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December 29, 1999

LCV-1280-A

Docket No.: 50-425

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

Ladies and Gentlemen:

**VOGTLE ELECTRIC GENERATING PLANT
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION -
REVISION 8 TO FIRST TEN-YEAR INTERVAL
INSERVICE INSPECTION PROGRAM**

Pursuant to an October 8, 1999, request for additional information from the NRC Project Manager for Vogtle Electric Generating Plant (VEGP), enclosed is our formal response to questions concerning Revision 8 to the VEGP Unit 2 First Ten-Year Interval Inservice Inspection Program. Revision 8 to the subject program was submitted to the NRC by our letter LCV-1280 dated November 28, 1998.

Should there be any questions in this regard, please contact this office.

Sincerely,

J. B. Beasley, Jr.

JBB/JAE/

Enclosure: Response to Request for Additional Information, re: Vogtle Electric
Generating Plant, Unit 2, First Ten-Year Interval Inservice Inspection
Program

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**ENCLOSURE
TO
SOUTHERN NUCLEAR OPERATING COMPANY (SNC)
LETTER LCV-1280-A**

**RESPONSE
TO
REQUEST FOR ADDITIONAL INFORMATION, RE:
REVISION 8 TO VOGTLE ELECTRIC GENERATING PLANT, UNIT 2,
FIRST TEN-YEAR INTERVAL INSERVICE INSPECTION PROGRAM**

NRC REQUEST FOR ADDITIONAL INFORMATION 2.1:

"Request for Relief RR-20 (Revision 1) - The Code requires 100% volumetric and surface examinations of the welds identified in the licensee's submittal. The licensee stated that complete examination of these welds is limited by physical limitations due to geometric configuration. The table provided in the licensee's submittal provides minimal information on coverages achieved. Please provide (sic) specific description of geometrical constraints or interferences, (sic) and drawings or sketches showing the specific configurations of the subject welds to demonstrate the impracticality of meeting the Code examination requirements. This information is needed to support the determination that the subject Code requirements are impractical in accordance with 10 CFR 50.55a(g)(6)(i)."

SNC RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION 2.1:

The welds in Attachment 1 to Request for Relief RR-20 were added after the 2R6 outage, which was the first outage after updating to the 1989 Edition of the ASME Section XI Code from the 1983 Edition of the ASME Section XI Code. These welds are limited due to the additional requirement of Supplement 4 of Appendix III, referenced below.

Article III, Paragraph III-4430, of the 1989 Edition of ASME Section XI states, "The angle beam examination for reflectors transverse to the weld shall be performed on the weld crown on a single scan path to examine the weld root by one-half V path in two directions along the weld." This requirement is the same for the 1983 Edition of the ASME Section XI Code.

In addition to the above requirement, Supplement 4 (Austenitic and Dissimilar Metal Welds) of Appendix III was added to the 1989 Edition of ASME Section XI Code, which requires "The angle beam examination for reflectors transverse to the weld shall be performed in two directions covering the minimum area from 1/2 in. from one side of the weld crown to 1/2 in. from the other side of weld crown including the crown."

The Code coverages in question are Pipe to Valve and Pipe to Tee welds (see Attachment 1 to Request for Relief RR-20, Revision 8). These welds have configurations such that only scanning from the pipe side can be performed (up or down scans). For reflectors oriented parallel to the weld, 100% coverage can be obtained with this scan from the pipe side. No scans or coverages can be obtained from the Valve or Tee side. For reflectors oriented transverse to the weld (clockwise and counter-clockwise, i.e., cw and ccw, respectively), scanning can only be performed on the pipe side and the weld obtaining approximately 75% coverage. Please refer to Figure 1 that provides both a photograph and a diagram of the area of interest.

Typical Code coverage for scanning for transverse reflectors is normally around 75%; however, depending on the precise contour of the surface, more or less coverage may be obtained.

