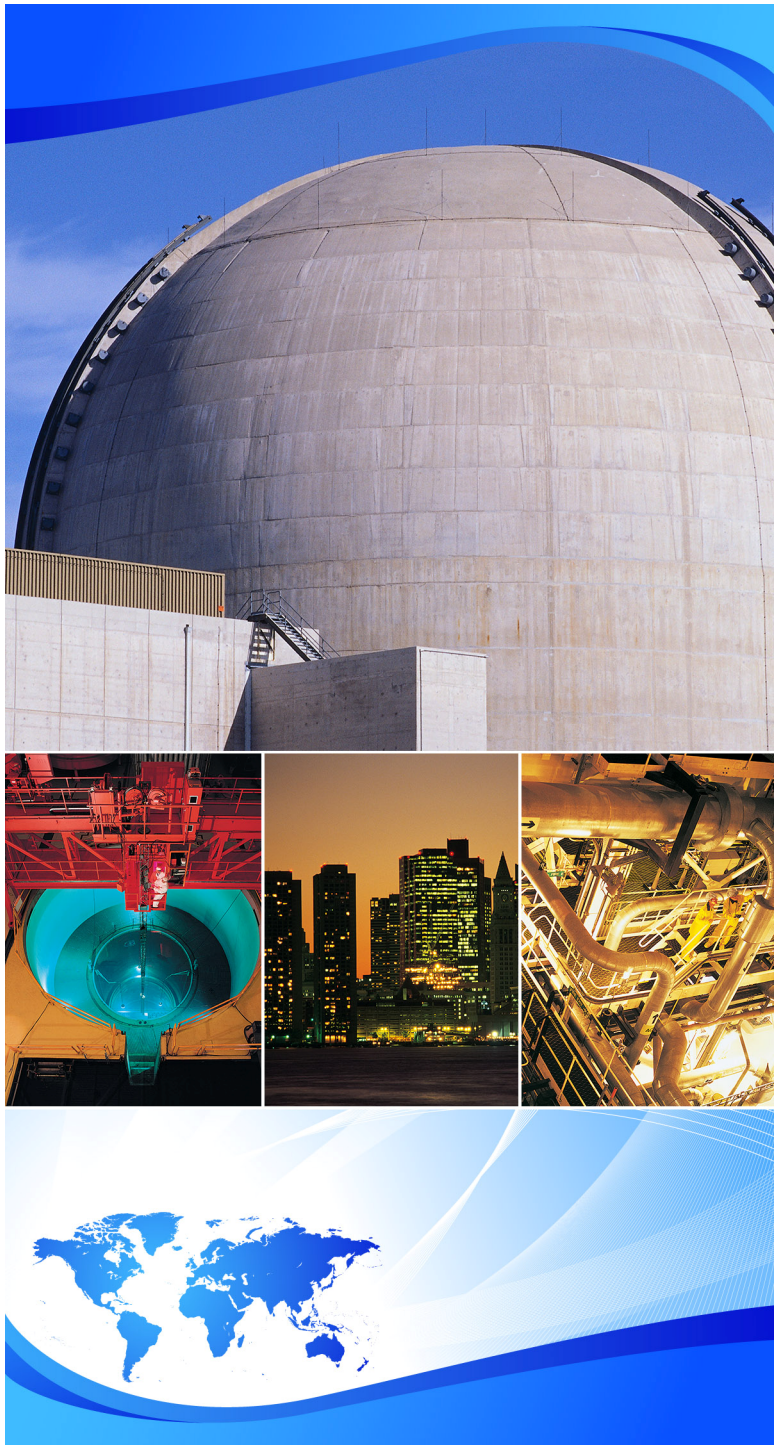

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Overview of NDE Projects

PDI/NRC Meeting - December 2009

Ronnie Swain
Senior Project Manager
Performance Demonstration Programs

Overview

- The APC has agreed to provide the NRC with the NDE Work Plan for 2010
  - It will be compiled in book form in January and will be provided to the NRC at that time
- The 2010 work plan includes 13 projects, of which 4 are of particular interest to this group
  - PDI Weld Overlay Program – Specimen Library Expansion
  - Stress Corrosion Cracking – Historical Study
  - Single-Side UT Examinations of Stainless Steel
  - UT Examination of Weld Overlays over Cast Stainless Steel Base Materials
- All projects while funded by different programs are either performed or managed by NDEC staff
- Listing does not include maintenance and operation of ongoing programs such as PDI and Training

2010 NDE Center Projects of Interest to PDI

- **PDI Weld Overlay Program – Test Specimen Library Expansion**
  - Project will fabricate DM weld samples with full structural and optimized weld overlays
  - Samples will contain DM weld geometries indicative of configurations that have been mitigated or repaired in the past 5 years
  - Strengthens the technical basis of the current program
  - New samples will contain flaw distributions to support the newly proposed ASME Code revisions
    - Optimized weld overlay ultrasonic inspection qualifications
    - Expand the qualified weld overlay thickness range
  - This will be phased project progressing through 2010 moving towards completion in 2011

2010 NDE Center Projects of Interest to PDI (cont.)

- **NDE of SCC at Nuclear Plants – A Historical View**
  - Project will capture/collate/assemble a global-industry-wide study of the chronological issues of SCC resources for NDE use
    - this information will provide a single source reference, which can be used as a reference for the industry
  - The document will leverage results between programs (i.e. MRP, PDI, BWRVIP, SGMP, etc...) and plans between countries (USA, France, Sweden, Japan, etc...)
  - By having a broad historical knowledge of NDE for an SCC issue that has already been addressed the industry will avoid duplication of efforts and prevent utilities from unnecessary expense
  - A single source resource for NDE of SCC will bring a consensus to the industry and provide a valuable reference enabling knowledge retention

2010 NDE Center Projects of Interest to PDI (cont.)

- **Validation of Single-Sided Examinations for Stainless Steel**
  - Project will attempt to determine how UT techniques or examination parameters can be improved to increase the reliability of single-sided examinations of austenitic stainless steel piping welds
    - Reports demonstrating the effectiveness of these enhancements will be issued annually
    - Piping samples containing both pre-service and in-service defects will be designed and procured as necessary to support this effort
  - 2009 – Study existing techniques used for single sided examination of SS
  - 2010 and 2011 – Determine improved techniques for single side UT examinations, focusing on the critical areas of the components as determined by Risk-Informed ISI methodologies

2010 NDE Center Projects of Interest to PDI (cont.)

- **Low Frequency Ultrasonic Techniques for Weld Overlay on Cast Stainless Steel Base Materials**
  - Project will collect low frequency UT data of the existing weld overlay mockups containing cast base materials
    - Evaluate data to assess the feasibility of examination of the cast base materials
    - Provide assessment of detection, sizing and flaw characterization capabilities
    - Will employ currently available low frequency phased array UT probes/wedges
  - Where techniques prove successful, this study will aid in procedure development to support future qualification activities

Summary

- Multiple EPRI NDE Center projects are approved for 2010
- The NRC will be provided with a book of information concerning the approved EPRI projects early next year
- 4 of the approved 2010 projects are expected to directly impact PDI and should be monitored throughout the coming year