Nuclear Operating Company
South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

May 1, 2007
NOC-AE-07002161
File No.: G25
10 CFR 50.55a

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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South Texas Project
Unit 2
Docket No. STN 50-499
Unit 2 Weld Overlay Examination Results
(RR-ENG-2-43) (TAC Nos. MD1414-1423)

Pursuant to 10 CFR 50.55a(a)(3)(i), the STP Nuclear Operating Company (STPNOC) requested approval to use an alternative to the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI for the structural weld overlays on the South Texas Project Unit 1 and Unit 2 pressurizer spray, relief, safety and surge nozzle safe-ends. Ultrasonic examination of the weld overlays was to be performed to support NRC approval of the STPNOC request. STPNOC completed the ultrasonic examination for the South Texas Project Unit 2 pressurizer nozzle safe-end weld overlays on April 17, 2006, during the recent Unit 2 refueling outage (2RE12). A summary of the ultrasonic examination results is attached. No repairs to the overlay material and/or base metal were required or performed.

There are no commitments in this submittal.

If there are any questions, please contact either Mr. Philip Walker at (361) 972-8392 or me at (361) 972-7431.

Brandon Jenewein
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PLW
Attachment: Summary of Ultrasonic Examination Results for 2RE12

STI: 32155456

A047

cc:
(paper copy)

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South Texas Project
Unit 2
Summary of Ultrasonic Examination Results for 2RE12

Ultrasonic Examination Procedure

Structural Integrity Associates procedure SI-UT-126, Revision 0, Procedure for the Phased Array Ultrasonic Examination of Weld Overlaid Similar and Dissimilar Metal Welds, was used during the examinations. This procedure, and the examiners who applied the procedure, is qualified through the Performance Demonstrative Initiative (PDI) Program at the Electric Power Research Institute Non-Destructive Examination Center.

Examination Regions: Weld Overlay Material, Outer 25% Dissimilar Metal Weld and Adjacent Base Material, and Outer 25% Safe End-to-Pipe Weld and Adjacent Base Material.

Complete Code Required Coverage was achieved on the Weld Overlay and Outer 25% of the original welds and adjacent base material.

Axial Examination Angles: 0º through 83º

Circumferential Examination Angles: 0º through 63º (0º through 70º for the Surge Nozzle)

The examination gain was adjusted to maintain the procedure-specified baseline noise level from 5% to 20% of full screen height. The lower range of examination angles detected responses from the inside surface of the component which are useful for monitoring search unit contact / coupling effectiveness during the examination.

Surge Nozzle N1 Weld Overlay Examination

Component Identification: PZR-2-N1-SE-WOL

Examination Summary: The examination of the required volumes in the weld overlay and underlying upper 25% of base material found one indication within the weld overlay volume. This finding is a spot indication with no discernable length or width. The indication was determined to be within the WOL weld material. The indication was characterized in accordance with IWA-3300 of Section XI as a subsurface spot planar indication. The indication was then evaluated in accordance with IWB-3514, Code Case N-504-2, and Appendix Q, and was determined to be acceptable.

Spray Nozzle N2 Weld Overlay Examination

Component Identification: PZR-2-N2-SE-WOL

Examination Summary: The examination of the required volumes in the weld overlay and underlying upper 25% of base material found no suspected flaw indication. A small indication was recorded outside the examination volume in the underlying dissimilar metal weld. The indication is not crack-like and appears to be fabrication-related and not service-induced. The indication was conservatively evaluated to ASME Section XI standards (IWB-3500) and was determined to be acceptable.

Safety Nozzle N3 Weld Overlay Examination

Component Identification: PZR-2-N3-SE-WOL

Examination Summary: The examination of the required volumes in the weld overlay found no suspected flaw indication. The examination of the underlying 25% of the dissimilar metal weld and base material found no suspected flaw indications. The examination of the underlying 25% of the elbow to safe-end weld identified numerous fabrication indications. Porosity was identified in this area on the construction radiograph and during the PT examinations prior to overlay. In addition, the original preservice UT examination identified fabrication indications in this weld. The indications appear to be primarily indicative of porosity within the weld and can be seen originating from multiple locations within the stainless steel elbow to safe-end weld. The design of the weld overlay was conservatively evaluated and was determined to be adequate.

Relief Nozzle N4A Weld Overlay Examination

Component Identification: PZR-2-N4A-SE-WOL

Examination Summary: The examination of the required volumes in the weld overlay and underlying upper 25% of base material found no suspected flaw indication. A small spot indication was recorded outside the examination volume in the underlying dissimilar metal weld. This indication is a spot indication with no discernable length or width. The indication appears to be fabrication-related and not service-induced. This indication was conservatively evaluated to ASME Section XI standards (IWB-3500) and was determined to be acceptable.

Safety Nozzle N4B Weld Overlay Examination

Component Identification: PZR-2-N4B-SE-WOL

Examination Summary: The examination of the required volumes in the weld overlay and underlying upper 25% of base material found no suspected flaw indication.

Safety Nozzle N4C Weld Overlay Examination

Component Identification: PZR-2-N4C-SE-WOL

Examination Summary: The examination of the required volumes in the weld overlay and underlying upper 25% of base material found no suspected flaw indication. Two small indications were recorded outside the examination volume in the underlying adjacent base metal. The indications have no measurable through-wall dimension and are not crack-like. They appear to be fabrication-related and not service-induced. The indications were conservatively evaluated to ASME Section XI standards (IWB-3500) and were determined to be acceptable.