PHOTOGRAPH - TYPICAL VEGP-2 VALVE OR TEE WELD CONFIGURATION

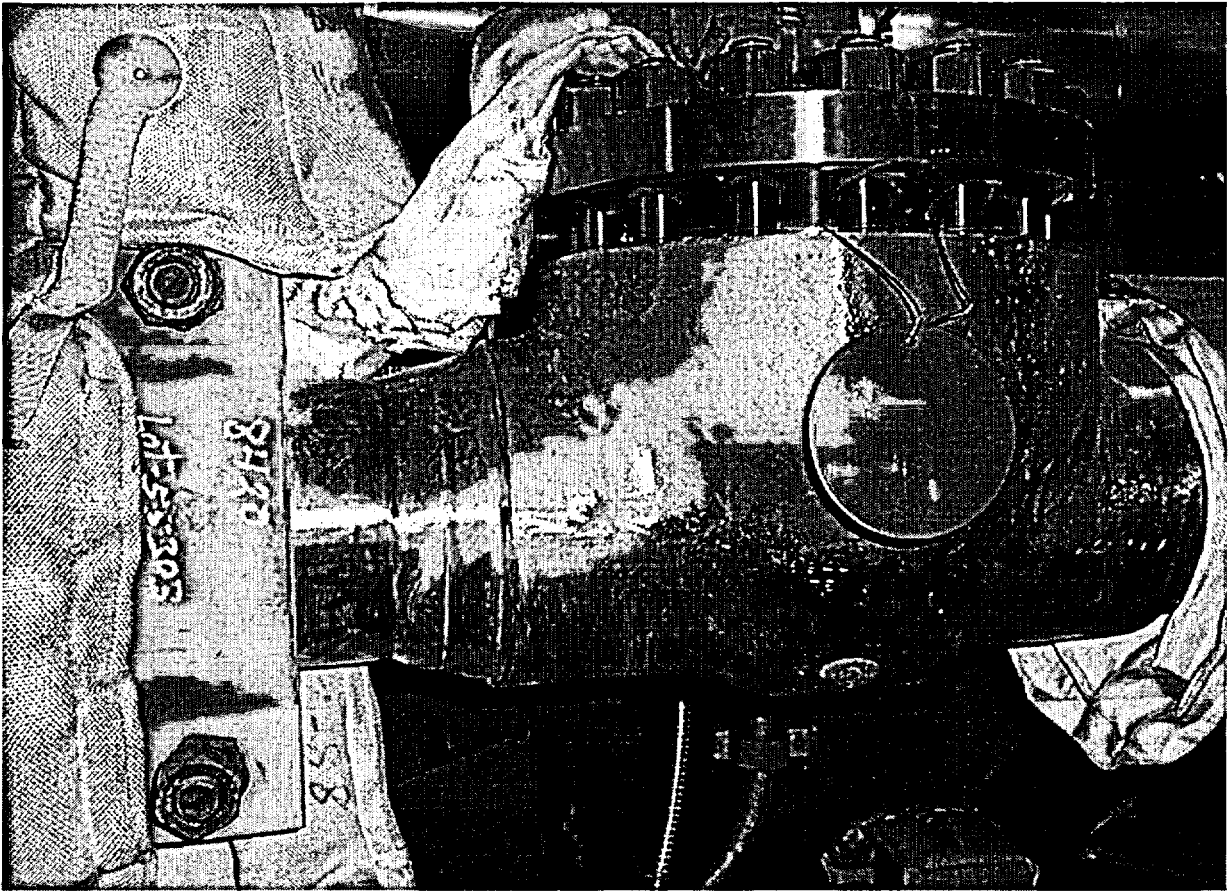


DIAGRAM - TYPICAL VEGP-2 VALVE OR TEE CONFIGURATION

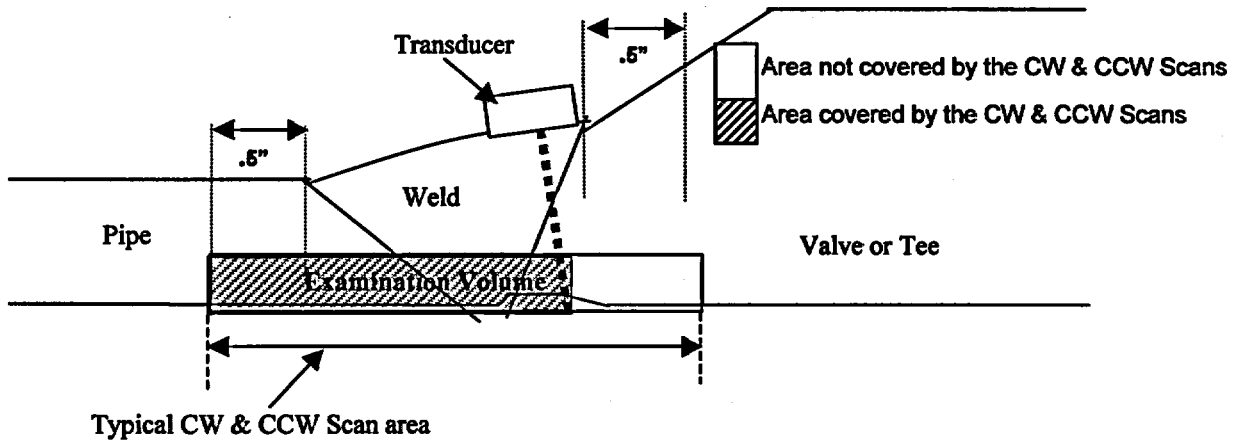


FIGURE 1

NRC REQUEST FOR ADDITIONAL INFORMATION 2.2:

"Request for Relief RR-30 (Part C-B) - The Code requires 100% volumetric and surface examinations of the welds identified in the licensee's submittal. The licensee stated that complete examination of these welds is limited by physical limitations due to component configuration. The table provided in the licensee's submittal provides minimal information on coverages achieved. Please provide (sic) specific description of geometrical constraints or interferences, (sic) and drawings or sketches showing the specific configurations of the subject welds to demonstrate the impracticality of meeting the Code examination coverage requirements. This information is needed to support the determination that the subject Code requirements are impractical in accordance with 10 CFR 50.55a(g)(6)(i). Additionally, it is unclear whether relief is for volumetric coverage, surface coverage, or both. Provide clarification detailing the specific examination coverages requiring relief."

SNC RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION 2.2:

Article I, Paragraph I-2200 of the 1989 Edition of ASME Section XI requires Vessel Welds less than or equal to 2 inches in thickness to be examined in accordance with Appendix III. Appendix III, Article III, Paragraph III-4430 states, "The angle beam examination for reflectors