



Progress Energy

Robert J. Duncan, II
Vice President
Harris Nuclear Plant
Progress Energy Carolinas, Inc.

Serial: HNP-07-145
10 CFR 50.55a

OCT 22 2007

U.S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/LICENSE NO. NPF-63
INSERVICE INSPECTION RELIEF REQUEST 1
SUMMARY OF ULTRASONIC EXAMINATIONS OF PREEMPTIVE WELD OVERLAYS FOR
PRESSURIZER NOZZLE LOCATIONS CONTAINING ALLOY 600 MATERIALS

- References:
1. Letter from R. J. Duncan, II to the Nuclear Regulatory Commission (Serial: HNP-07-041), "Inservice Inspection Relief Request 1 Proposed Alternative to ASME Code Requirements for Weld Overlay Repairs," dated May 14, 2007
 2. Letter from T. J. Natale to the Nuclear Regulatory Commission (Serial: HNP-07-100), "Response to the Request for Additional Information on the Inservice Inspection Relief Request 1 Proposed Alternative to ASME Code Requirements for Weld Overlay Repairs," dated July 19, 2007
 3. Letter from Thomas H. Boyce, Nuclear Regulatory Commission to Robert J. Duncan, II, "Inservice Inspection Relief Request No. 1 Regarding Proposed Alternative to the American Society of Mechanical Engineers Boiler and Pressure Vessel Code Requirements for Pressurizer Nozzle Weld Overlay Repairs (TAC No. MD5535)," dated October 10, 2007

Ladies and Gentlemen:

On May 14, 2007, Carolina Power and Light Company, doing business as Progress Energy Carolinas, Inc., submitted a letter to the Nuclear Regulatory Commission (NRC) requesting relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," Article IWA-4000, "Repair/Replacement Activities" (Reference 1). The proposed alternative, based on ASME Code Case N-740, was requested to support Harris Nuclear Plant's installation of full structural weld overlays on dissimilar metal welds of pressurizer nozzles during Refueling Outage 14. This request was approved by the NRC on October 10, 2007 (Reference 3).

In that request, Progress Energy Carolinas, Inc. committed to submit to the NRC the following information regarding the final ultrasonic examinations of the completed weld overlays:

P.O. Box 165
New Hill, NC 27562

T > 919.362.2502
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A047
NRK

- Weld overlay examination results including a listing of indications detected
- Disposition of all indications using the standards of ASME Section XI, IWB-3514-2 and/or IWB-3514-3 criteria and, if possible, the type and nature of the indications
- A discussion of any repairs to the weld overlay material and/or base metal and the reason for the repairs


This information was to be provided within fourteen (14) days from completing the final ultrasonic examinations on the completed weld overlays.

The final ultrasonic examination of the weld overlays was completed on October 13, 2007. No indications requiring disposition were found and no repairs to the weld overlay material and/or base metal were performed. The Attachment to this letter contains the required report on the final ultrasonic examination, fulfilling commitment number 1 of the May 14, 2007, letter (Reference 1).

This document contains no new regulatory commitment.

Please refer any questions regarding this submittal to Mr. Dave Corlett at (919) 362-3137.

Sincerely,



R. J. Duncan, II
Vice President
Harris Nuclear Plant

RJD/kms

Attachment: Summary of Ultrasonic Examinations of Preemptive Weld Overlays for Pressurizer Nozzle Locations Containing Alloy 600 Materials, as provided by Structural Integrity Associates, Inc.

cc: Mr. P. B. O'Bryan, NRC Sr. Resident Inspector
Ms. B. O. Hall, N.C. DENR Section Chief
Ms. M. G. Vaaler, NRC Project Manager
Dr. W. D. Travers, NRC Regional Administrator

Serial: HNP-07-145

ATTACHMENT

**HARRIS NUCLEAR PLANT (HNP)
INSERVICE INSPECTION RELIEF REQUEST 1
SUMMARY OF ULTRASONIC EXAMINATIONS
OF PREEMPTIVE WELD OVERLAYS FOR
PRESSURIZER NOZZLE LOCATIONS CONTAINING
ALLOY 600 MATERIALS**

(7 Pages)



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October 14, 2007
SIR-07-310-NPS, Rev. 0

Mr. Joe Davis
Progress Energy
Harris Nuclear Plant
5413 Shearon Harris Road
New Hill, NC 27562

Subject: Summary of Weld Overlay Ultrasonic Inspections for Pressurizer Surge, Spray and Safety/Relief Nozzle-to-Safe End Welds at Shearon Harris Nuclear Plant, Unit 1

Reference: Progress Energy, Shearon Harris Nuclear Plant, Unit 1, Propose Alternative to ASME Code Requirements for Weld Overlay Repairs, HNP-07-041, May 14, 2007

Dear Mr. Davis:

The following attachment is transmitted in support of Progress Energy's response to commitments in the above-referenced request for alternative:

Attachment: HNP will submit the following information to the NRC within fourteen (14) days from completing the final ultrasonic examinations of the completed weld overlays:

- Weld overlay examination results including a listing of indications detected.
- Disposition of all indications using the standards of ASME Section XI, IWB-3514- 2 and/or IWB-3514-3 criteria and, if possible, the type and nature of the weld indications.
- A discussion of any repairs to the weld overlay material and/or base metal and the reason for the repairs.

