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Radiographic Testing (RT)

What is radiographic testing (RT)?

Radiographic testing (RT) is one of the most essential volumetric non-destructive testing (NDT) methods used in industry. It allows the detection of internal flaws using either X-rays or gamma radiation, generated from a tube or isotopes such as Iridium-192, Selenium-75, or Cobalt-60. RT techniques include film radiography, computed radiography (CR), direct radiography (DR), real-time radiography (RTR), and computed tomography (CT). These methods can penetrate materials of varying densities to assess weld quality, identify corrosion or erosion, evaluate castings for defects or foreign objects, and detect damage in composite materials—without compromising the component.

THE Applus+ SOLUTION

Applus+ radiographic testing capabilities

Applus+ is a world-leading authority in **radiographic testing services**, offering reliable inspection techniques to detect imperfections in materials across industrial operations. RT supports the evaluation of production assets and equipment in demanding sectors like oil and gas, where detecting issues early is vital for safety and efficiency.

Applus+ also leads in advanced technology, with dedicated RandD laboratories, global reach, and collaboration with industry experts. We have developed the proprietary **Rayscan System**, a real-time digital radiographic inspection tool capable of scanning a full production pipe in a single rotation. This technology also enables **Rayscan Tankscan**, which inspects LNG storage-tank welds in one scan, producing high-quality images while reducing inspection time.

Applus+

Target customers

Industries and applications for radiographic testing

Radiographic testing is widely applied in both new construction and in-service asset evaluation. Whether using film or digital techniques, RT verifies weld quality and helps profile piping systems to detect internal flaws, corrosion under insulation (CUI), flow-accelerated corrosion (FAC), or remaining wall thickness.

Applus+ provides **radiographic inspection services** across multiple sectors and applications, including:

- Petrochemical
- Nuclear
- Fossil
- Chemical
- Military
- Aerospace
- Foundries
- New construction
- Post-construction
- Corrosion monitoring
- LNG fabrication

As a time-tested provider, Applus+ delivers consistent and trusted **radiographic testing services** globally.

Key customer benefits

Key benefits of digital radiographic testing

Digital RT techniques from Applus+ offer a wide range of operational advantages:

- Direct results after on-site scanning
- Wide dynamic range for improved flaw visibility
- Radiation dose reduction (up to 90% in some cases)
- No chemicals or darkroom required
- Advanced image processing tools
- Digital archiving, reporting, and data sharing
- Fewer re-shoots, improving efficiency
- Higher probability of flaw detection

Advantages of Rayscan and Tankscan systems

Compared to conventional film radiography, our **Rayscan/Tankscan real-time digital RT solutions** provide:

- Cost-efficiency with no consumables
- Short inspection cycles:
  - High-speed scanning
  - Zero development time
  - Immediate image interpretation
- Equal or better image quality compared to film
- Improved safety:
  - Lower radiation exposure
  - Collimated X-ray beams
  - Shielded scanner design
- Environmentally friendly: no chemical waste
- High suitability for:
  - Pipes 5 cm to 142 cm (2” to 56”) in diameter
  - Thin-wall and austenitic materials
  - Dissimilar welds and CRA pipelines
  - Root pass and hot-pass inspections