transverse to the weld shall be performed on the weld crown on a single scan path to examine the weld root by one-half V path in two directions along the weld." In addition to this requirement, Supplement 4 of Appendix III (Austenitic and Dissimilar Metal Welds) states, "The angle beam examination for reflectors transverse to the weld shall be performed in two directions covering the minimum area from 1/2 in. from one side of the weld crown to 1/2 in. from the other side of the weld crown including the crown."

The Code examination coverage in question is the Inlet Nozzle to Tube Side Shell Welds (please refer to Table 1). Because of the configuration of these welds, the only scan that can be performed for reflectors parallel to these welds is up or down. For reflectors oriented parallel to the weld, 100% coverage can be obtained with this scan. For reflectors oriented transverse to the weld (clockwise and counter-clockwise, i.e., cw and ccw, respectively), no coverage can be obtained resulting in a total Code coverage of 50%. Please refer to Figure 2 that provides both a photograph and a diagram of the area of interest.

SNC RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION 2.2
(continued):

TABLE 1

(Residual Heat Removal (RHR) Heat Exchanger)

Identification No.	Code Catgy.	Item No.	Description	Percentage Examined	Restriction
21205-E6-002-W04	C-B	C2.21	Nozzle to Shell Weld	100% - PT 50% - UT	Limited exam due to component configuration.
21205-E6-002-W05	C-B	C2.21	Nozzle to Shell Weld	100% - PT 50% - UT	Limited exam due to component configuration.

