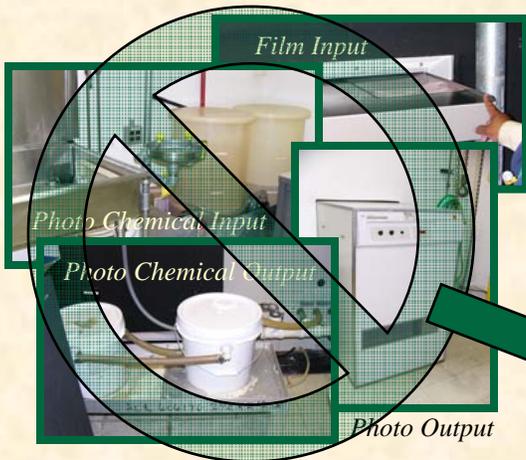


Computed Radiography Implementation

In 1988 Fabrication procured the “state-of-the-art” chemical-based non-destructive examination (NDE) radiography equipment. However, after being in service for close to two decades, this system needed to be replaced with current technology that is safer, more environmentally friendly, provides overall savings, improves current operations, and expands NDE capabilities. The NDE images historically have been recorded using a wet chemistry photographic process in Building 3017. This process required photoprocessing chemicals and water to process the film. This system was replaced with a modern digital computed radiography (CR) system and a smaller x-ray film processor. The CR machine is used for the majority of the NDE tests with the new x-ray film processor being used to test specific materials.

This source reduction initiative had a one-time implementation cost of approximately \$150,000 including training. It provides digital images and increases the speed and efficiency of the process while reducing the potential for hazardous waste or water-related regulatory issues.



Chemical-based System Components Eliminated

Consequently, this source reduction initiative:

- improved safety and reduced floor space
- improved efficiency and expanded capabilities of services provided including mobility, improved archiving, and image sharing
- reduced the purchase and use of film by approximately two-thirds and implemented the use of reusable CR plates
- reduced the purchase, use, and resulting waste generation of photographic chemicals, by approximately two-thirds and reduced need for silver recovery
- eliminated the use of approximately 500,000 gallons per year of once-through process water and resulting photochemical-tainted wastewater generation
- reduced the concentration of photochemical-related metals in the generated wastewater by 40 to 60 percent
- reduced electricity usage through the elimination of one water heater
- eliminated an estimated annual cost of approximately \$50,000 per year due to decreased wastewater generation alone.

