

DIGITAL RADIOGRAPHY

LOCATING, SIZING AND MONITORING OF CORROSION ON PIPING

On-stream radiographic imaging is one of the most used techniques for locating, sizing and monitoring of corrosion on piping when insulated.

In the industrial environment of refineries and chemical plants, inspections have to be performed on a variety of difficult to reach locations, on pipes that might be isolated and where people are working around the clock. This is where Computed Radiography comes in. The execution of Computed Radiography (CR) is similar to conventional radiography, yet it has several important advantages.

Two advantages in particular improve safety and quality. First of all for CR weaker isotopes can be used to expose the "films" and the other advantage is the digital readout of the wall thickness which highly improves accuracy and reproducibility.

In addition to the reduced use of chemicals and fast archiving of images is possible and the results can be fully integrated into any AIM system to reliably monitor degradation. Computed radiography (CR) uses an imaging plate, instead of film. The imaging plate contains photo-

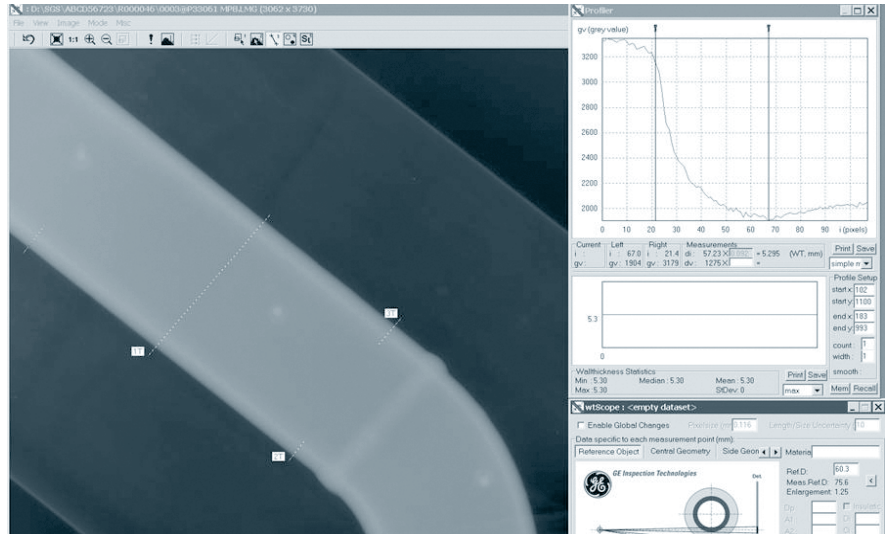
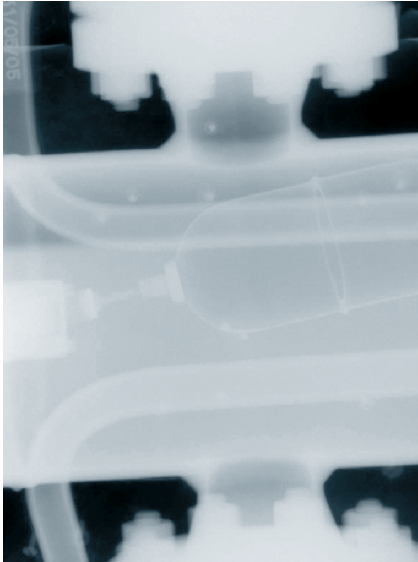
stimulable storage phosphors, which retain the latent image. When the imaging plate is scanned with a laser beam in the digitizer, the latent image information is released as visible light.

This light is captured and converted into a digital stream to compute the digital image. No chemical developer is needed. The image can be digitally enhanced for interpretation and measurements, thus a larger range of wall thicknesses can be inspected. These images can be produced using an appreciable lower radiation dose or in less time.

ADVANCED CORROSION INSPECTION TECHNOLOGY

INSPECTION TECHNIQUE

The execution of Computed Radiography is similar to conventional radiography for the on-stream technique. The image handling is different as a Phosphor image plate is used instead of a conventional film. The image plate stores 4096 gray values, which can - upon read out by using an optical scanner - be visually distributed in several numbers of grey values. Because of this, a wide variety of thickness ranges can be inspected in only one image. The images can be produced using an appreciable lower radiation dose compared to conventional radiography.



ADVANTAGES

- Wall thickness can be measured digitally with higher accuracy and reproducibility
- Due to the shorter exposures less radiation dose is needed
- The CR reports can be embedded in AIM software
- Results available direct after exposure
- No chemicals, darkroom or developer needed
- Images are digitally archived; no quality loss and easier to trace and view
- Image can be digitally enhanced and optimized for digitally interpretation

Leak Testing, Thermography, Electromagnetic Testing (ET), (ET), RFEC, IRIS, Digital Radiography, Radiation detection RVI and Endoscopy inspections.

We are pleased to inform you anywhere around the world about how SGS can help you in improving the reliability of your processes and assets.

APPLICATIONS

On-stream radiography on the following piping can be done

- Metal and plastics
- Insulated piping
- Diameter range up till 22 Inch in special applications
- During process (filled) and even at high temperatures up to 250°Celsius
- Problem solving on pipelines and appendages (valves reducers, etc.)

THE SGS EXPERTS

SGS Industrial Services has the knowledge, expertise and experience to perform conventional and advanced NDT inspections around the world using our unique network. Our service offer varies from Guided Wave and the conventional NDT techniques to Risk Based Inspection (RBI/AIM), Time of Flight Diffraction (TOFD), Corroscan, Positive Material Identification (PMI), Magnetic Flux Leakage (MFL), ACFM,

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