PHOTOGRAPH - TYPICAL VEGP-2 RHR HEAT EXCHANGER (HX) NOZZLE TO SHELL WELDS

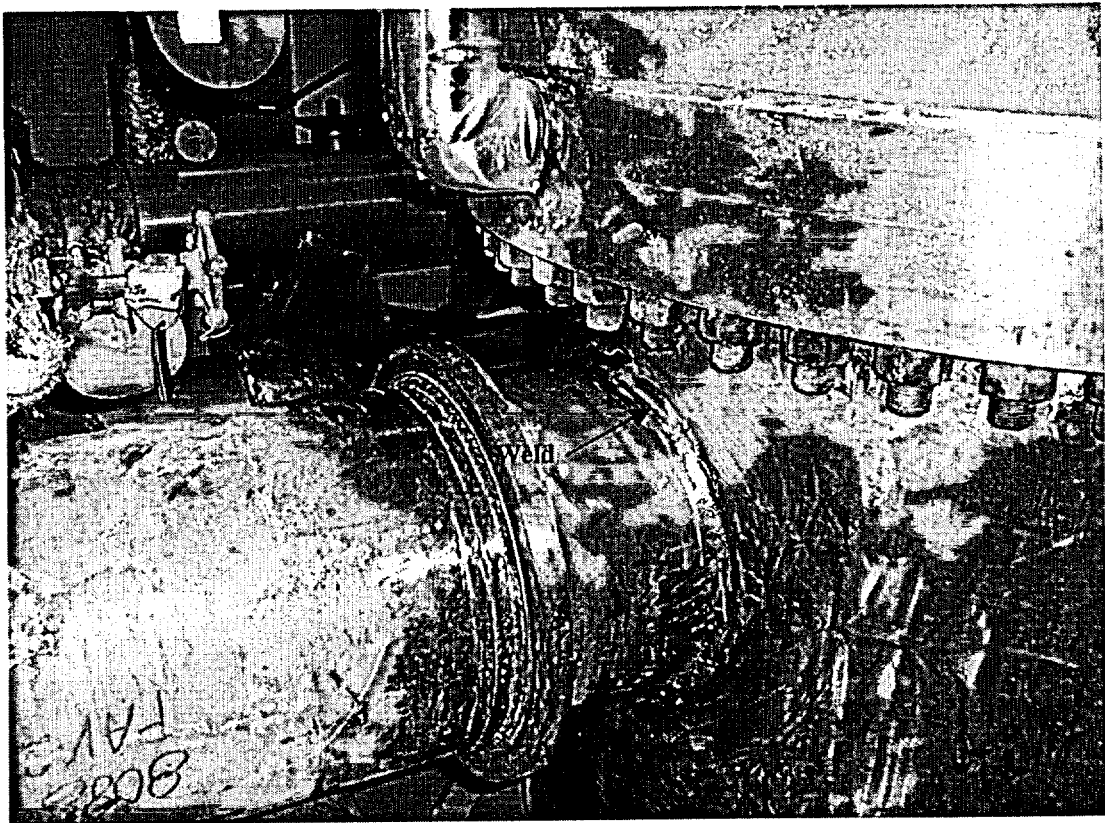


DIAGRAM - TYPICAL VEGP-2 RHR HX NOZZLE TO SHELL

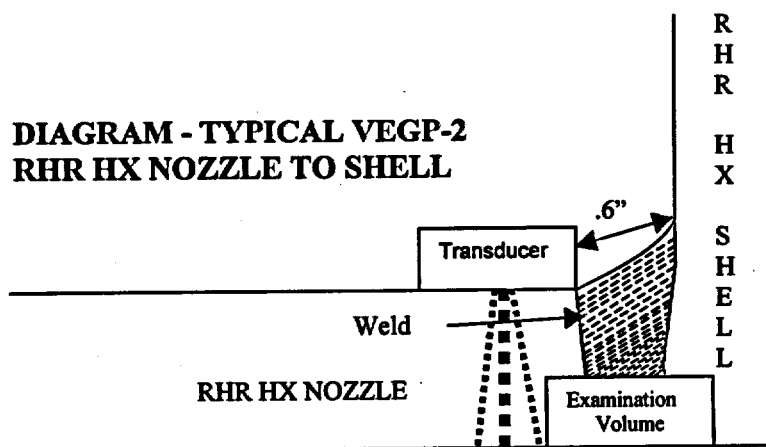


FIGURE 2

NRC REQUEST FOR ADDITIONAL INFORMATION 2.3:

"Request for Relief RR-34 (Part C-F-1) - The Code requires 100% volumetric and surface examinations of the welds identified in the licensee's submittal. The licensee stated that complete examination of these welds is limited by physical limitations due to geometric configuration, (sic) and component obstructions. The table provided in the licensee's submittal provides minimal information on coverages achieved. Please provide (sic) specific description of geometrical constraints or interferences, (sic) and drawings or sketches showing the specific configurations of the subject welds to demonstrate the impracticality of meeting the Code examination coverage requirements. This information is needed to support the determination that the subject Code requirements are impractical in accordance with 10 CFR 50.55a(g)(6)(i)."

