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PDI Weld Overlay Program – Test Specimen Library Expansion

Carl Latiolais

Senior Program Manager Performance
Demonstration

PDI/NRC Meeting

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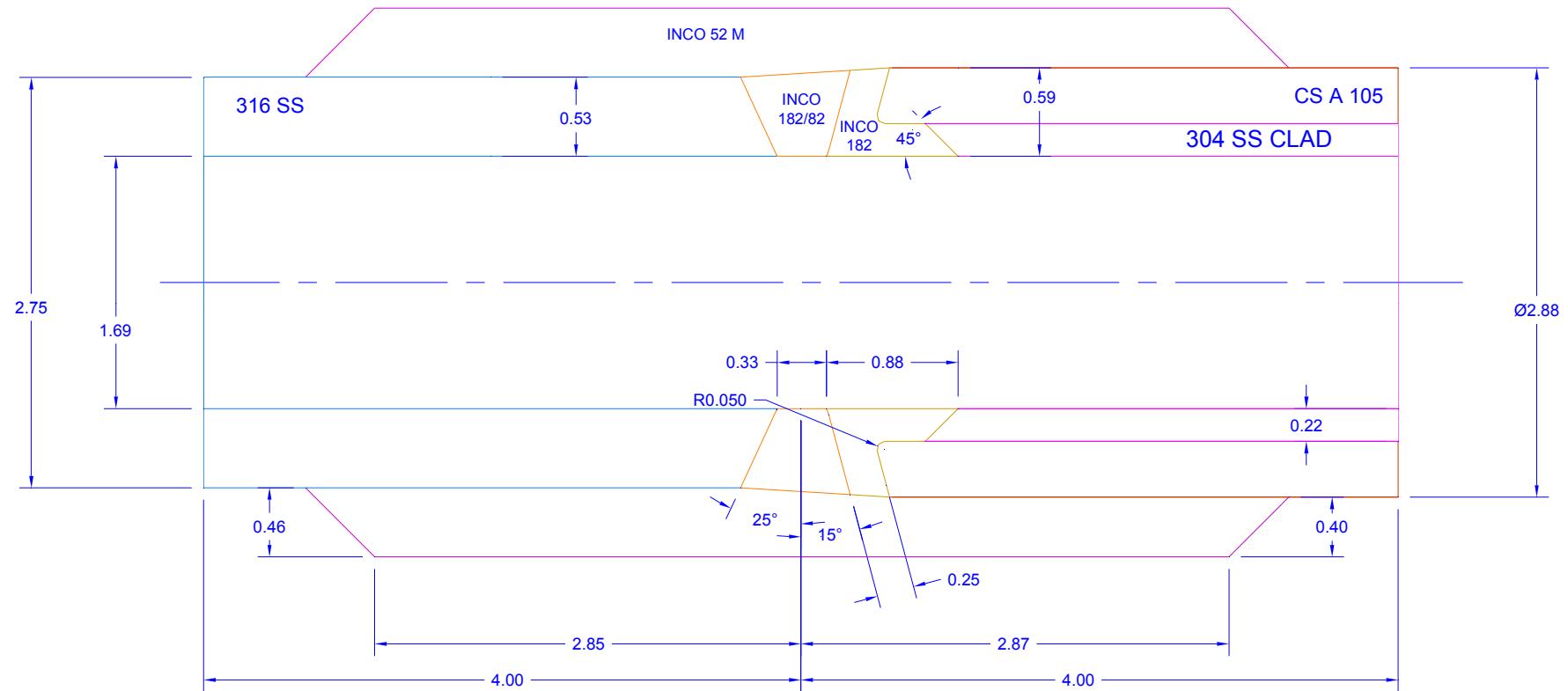
PDI Weld Overlay Repair (WOR) Program – Test Specimen Library Expansion

- This project builds on the results from a 2009 project and will serve 3 main purposes for the PDI WOL Program:
 1. *Include dissimilar metal weld overlay samples with geometries that resemble configurations across the fleet*
 2. *Include samples for the qualification of procedures and personnel for OWOL inspections*
 3. *Expand the overall number of flaws in both dissimilar metal weld and similar metal weld configurations in PDI test sets*
- Use of overlays during the past 5 years has been more than was originally anticipated especially on complex geometry configurations
 - Since 2003, ~250 overlays applied to PWR nozzles (Most applied preemptive to avoid frequent inspection intervals and all are *Dissimilar Metal Welds*)
 - Additional locations are being evaluated and many new configurations may be preemptively overlaid in the near future
- The project will deliver and phase in the samples during 2010 – 2011

