



**Emerging Issues:
Materials and Mechanical**

Michele G. Evans, Session Chair
2009 RIC



**RIC 2009
Dissimilar Metal Butt Welds**

Ted Sullivan, SLS
Division of Component Integrity
Office of Nuclear Reactor Regulation
March 11, 2008



Background

- Dissimilar metal (DM) welds made with Alloy 82/182 have experienced cracking since mid-1980s
- Cracking in Alloy 82/182 butt welds (BW) has been experienced at many plants since 2000
- Prior to 2006, butt weld inspection schedules based on ASME Code, Section XI



Regulatory Approach

- In late 2005 industry implemented initiative MRP-139 with more aggressive inspection schedules
- RIS 2008-25 notes MRP-139 adequate for the near term
- Staff requested ASME to develop a code case on inspection of Alloy 82/182 butt welds



Regulatory Approach

- ASME approved Code Case N-770 in January 2009
 - Contains inspection requirements for unmitigated and mitigated Alloy 82/182 welds
- NRC staff developing a proposed rule updating 10 CFR 50.55a to incorporate 2005 Addenda through 2008 Addenda
- Staff expects this rule to propose incorporation of Code Case N-770, with conditions
 - Proposed rule projected to be issued end 2009



Proposed Code Case N-770 Conditions

- Code Case N-770 inspection requirements for mitigated welds intended to be used in conjunction with ASME Code Cases on mitigation requirements
- Mitigation Code Cases are in various stages of completion/approval
- Pending approval of mitigation code case, NRC staff review of most plant specific mitigations needed to use relaxed inspection requirements in Code Case N-770
- Expect to propose other conditions



Other Related Activities

- Ongoing inspections of MRP-139 programs by regions
- TI 2515-172 revision
- Discussion of deviations from MRP-139 with licensees