SNC RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION 2.3:

The welds in Attachment 1 to Request for Relief RR-34, Revision 8, were added after the 2R6 outage, which was the first outage after updating to the 1989 Edition of ASME Section XI Code from the 1983 Edition of the ASME Section XI Code. These welds are limited due to the additional requirement of Supplement 4 of Appendix III, as referenced below.

Article III, Paragraph III-4430, of the 1989 Edition of ASME Section XI states, "The angle beam examination for reflectors transverse to the weld shall be performed on the weld crown on a single scan path to examine the weld root by one-half V path in two directions along the weld." This requirement is the same for the 1983 Edition of the ASME Section XI Code.

In addition to the above requirement, Supplement 4 (Austenitic and Dissimilar Metal Welds) of Appendix III was added to the 1989 Edition of ASME Section XI Code, which requires "The angle beam examination for reflectors transverse to the weld shall be performed in two directions covering the minimum area from 1/2 in. from one side of the weld crown to 1/2 in. from the other side of the weld crown including the crown."

The Code coverages in question are Pipe to Valve and Valve to Elbow welds (see Attachment 1 to Request for Relief RR-34, Revision 8). These welds have configurations such that only scanning from the pipe or elbow side can be performed (up or down scans). For reflectors oriented parallel to the weld, normally 100% coverage can be obtained, depending upon material type, with this scan from the pipe or elbow side. No scans or coverages can be obtained from the Valve side. For reflectors oriented transverse to the weld (clockwise and counter-clockwise scans, i.e., cw and ccw, respectively), scanning can only be performed on the pipe side and the weld obtaining approximately 75% coverage. Please refer to Figure 3 that provides both a photograph and a diagram of the area of interest. Typical Code coverage for scanning for transverse reflectors is normally around 75%; however, depending on the precise contour of the

**SNC RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION 2.3
(continued):**

surface, more or less coverage may be obtained.

Additional Limitation: Weld 21204-122-6 (as identified in Attachment 1 to Request for Relief RR-34) is fabricated from SA-376 Grade Material. As a result of a severely banded microstructure, this material exhibits severe angular variations and significant attenuation problems during a typical shear-wave ultrasonic examination. A refracted-longitudinal (RL) wave, which is a 1/2 node examination technique, was found to be the best technique for examining this type of material. The Refracted Longitudinal technique being used will also produce a limitation if the examination can only be performed from the pipe side due to 1/2 node calibration. In addition to this limitation, this weld has a welded restraint that is 6 inches long and 3.3 inches from the weld centerline at top dead center and bottom dead center. Please refer to Figure 4 that provides photographs of the area of interest.

