Jeffrey B. Archie
Vice President, Nuclear Operations
803.345.4214

SCE&G®
A SCANA COMPANY

May 23, 2008

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

Dear Sir / Madam:

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS)
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12
INSERVICE INSPECTION RELIEF REQUEST RR-III-05
SUMMARY OF ULTRASONIC EXAMINATIONS OF PREEMPTIVE WELD OVERLAYS FOR PRESSURIZER NOZZLE LOCATIONS CONTAINING ALLOY 600 MATERIALS

References:
1. Jeffrey B. Archie (SCE&G) letter to Document Control Desk (NRC), Request to Use Alternatives to ASME Code Section XI Requirements for Application of Weld Overlay Repairs (RR-III-05), June 1, 2007
2. R. E. Martin (NRC) Letter to J. B. Archie (SCE&G) - Proposed Alternative for the Application of Weld Overlay on Dissimilar Metal Welds of Pressurizer Nozzles (TAC No. MD5765), March 25, 2008

On June 1, 2007, South Carolina Electric & Gas Company (SCE&G) 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 VCSNS's installation of full structural weld overlays on dissimilar metal welds of pressurizer nozzles during Refueling Outage 17. This request was approved by the NRC on March 25, 2008 (Reference 2).

In that request, SCE&G committed to submit to the NRC the following information regarding 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 Code, 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 repairs.

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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 May 12, 2008. 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 June 1, 2007, letter (Reference 1).

This document contains no new regulatory commitment.

Should you have any questions, please call Mr. Bruce Thompson at (803) 931-5042.

Very truly yours,

Jeffrey B. Archie

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

c: K. B. Marsh
S. A. Byrne
N. S. Carns
J. H. Hamilton
R. J. White
L. A. Reyes
R. E. Martin
NRC Resident Inspector
M. N. Browne
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INPO Records Center
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NSRC
RTS (C-07-00439)
File (810.19-1, 815.02 [IB2004-01])
DMS (RC-08-0077)

Virgil C. Summer Nuclear Station (VCSNS)

Inservice Inspection Relief Request RR-III-05

Summary of Ultrasonic Examinations

of

Preemptive Weld Overlays

for

Pressurizer Nozzle Locations Containing Alloy 600 Materials

Prepared by:

Structural Integrity Associates, Inc.

(6 Pages)

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May 19, 2008
SIR-08-125-NPS, Rev. 0

Mr. A. Pitts Turbeville
South Carolina Electric & Gas
V. C. Summer Nuclear Station
PO Box 88
Jenkinsville, SC 29065

Subject: Summary of Weld Overlay Ultrasonic Examinations for Pressurizer Nozzle Dissimilar Metal Welds for Alloy 600 Mitigation at Virgil C. Summer Nuclear Station

Reference: Request to Use Alternatives to ASME Code Section XI Requirements for Application of Weld Overlay Repairs (RR-III-05), Virgil C. Summer Nuclear Station, Docket No. 50/395, Operating License No. NPF-12

Dear Mr. Turbeville:

The following attachment is transmitted in support of South Carolina Electric & Gas commitments in the above-referenced request for alternative:

Attachment: A report summarizing the ultrasonic examinations performed on the Virgil C. Summer Nuclear Station weld overlays. The examinations were performed using Structural Integrity's PDI qualified ultrasonic examination procedure and examiners. No flaw indications were detected in the overlays, and thus no disposition of indications was required.

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

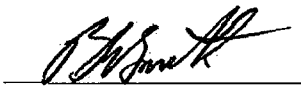
Prepared by:

John J. Hayden — 05/13/08
John J. Hayden — Date
Sr. Consultant, NDE Level III

Verified by:

Harold E. Queen — 05/19/08
Harold E. Queen — Date
TSU-NDE Executive Director

Approved by:



05/19/08
Date

Barry W. Smith, P.E.
Senior Consultant

Attachment

cc: Nick Jenkins
Project File: VCS-07Q-402

Attachment

Summary of Weld Overlay Ultrasonic Examinations for Pressurizer Nozzle Dissimilar Metal Welds for Alloy 600 Mitigation at Virgil C. Summer Nuclear Station

Ultrasonic Examination Procedure

SI-UT-126, Revision 3, *Procedure for the Phased Array Ultrasonic Examination of Weld Overlaid Similar and Dissimilar Metal Welds*, was used for examinations of the Pressurizer Surge, Spray and Safety/Relief Valve Nozzle weld overlays (WOL). This procedure, and the examiners who applied the procedure, are qualified through the PDI Program at the EPRI NDE Center.

