



NeoMetrix
Technologies, Inc.

Tech Brief 01-06-006

Documenting Nozzles in Nuclear Plant



Figure 1 – Nozzle in Nuclear Plant

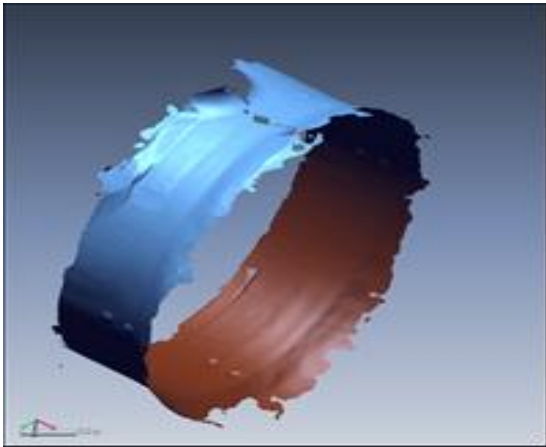


Figure 2- Laser Scanned Data

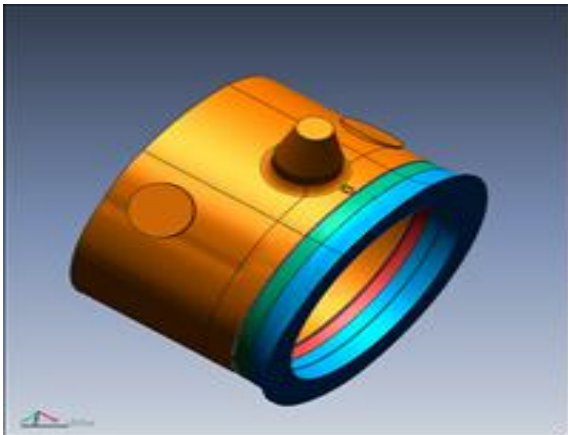


Figure 3 – 3D Solid Model

Problem:

EPRI, a nuclear power research division needed to accurately model a 40 inch diameter pipe that was welded inside a nuclear reactor. Data was required in order to custom fit ultrasonic inspection Sensors.(Figure 1)

Traditional Method:

Original design data for weld radius was used for probe development; however, as-built conditions did not match prints. This results in poor inspection results from ultrasonic inspection.

NeoMetrix Solution:

- Parts scanned with Z-700 Hand held scanner for tight quarters
- Rapidform XOR used to interpolate missing data due to immovable objects (Figure 2)
- Surface modeled to the scan data
- Design data modeled for inside diameter

NeoMetrix Advantage:

- Accurate and Repeatable results
- 3D Animations for presentations (Figure 3)
- Ability to inspect back to original design
- 2D sections from scanned data can be used to design new probes which exactly match as-built conditions.