ELECTRIC POWER RESEARCH INSTITUTE

Validation of Single-Sided Ultrasonic Examinations for Stainless Steel

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- This project will fund a study to determine the capabilities of currently qualified ultrasonic techniques for detecting far-sided flaws in stainless steel piping.
- This project will also evaluate the necessary volume of material within the weld material and on the far side of the weld required to be examined based on Risk Informed methodology.
- Recommendations for technique and inspection parameter modifications in order to effectively examine the far side of the weld will be provided.

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Strategic Need

- The project is proposed by the *PWR SS NDE Capability & PD* working group….. and was prioritized as *high*

Barriers				
1 Maintenance of core competencies in the EPRI NDE Program	2 Industry materials NDE issues	3 Regulatory and Code issues related to inspections	4 Supply of qualified NDE workers	**5** Equipment reliability NDE issues
	✓			

The project is needed to address

- *IMT Gaps*
  - *MRP/ I&E-01 NDE Technology: Dissimilar Metal (DM) Butt Welds*
- *Regulatory requirements*

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Project Plan and Delivery

- Project Plan
  - The objective of this project is to determine how ultrasonic 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.
  - Piping samples containing both pre-service and in-service defects will be designed and procured as necessary to support this effort.
- Deliverables & Application Plan
  - EPRI utility members and inspection vendors will have access to a set of piping specimens which contain both pre-service and in-service defects.
  - Ultrasonic techniques for the examination of austenitic piping welds having limited access conditions will be available to the industry.

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- Summary
  - This project will seek to develop and demonstrate the effectiveness of enhanced ultrasonic techniques for single-sided access conditions.
  - The application of risk-informed in-service inspection technology for more efficient examinations of critical components will also be considered.
  - Single-sided ultrasonic techniques are needed to address existing stainless steel piping as well as new piping components where access is limited.

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