Surge Nozzle Weld Overlay Examination

Component Identification: Surge (1) - 4500-14(OL), 4500A-1(DM), 4500A-2 (SM)
Examination Date: 10 May, 2008
Examination Time: 13:45 to 15:31
Weld Overlay Regions Examined: Overlay, Weld and Base Material (Outer 25%) Dissimilar Metal (DM) Weld and Adjacent Stainless Steel (SS) Weld

Inclusive Range of Axial Examination Angles: 0° through 84°
Inclusive Range of Circumferential Examination Angles: 0° through 70°

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. During the course of the examinations, 100% coverage of the weld overlay material and 100% coverage of the Code-required volume for the DM weld and the adjacent SS weld was achieved.

Spray Nozzle Weld Overlay Examination

Component Identification: Spray (2) – 4503-47(OL), 4503-46(DM), 4503-45 (SM)
Examination Date: May 11 & 12, 2008
Examination Time: 23:50 (05/11/08) to 01:00 (05/12/08)
Weld Overlay Regions Examined: Overlay, Weld and Base Material (Outer 25%) Dissimilar Metal (DM) Weld and Adjacent Stainless Steel (SS) Weld

Inclusive Range of Axial Examination Angles: 0° through 84°
Inclusive Range of Circumferential Examination Angles: 0° through 61°

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. During the course of the examinations, 100% coverage of the weld overlay material and 100% coverage of the Code-required volume for the DM weld and the adjacent SS weld was achieved.

Relief Valve Nozzle Weld Overlay Examination
Component Identification: PORV(3) – 4502-24(OL), 4502-1(DM), 4502-2 (SM)
Examination Date: May 8, 2008
Examination Time: 1302 to 1617
Weld Overlay Regions Examined: Overlay, Weld and Base Material (Outer 25%) Dissimilar Metal (DM) Weld and Adjacent Stainless Steel (SS) Weld

Inclusive Range of Axial Examination Angles: 0° through 85°
Inclusive Range of Circumferential Examination Angles: 0° through 65°

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. During the course of the examinations, 100% coverage of the weld overlay material and 100% coverage of the Code-required volume for the DM weld and the adjacent SS weld was achieved.

Safety Valve Nozzle Weld Overlay Examination

Component Identification: SRV(4A) – 4501-36(OL), 4501-23(DM), 4501-24 (SM)
Examination Date: May 8, 2008
Examination Time: 1302 to 1617
Weld Overlay Regions Examined: Overlay, Weld and Base Material (Outer 25%) Dissimilar Metal (DM) Weld and Adjacent Stainless Steel (SS) Weld

Inclusive Range of Axial Examination Angles: 0° through 85°
Inclusive Range of Circumferential Examination Angles: 0° through 65°

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. During the course of the examinations, 100% coverage of the weld overlay material and 100% coverage of the Code-required volume for the DM weld and the adjacent SS weld was achieved.

Safety Valve Nozzle Weld Overlay Examination

Component Identification: SRV(4B) – 4501-35, 4501-12(DM), 4501-13 (SM)
Examination Date: May 8, 2008
Examination Time: 1302 to 1617
Weld Overlay Regions Examined: Overlay, Weld and Base Material (Outer 25%) Dissimilar Metal (DM) Weld and Adjacent Stainless Steel (SS) Weld

Inclusive Range of Axial Examination Angles: 0° through 85°
Inclusive Range of Circumferential Examination Angles: 0° through 65°

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. During the course of the examinations, 100% coverage of the weld overlay material and 100% coverage of the Code-required volume for the DM weld and the adjacent SS weld was achieved.

Safety Valve Nozzle Weld Overlay Examination

Component Identification: SRV(4C) – 4501-34, 4501-1(DM), 4501-2 (SM)
Examination Date: May 11 & 12, 2008
Examination Time: 23:47 (05/11/08) to 00:50 (05/12/08)
Weld Overlay Regions Examined: Overlay, Weld and Base Material (Outer 25%) Dissimilar Metal (DM) Weld and Adjacent Stainless Steel (SS) Weld

Inclusive Range of Axial Examination Angles: 0° through 85°
Inclusive Range of Circumferential Examination Angles: 0° through 65°

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. During the course of the examinations, 100% coverage of the weld overlay material and 100% coverage of the Code-required volume for the DM weld and the adjacent SS weld was achieved.