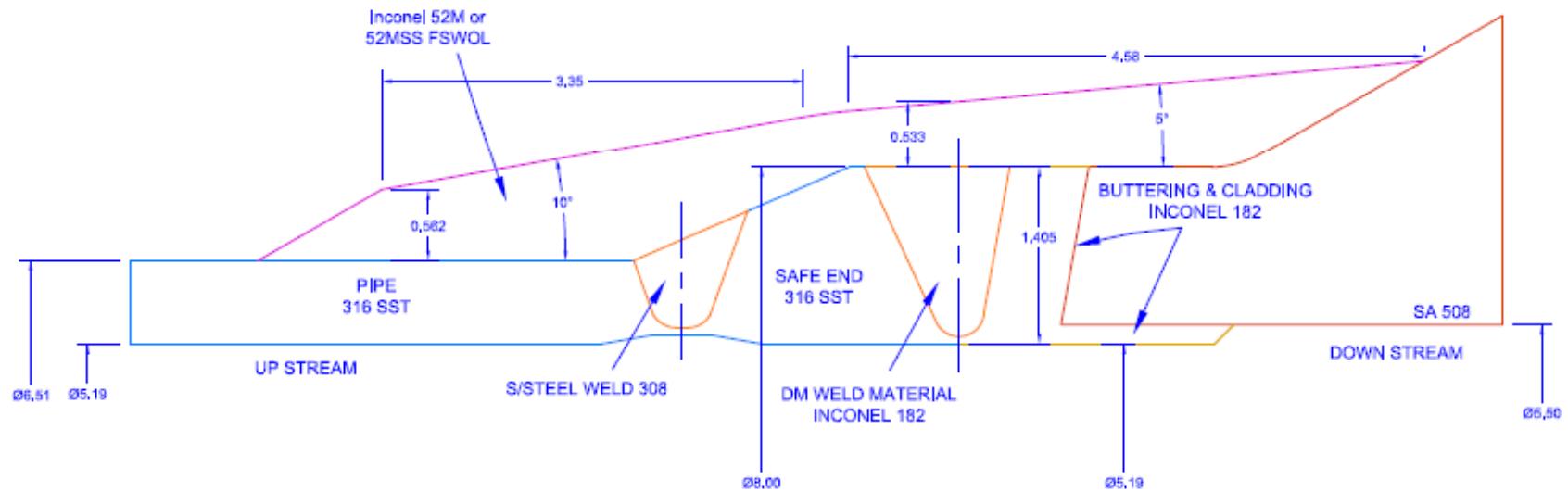
Deliverable and Application Plan

- Deliverables
 - 2009 Activities (**complete**)
 - Received 8" Westinghouse Safety / Relief & 34" Main Loop w/OWOL
 - Transfer completed samples into WOL Demonstration Program
 - 2010 Activities (**complete**)
 - Ordered 15" Westinghouse Surge & 30" BWR N1 samples
 - Take delivery December 2010 – January 2011
 - Transfer completed samples into WOL Demonstration Program
 - 2011 Activities
 - Order 8" CE Safety / Relief (w/Cast), 13" CE Surge (w/Cast), & 2" Drain Line (Generic) samples (**complete**)
 - Take delivery of samples by 2011 year end
 - Transfer completed samples into WOL Demonstration Program
- Application
 - Utilities and service providers will use the specimens as part of the PDI Program

