
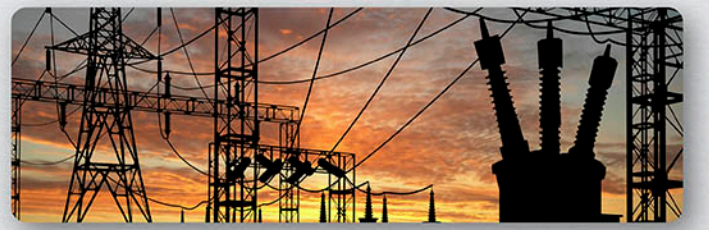


ELECTRIC POWER RESEARCH INSTITUTE

Performance Demonstration Initiative (PDI)

Piping and RPV Demonstration Program Update

PDI/NRC Meeting

December 2011

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Performance Demonstration Operations

Overview

- Completed 2011 Activities – Piping, RPV and Fabrication
- Ongoing Activities and Future Activities
- Challenges
- Summary

Completed Piping Qualifications 2011

- Personnel Qualifications
  - 108 Manual Personnel Candidates (9 Fast Track)
    - 50% Initial Supplement 2 or 12 detection
    - 31% IGSCC detection requal
    - 19% Depth (initial and requal)
  - 15 Auto Personnel Candidates
    - 68% Initial Supplement 2 or 12 detection
    - 32% Depth sizing (initial and requal)
  - 21% of total were using Phased Array
- Procedure Qualifications
  - 1 Full-Auto PA for Supp. 12 through-wall sizing only procedure
  - 1 Full-Auto PA for Supp. 12 detection, length and through-wall sizing procedure

Completed Piping Qualifications 2011 (cont.)

- Procedure Equivalency
  - 1 Based on Zetec-OmniScanPA-03 (Encoded PA for Supp. 10 detection, length and through-wall sizing procedure)
    - Substituting two new UT instruments for the OmniScan (Zetec Zircon & Dynaray Lite)

Completed RPV Qualifications 2011

- Personnel Qualifications
  - 12 vessel, 13 nozzle, 13 bolting candidates
  - 3 candidates used PA
    - **Sonic Systems** - Manual Vessel and Bolting (3)
    - **AREVA** - Manual Vessel (3)
    - **GE Hitachi** - Manual personnel qualification nozzle (7)
    - **Southern Nuclear** – Manual Bolting (1)
    - **URS** – Manual Bolting (1)
    - **Entergy** – Manual Bolting (1)
    - **AREVA** – Manual Bolting (1)
    - **NIC** – Manual Bolting (1)
    - **LMT** – Manual Vessel, Nozzle IR and Bolting (6)
- Procedure Qualifications
  - None in 2011

Fabrication Activities 2011

- WOL samples added in 2011
  - 24” diameter, SS weld w/SS WOL – 6 blind samples and (2) practice samples
  - 8” diameter, Westinghouse Spray Nozzle w/full structural and optimized WOL – 6 blind samples
  - 15” diameter, Westinghouse Surge Nozzle w/full structural and optimized WOL – 4 blind samples
  - 30” diameter, BWR N-1 Nozzle w/full structural WOL – 4 blind samples

Fabrication Activities 2011 (continued)

- 34” diameter, Westinghouse Cold Leg Nozzle w/full structural WOL – 3 blind samples
- 34” diameter, Westinghouse Cold Leg Nozzle w/optimized WOL – 3 blind samples
- 2” diameter, SLC, w/full structural WOL – 4 blind samples
- 8” diameter, CE Spray Nozzle w/full structural and optimized WOL – 3 blind samples
- 13” diameter, CE Surge Nozzle w/full structural and optimized WOL – 6 blind samples

Ongoing and Future Activities

- Piping Qualifications
  - Procedure Expansion (December-February)
    - Attempt to expand encoded phased array DM procedure to include raster scanning with smaller probe/wedge combinations for both axial and circ scanning directions
    - Attempt to add additional tapered nozzle configurations
  - Personnel
    - Additional automated and manual qualifications scheduled in December

Ongoing and Future Activities (continued)

- RPV Qualifications
  - **IntelligeNDT** – Auto PA vessel and nozzle analysis (In progress)
  - **Wesdyne** - Manual conventional vessel and nozzle (In progress)
  - **GE Hitachi** - Manual conventional vessel and nozzle (December)
  - **CENG** – Manual bolting (December)

- Fabrication
  - UT Fingerprinting of new weld overlay samples continues into 2012

Challenges

- 2011 was a comparatively slow year for qualifications
  - Large number of outages in Spring
  - Starting to pick up (2012 looks busy)
- Generic procedure revision process is ongoing
  - PDI-UT-1 and 3 were completed this summer
  - PDI-UT-6 (RPV welds) is underway
- The PDI committee continues to work on ground rules for equipment equivalency process in accordance with the ASME approved Code Case N-780
- We have begun working with NSSS vendors on new plant component inspection issues
  - More “opportunities” are on the way!

Summary

- Lower overall number of qualifications in 2011, but starting to pick up
- We have a good amount of new WOL mockups, which we are working to insert into the program
- New plant configuration assessments and new Appendix VIII equipment equivalency rules are providing us with plenty of challenges to work through for the near future