

Industrial Radiography: NDT X-ray

At Applus+, our Industrial radiography deploys high-energy X-ray systems to provide high-resolution radiography test for casting sections. Heavy-wall, large irregular castings, which would take considerable time to radiograph with conventional gamma-isotope equipment, only take a matter of minutes using the high-energy X-ray NDT testing methods.



THE Applus+ SOLUTION

With our high-energy NDT X-ray systems, Applus+ can provide fast, sharp, precise radiograph of cast steel or equivalent materials up to 28cm (11 inches) in thickness, with a material weight of up to 10 tonnes. Two per cent sensitivity can be demonstrated on material with a thickness down to 1.9cm (.748 inches).

Our Varian linear accelerators can image 15cm (6 inches) of cast steel on medium-grain film in five minutes, whereas a 100-curie cobalt 60 source exposure would take 10 times longer for the same application.

Two-centimetre focal-spot sizes allow for greater definition at shorter source-to-film distances, while a higher radiation intensity permits longer source-to-film distances, covering up to six 35cm x 43cm (14 inches x 17 inches) films in a single exposure.

With seven different high-energy systems (2 x 2MeV, 1 x 3MeV, 4 x 4MeV), Applus+ has the greatest high-energy, industrial X-ray NDT service capacity in the US.

Target customers

Typical applications for high-energy X-ray non-destructive testing systems include:

- High-pressure steel valves for the oil and gas industry
- Blade and vane segments for industrial gas turbines
- Nickel alloy aircraft-engine castings
- Stainless steel aircraft-engine castings
- Cast blade hubs for wind turbines

Key customer benefits

Clients using high-resolution radiography NDT from Applus+ will benefit from:

- A significant reduction in NDT inspection time – offering subsequent cost-efficiencies, particularly on large, irregular objects
- An environmentally-friendly process, with no chemicals required
- Reduced quantities of film scraps
- Extremely high-quality results and analysis