

# COMPUTED RADIOGRAPHY (CR)

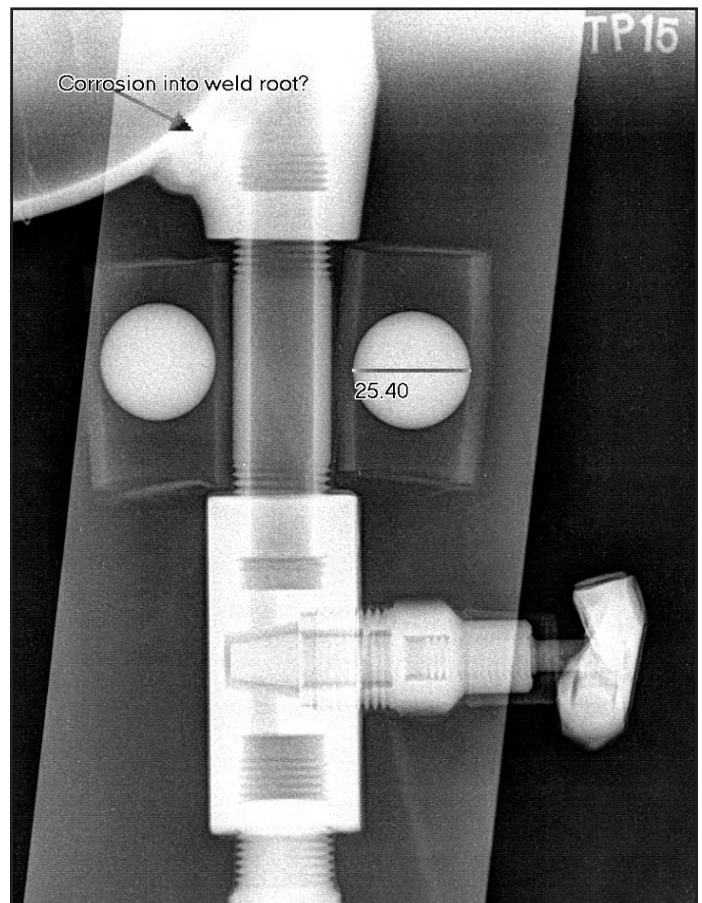
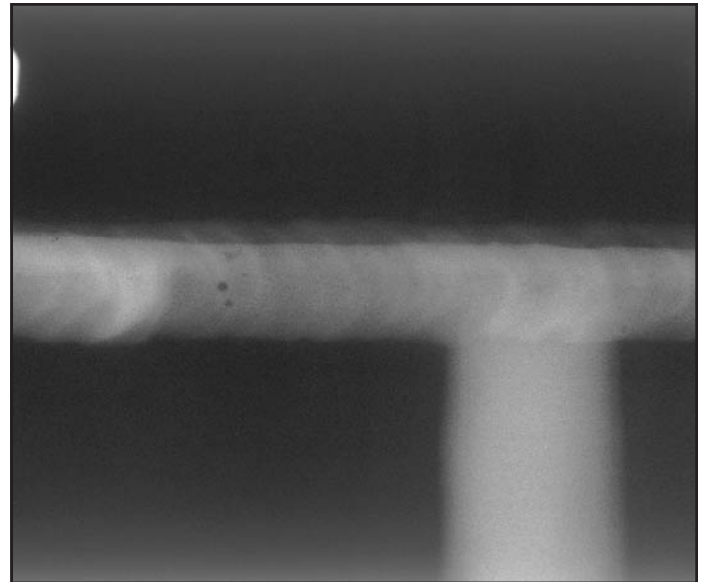
Technological advances make it possible for Oceaneering to meet a wide range of NDT inspection applications with digital solutions. Computed Radiography systems can collect and analyse all radiographic data replacing the requirement for conventional film and the hazards and inconveniences associated with 'wet' processing.

## Technique

Front end technology and equipment is the same as used for conventional radiography, the difference is in recording the image and the use of phosphor screens. When exposed to X or gamma ray electrons phosphor crystals are excited and trapped in a semi-stable higher energy state. The radiation exposed flexible phosphor plate is then processed through a laser scanner, delivering the image onto a high resolution monitor. This digital image can be enhanced and analysed whilst the phosphor screen is automatically erased for immediate reuse. The image can then be interpreted, reported and digitally stored for future retrieval or analysis.

## Capability

- Enhanced contrast, density and magnification
- Accurate thickness measurement and repeatability
- Density profiling
- Exposure latitude over 1,000 times more than film resulting in fewer retakes
- Reduced number of exposures for multi-thickness section



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## Applications

The technology can be used for many industrial applications and particularly complements the Small Controlled Area Radiography (SCAR) system to provide a safe, rapid and environmentally friendly inspection technique. Applications continue to be developed and to date include:

- Weld inspection
- Corrosion Under Insulation(CUI), detection and measurement
- Flow Accelerated Corrosion, detection and measurement
- Valve assessment
- Blockages in pipelines including subsea applications

## Advantages

- Exposure time reduction from 5 to 20 times less than film
- Up to 10,000 times reusable phosphor flexible plates
- No requirement for darkroom, wet processing facilities or film
- Environmental benefits
- Digital data instantly reviewable remotely
- No image degradation over time
- Annotation of measurements on image

## Limitations

- Inherent risks associated with radiation

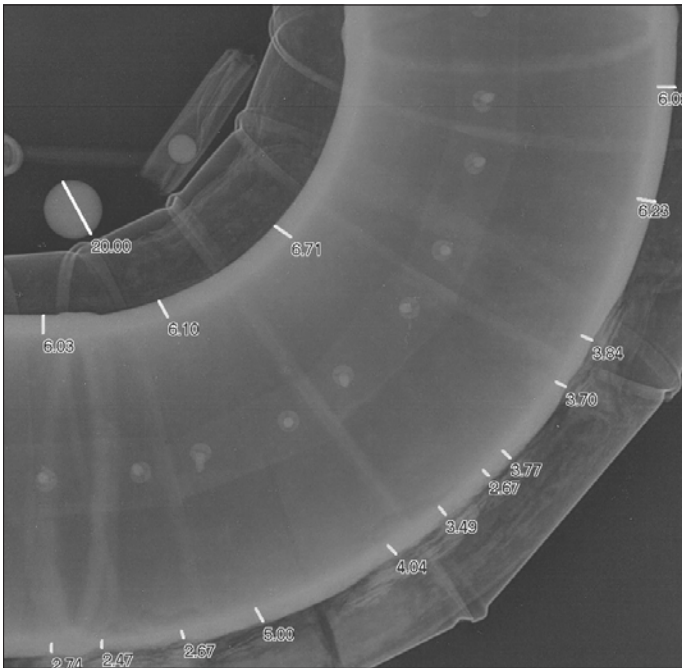


Image of corrosion under insulation