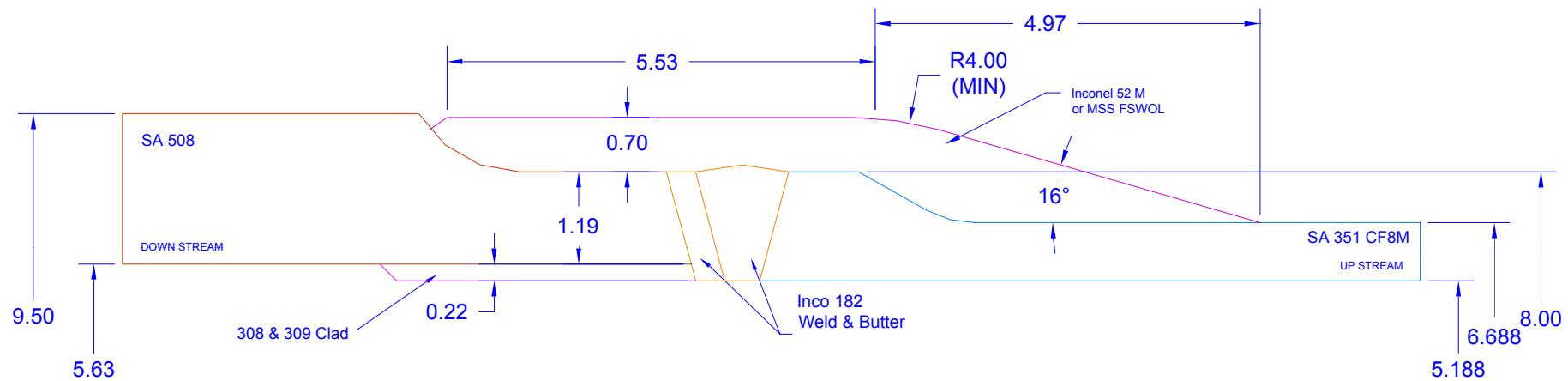
Drain Line (Generic) Configuration



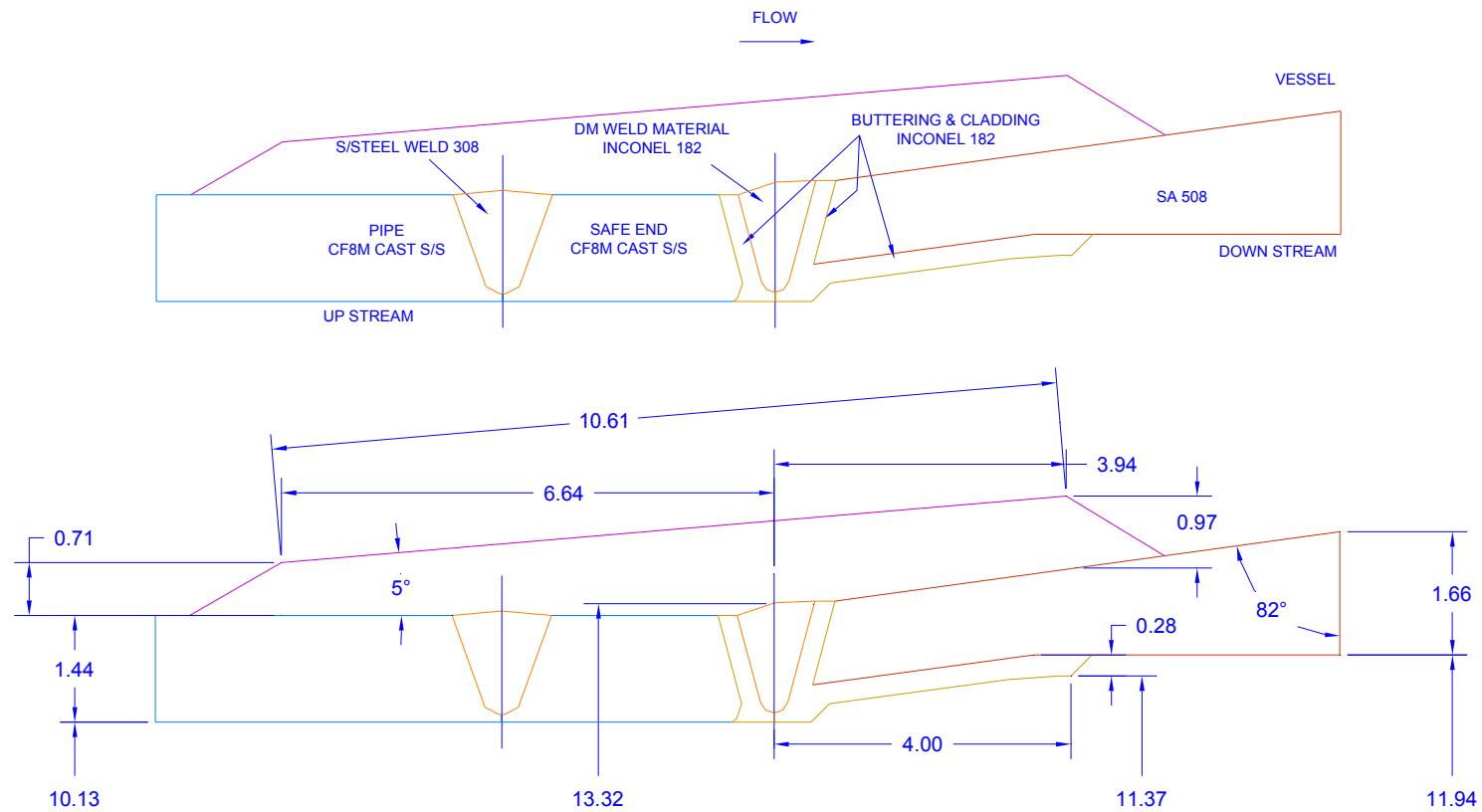
Westinghouse Safety / Relief Configuration



