U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Performance Demonstration for Cast Austenitic Stainless Steel

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Need for Improved Inspections

- Currently, there are dissimilar metal welds covered under N-770-1 that cannot be fully inspected because of CASS components
- These welds are affected by PWSCC, an active degradation mechanism
- As stated in ASME Code Section XI up to the 2013 Edition, “Cast materials may preclude meaningful examinations because of geometry and attenuation variables.”

Condition on Dissimilar Metal Welds

- *(11) Cast Stainless Steel*: Examination of ASME Code Class 1 piping and vessel nozzle butt welds involving cast stainless steel materials, shall be performed with Appendix VIII, Supplement 9 qualifications, or qualifications similar to Appendix VIII, Supplement 2 or 10 using cast stainless steel mockups no later than the next scheduled weld examination starting after January 1, 2022 in accordance with the requirements of paragraph -2500(a).

Discussion