If you have any questions or comments regarding this summary, please contact one of the undersigned.

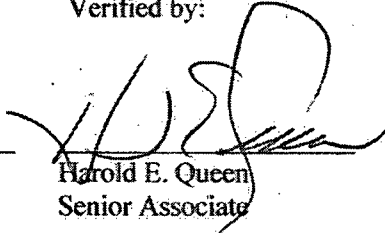
Prepared by:

Verified by:



Randall K. McDonald
Senior Consultant, NDE
Level III.

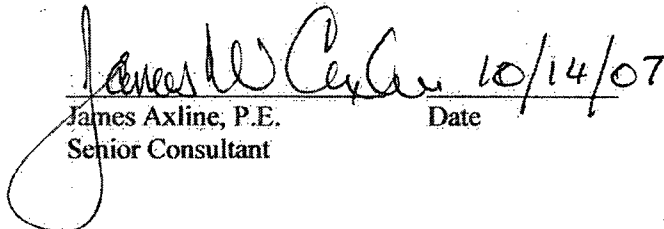
10/14/07
Date



Harold E. Queen
Senior Associate

10/14/07
Date

Approved by:



James Axline, P.E.
Senior Consultant

10/14/07
Date

ml
Attachments

cc: D. Saccavino
L. Nguyen
Project File: HNP-02Q

Attachment

**Summary of Ultrasonic Examinations of Preemptive Weld Overlays
for Pressurizer Nozzle Locations Containing Alloy 600 Materials**

Ultrasonic Examination Procedure

SI-UT-126, Revision 0 and Revision 3, *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, are qualified through the PDI Program at the EPRI NDE Center.

Relief Nozzle Weld Overlay Examination

Component Identification: N/SE Weld: II-PZR-01NSEW-20
SE/P Weld: 1-RC-FW-456

Examination Date: **October 11, 2007** Examination Time: **18:11 to 19:00**

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

Examination Coverage: 100% coverage of the Code-required volume was achieved during the examinations.

Axial Examination Angles: 0° through 83° (in 1° Increments) - Circumferential Examination Angles: 0° through 65° (in 1° Increments)

Examination Summary: No suspected flaw indications were observed during the examinations. 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 were useful for monitoring search unit contact / coupling effectiveness during the examination.

Safety Nozzle A Weld Overlay Examination

Component Identification: N/SE Weld: II-PZR-01NSEW-17
SE/P Weld: 1-RC-FW-330

Examination Date: **October 11, 2007** Examination Time: **15:45 to 18:00**

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

Examination Coverage: 100% coverage of the Code-required volume was achieved during the examinations.

Axial Examination Angles: 0° through 83° (in 1° Increments) - Circumferential Examination Angles: 0° through 65° (in 1° Increments)

Examination Summary: No suspected flaw indications were observed during the examinations. 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 were useful for monitoring search unit contact / coupling effectiveness during the examination.

Safety Nozzle B Weld Overlay Examination

Component Identification: N/SE Weld: II-PZR-01NSEW-18
SE/P Weld: 1-RC-FW-334

Examination Date: **October 11, 2007** Examination Time: **15:45 to 18:00**

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

Examination Coverage: 100% coverage of the Code-required volume was achieved during the examinations.

Axial Examination Angles: 0° through 83° (in 1° Increments) - Circumferential Examination Angles: 0° through 65° (in 1° Increments)

Examination Summary: No suspected flaw indications were observed during the examinations. 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 were useful for monitoring search unit contact / coupling effectiveness during the examination.

Safety Nozzle C Weld Overlay Examination

Component Identification: N/SE Weld: II-PZR-01NSEW-19
SE/P Weld: 1-RC-FW-329

Examination Date: **October 12, 2007** Examination Time: **16:09 to 17:16**

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

Examination Coverage: 100% coverage of the Code-required volume was achieved during the examinations.

Axial Examination Angles: 0° through 83° (in 1° Increments) - Circumferential Examination Angles: 0° through 65° (in 1° Increments)

Examination Summary: No suspected flaw indications were observed during the examinations. 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 were useful for monitoring search unit contact / coupling effectiveness during the examination.

Spray Nozzle Weld Overlay Examination

Component Identification: N/SE Weld: II-PZR-01NSEW-16
SE/P Weld: 1-RC-FW-328

Examination Date: **October 13, 2007** Examination Time: **14:42 to 15:20**

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

Examination Coverage: 100% coverage of the Code-required volume was achieved during the examinations.

Axial Examination Angles: 0° through 83° (in 1° Increments) - Circumferential Examination Angles: 0° through 63° (in 1° Increments)

Examination Summary: No suspected flaw indications were observed during the examinations. 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 were useful for monitoring search unit contact / coupling effectiveness during the examination.

Surge Nozzle Weld Overlay Examination

Component Identification: N/SE Weld: II-PZR-01NSEW-15
SE/P Weld: 1-RC-FW-3

Examination Date: **October 12, 2007** Examination Time: **00:27 to 01:42**

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

Examination Coverage: 100% coverage of the Code-required volume was achieved during the examinations.

Axial Examination Angles: 0° through 83° (in 1° Increments) - Circumferential Examination Angles: 0° through 71° (in 1° Increments)

Examination Summary: No suspected flaw indications were observed during the examinations. 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 were useful for monitoring search unit contact / coupling effectiveness during the examination.