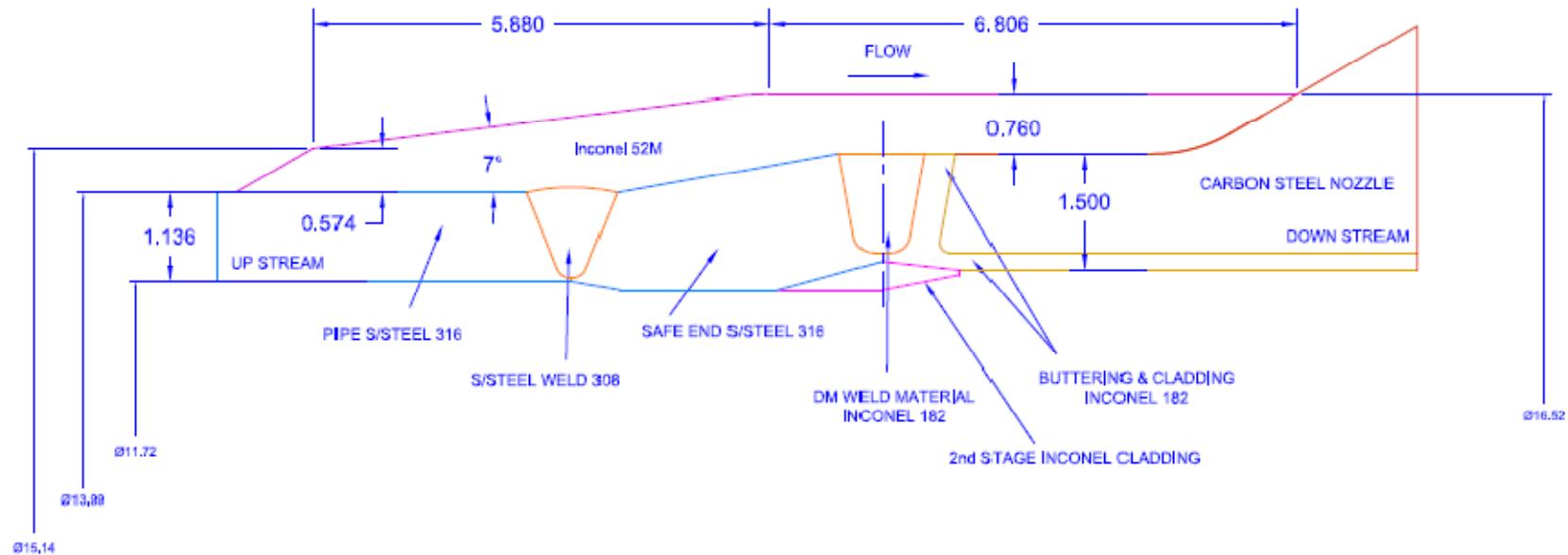
CE Safety / Relief Configuration



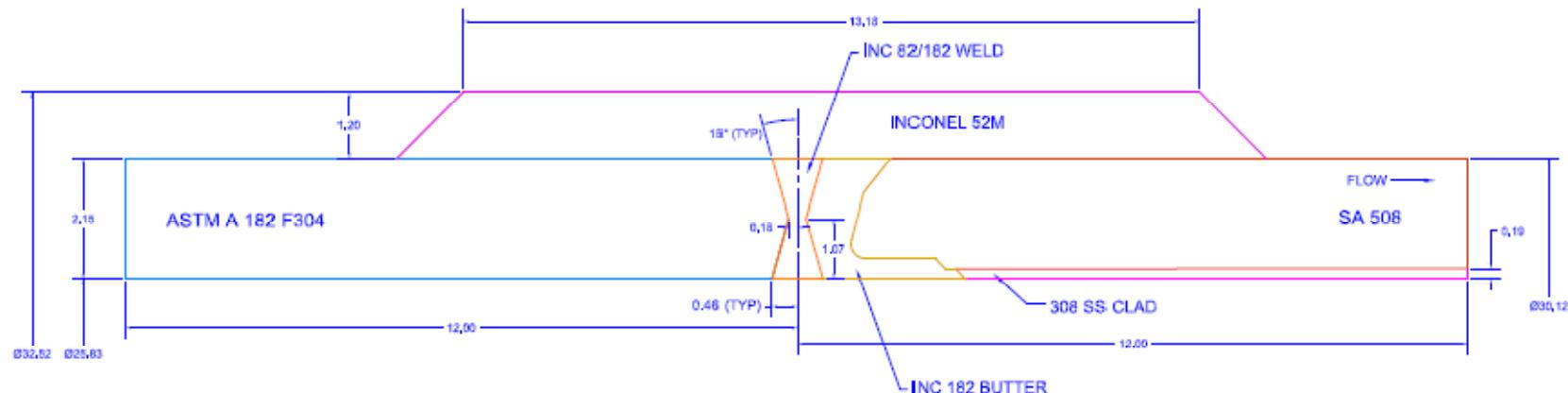
CE Surge Configuration



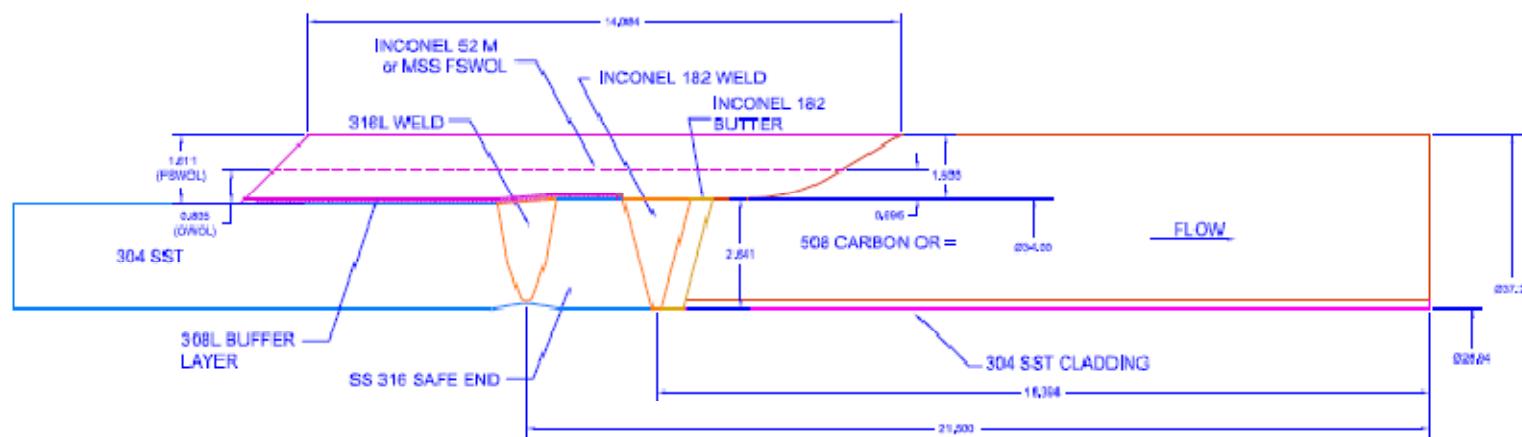
Westinghouse Pressurizer Surge Configuration



BWR Outlet Nozzle Configuration



Main Loop RPV Configuration



Summary

- This project targets fabrication of dissimilar metal weld samples with full structural and optimized weld overlays (OWOL)
- These overlay samples will contain dissimilar metal weld geometries indicative of configurations that have been mitigated or repaired in the past five 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 project will be completed in 2011