



ELECTRIC POWER  
RESEARCH INSTITUTE

# Weld Inlay Examination Capability

PDI/NRC Meeting  
May, 2007  
Knoxville, TN

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Program Manager  
Appendix VIII  
Performance Demonstration



# Weld Inlay Examination Capability

## Summary

- The mitigation of PWR main loop nickel based dissimilar welds using a weld inlay process is under investigation
- Inlays are likely to be the most effective mitigation approach since access from the outside is not available in many cases
- The capability of inside surface examination techniques to establish that the dissimilar metal weld is defect free during and after mitigation repair is key to the acceptance of this mitigation process

# Weld Inlay Examination Capability

## Mapped to IMT Gaps:

Gap number	Gap title	Gap priority (H, M, L)
I&E-01	NDE Technology: Dissimilar Metal (DM) Butt Welds	H
RR-02	Alloy 600 Repair Techniques	L
MT-01	PWSOC Mitigation: Environmental Controls	H

## Sponsor Priority Input:

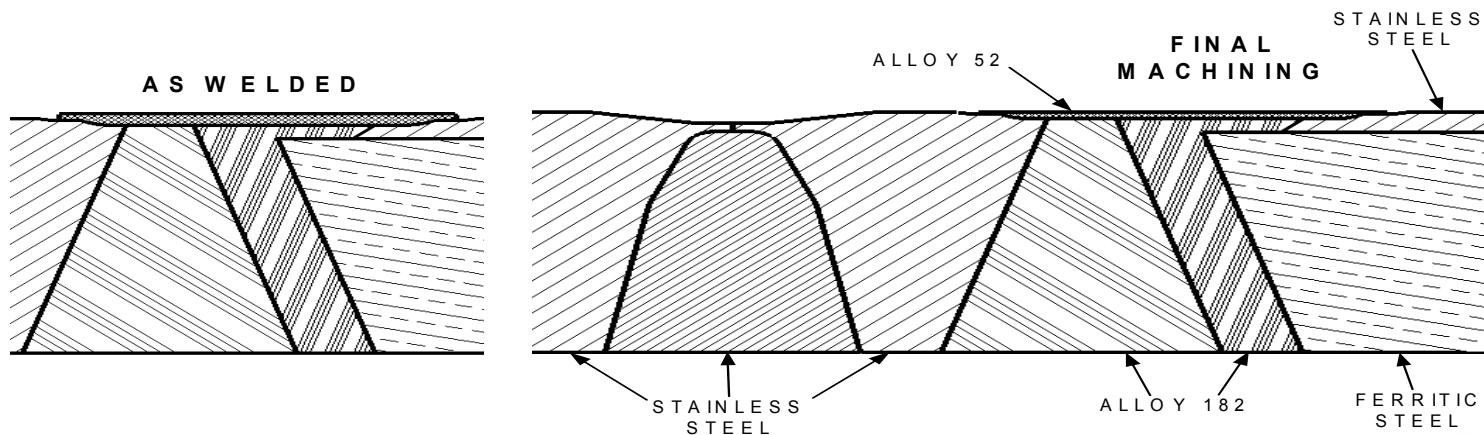
**Sponsor – Tim Spelde and Tom Green**

**Priority - High**

# Weld Inlay Examination Capability

## Project Description

- Purpose of this project is to
  - The objectives of this project is to provide documented evidence that the inlay repair/mitigation approach can be effectively examined using existing inside surface qualified examination procedures (No further qualifications required)
  - Supplement 10 and CC-695 presently exclude welds with Corrosion Resistant Cladding (CRC)



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## – Tasks & Deliverables

- PDI Equivalency Testing
  - Design and fabrication of a representative RCS mockup for PDI equivalency testing.
  - Perform equivalency testing on the RCS mockup with existing PDI UT procedures and personnel.
  - Witness of equivalency testing and document results
  - Develop technical basis including relief request
    - *November 2007*

# Weld Inlay Examination Capability

## Status

- PWROG has funded project lead by AREVA to evaluate and develop technology
  - Westinghouse also part of team
    - Kick off meeting held March 19<sup>th</sup> through 21<sup>st</sup>
  - Sample designed and fabrication underway
  - Demonstration scheduled for November/December time frame

# Weld Inlay Examination Capability

## Benefits

- The inlay mitigation approach will reduce the frequency of examination as well as providing an improved surface for performing the examination with currently qualified procedures
- The project will also reduce the amount of qualifications required in order to perform examinations of these mitigated components