Color I.I. Digital Radiography Examination System

for Pipe Wall Thickness Measurement

Feature

(1) Get piping inner surface profile as sensitive color image data.
   - **Wide range** / **Getting an image simultaneously a thick area and a thin area by one measurement**

(2) Pick up thickness data from image data at any point.
   - **Mobile console built-in digital image processing software.**

(3) Permit the saving of time in inspection.
   - **Without insulation removal** / **Real time image processing technology** / **Remote operation**

Application

- To grasp general wall thinning tendency
- Screening measurement to increase the number of measurement place
Background
In the nuclear power plant, pipe wall thinning occurs. It is difficult to grasp pipe wall thinning tendency accurately.

Benefits
1) Color I.I. Digital Radiography Examination System can get piping inner surface profile as sensitive color image data (Fig.1).
2) Also can pick up thickness data from image data using digital image processing software (Fig.2).
3) Also permit the saving of time in inspection by the feature as described below
   • Without insulation removal
   • Real time image processing technology
   • Remote operation and automatic scanning

Experience
Color I.I. Digital Radiography Examination System has been applied to the BWRs since 2004.

Feature
1) Using Multi-color scintillator and color CCD camera, we enable you to get sensitive color image data (Fig.3).
2) By superposing three color image, we can get an image simultaneously a thick area (hard for the γ /X ray to transmit) and a thin area (easy to transmit) by one measurement (Fig.4).
3) Using digital image processing software, we can get thickness data from brightness distribution profile of color image automatically (Fig.2).