Computed Radiography with Digital Film Archiving

MISTRAS Group is a leading provider of Computed Radiography (CR) with Film Digitization (FD). This significant development in advanced Radiography has become a growing demand for customers requiring the highest quality, accuracy, and storage capabilities.

MISTRAS’ Computed Radiography produces digital X-ray images without using film. The same X-ray producing devices are used as with typical X-ray testing (RT), but the image is captured on a flexible, reusable imaging plate coated with a phosphor material. The imaging plate is then scanned by a laser scanner producing a digital image that can be edited, uploaded and shared via a computer. In most cases, this technology can be easily retrofitted into film-based systems, eliminating the need for film, chemicals, processing lab, equipment, and storage – and the costs associated with those ancillary tasks.

The imaging plate is then erased by technicians and ready for use again in 60 seconds or less for thousands of more scans. The digital image can be enhanced, filtered, annotated, zoomed, shared, and archived, all electronically.

SAFETY
There are many reasons the use of MISTRAS’ Computed Radiography with Film Digitization Services has grown in demand – increased efficiency, cost savings, and convenience – but MISTRAS places one factor above all others.

CR with FD allows for the use of lower strength radioactive sources (se75), which reduce boundaries and exclusion zones and result in a safer work environment for all involved.

EFFICIENCY & COST SAVINGS
While the increase in safety is of paramount concern, the increase in customer service and efficiency Computed Radiography with Film Digitization Services provides is hard to overlook. MISTRAS’ CR with FD actually increases productivity, safety, and quality at the same time. That smaller exclusion zone is also just one of several products of an overall increase in efficiency with the use of MISTRAS’ CR.

Decreased on-site exposure times and a smaller exclusion zone also means shorter, less frequent, and less costly nonproductive downtime.

The most profound improvement in productivity is related to the actual processing of images (see infographic). Because MISTRAS’ CR allows for multiple plate processing at the same time, that equates to a production improvement of 15 to 30 minutes per hour using Computed Radiography versus traditional film radiography. This promotes same shift response to acceptance results, defects, and rework requirements.
Computed Radiography with Digital Film Archiving

In addition to eliminating the darkroom, chemical, and hazardous material costs associated with traditional X-ray film development, MISTRAS’ Computed Radiography prolongs the useful life of radioactive sources.

**BETTER RESULTS, ACCESS & ARCHIVING**

Not only does CR with FD results get into the hands of the customer quicker, they also stay there with simple, convenient archiving services. MISTRAS’ CR eliminates the need for film and the expensive costs that come with it. Rather than being transferred onto normal X-ray film, which is bulky and needs to be stored in a climate controlled environment, images captured with CR are digitized (FD).

These digital images can be viewed and enhanced to aid interpretation and eliminate assumptions or the need to re-examine.

Interpretation is easier too since digital images can be marked, highlighted, and annotated for clearer interpretations. And the digitization of images improves work flow by allowing for digital archiving that enables easy future viewing and electronically sharing via email for fast approvals.

**AFTER MARKET FILM DIGITIZATION SERVICES**

Adhering to its mission of being One Source for Asset Protection Solutions, MISTRAS also offers the ability to digitize film already obtained via conventional RT.

These capabilities allow MISTRAS to take a storage room full of X-Ray films and digitize them onto portable media such as a flash drive or CD; thus eliminating the costs associated with storage, space, and climate control.

**COMPUTED RADIOGRAPHY HELPS PRODUCE MILLIONS IN SAVINGS**

In an outage for a large national utility, MISTRAS evaluated more than 15,000 welds of various diameters and thicknesses for weld quality and final code acceptance with Computed Radiography (CR) as a main diagnostic component – in lieu of traditional Radiography (RT).

The digital inspection strategy allowed MISTRAS to operate multiple RT crews in a limited space. CR also allowed the welding contractor to utilize another area in close proximity for production. This scenario would not have been possible using traditional radiography due to larger exclusion zones.

This comprehensive radiographic plan, coupled with Automated Ultrasonic Phased Array, allowed the utility to shorten the schedule by 14 full production days, resulting in an estimated $14M cost reduction.

Computed Radiography with Film Digitization offers a production time improvement of 15-30 minutes per hour over traditional radiography.