Comparison research of Bright Calibration and Multi frame Images with SNRN and SRb in Digital Radiography Bendable detector

kap ho cho[1], Mun Ho Nam[1], Jin Wook Yang[1]

[1]Department of Research and Development, Korea Industrial Testing Co., Ltd., Republic of Korea

Recently, many advances in inspection technology have been made in digital radiation inspection among non-destructive inspections of structure welds in industrial sites due to the development of detectors. The recent development of bendable detectors has increased the applicability of pipes compared to the past, but the image quality of the digital image is determined by the calibration value of the detector image and the multi-frame when radiography is taken, so when inappropriate conditions are applied, the image quality is poor compared to film radiography. Therefore, in this study, to acquire and compare effective images, calibration values under various conditions and digital images acquired in multi-frames were compared using a bendable detector. To meet the conditions of the industrial site, a flat-plate welding test piece and a Se-75 radiation source were used, and a total of 100 images were obtained by dividing bright correction and multi-frames before photographing, and SNR and SRb were checked. As a result of the experiment, SRb was satisfied with the ISO17636-2 standard, and the signal-to-noise ratio increased as the image overlap increased. As the multi-frame increases, the exposure time of radiation increases, affecting the exposure and work efficiency of workers, so it is thought that good digital radiographic images can be obtained if appropriate imaging techniques are checked at each site.