection is done, the "suspicious" areas of the tank bottom surface will be quantified by the slow but more accurate Phased Arrayed.

Tank Shell Inspection

To assess the accurate wall thickness of tank shells we use a rugged remote access ultrasonic crawler. The equipment is designed to allow cost effective ultrasonic thickness measurement on above ground ferro-magnetic structures without the need for costly scaffolding or rope access.

The crawler system can be automatically or manually operated and transverses the tank shell either at equal distant points or 100% around the tank circumference.

The multi-axis robotic inspection arm is capable of taking ultrasonic measurements and transmitting the wall thickness and A- and C-Scan inspection data in real time to the operator's remote panel.

Different colours will visualise degradation levels and concentrations of corrosion during the scan and later in the report.

Special Leak Testing

Leaks in installations or vessels can cause environmental pollution and waste of expensive fuel and energy. Therefore, Leak Testing is performed to locate leaks and measure the leakage of pressurised (or decompressed) test products.

ARL performs the following Leak Test methods:

- ⚡ Ammonia Leak Test
- ⚡ Helium Leak Test
- ⚡ Bubble Leak Test

TANK CALIBRATION

Reliable quantity measurement is the critical basis of good contractual relationships in worldwide trading of chemicals, petroleum products and liquefied gases.

This can only be assured by accurate and regular calibration.

When you need to be sure of your tank calibration results, ARL has the leading solution. ARL innovative laser-calibration measurement technology helps companies to reduce time and costs of tank management, as well as offering precise storage tank.

Our motorised laser technology and specialist software deliver results that are accurate, fast and safe to cost efficient management for Storage Tanks, Gas Vessels and Stockpile Measurements.

Not just volumes, but accurate roundness surveys, tank tilt & settlement and other construction measurements are straight forward.

What is the precise capacity of your tank? The difference can

mean thousands of dollars to your business. ARL approach will replace the traditional 2-day turnaround with increased accuracy.

Features include:

- ✚ Tank floor volume measurement.
- ✚ Automated level measurement to minimise human errors
- ✚ Faster & Reliable results
- ✚ Reduce down-time on your plant operations

The combination of accurate, fast and comprehensive calibration results helps companies to drive cost-efficiencies.

Our calibration engineers use then measurements to deliver comprehensive results, so you can:

- ✚ Gain a more accurate picture of the current dimensions and state of your bulk storage containers
- ✚ See a visual guide to the condition of your plant using our 3D mapping of the results

- ✚ Enable long-term management of maintenance using trend analysis of historical results

ARL offers you a full-service approach, and provides regular measurement to reduce the total plant cost of ownership, and to calibration to ISO7504.

- ✚ Deliver volumes with calibrated and measured confidence over time
- ✚ Calibrate to constantly be within agreed limits
- ✚ Use our 3D modelling of tank floor and shell to plan future floor levelling and floating roofs installation
- ✚ Have 24/7 access to your data

When you use one of our highly trained and professional calibration engineers, you are tapping into the ARL global network of the world's leading inspection, verification, testing and certification company. You will find our calibration experts have the years of experience needed to manage a wide range of measurement situations.

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