PHOTOGRAPH - TYPICAL VEGP-2 VALVE TO PIPE WELD CONFIGURATION

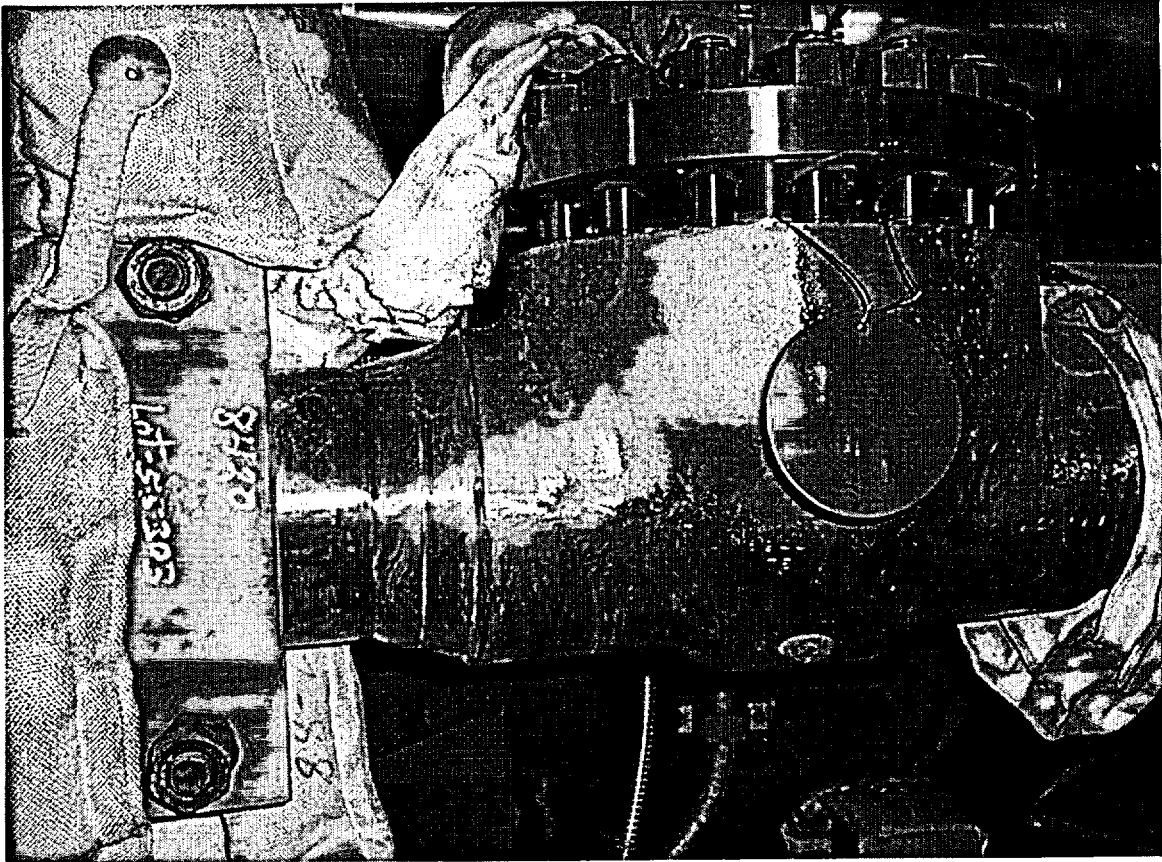


DIAGRAM-TYPICAL VEGP-2 VALVE TO PIPE WELD CONFIGURATION

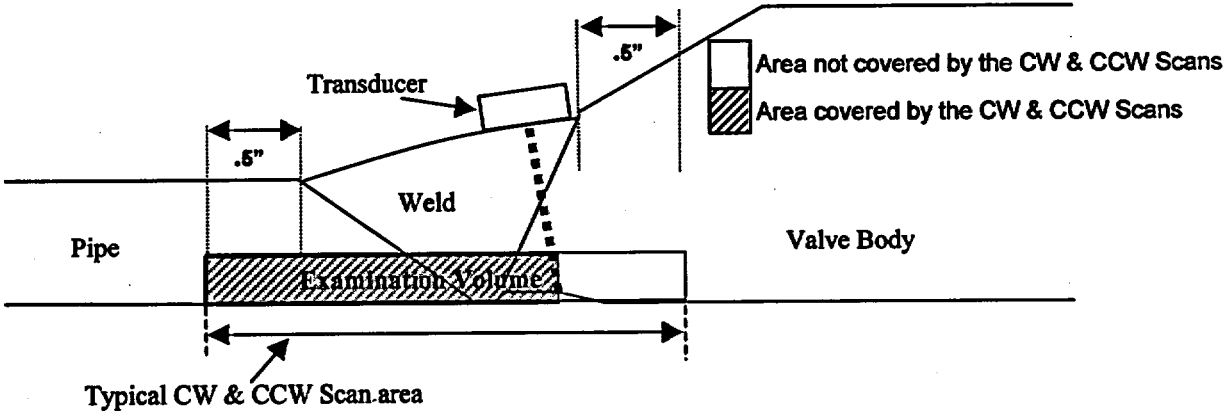


FIGURE 3

**PHOTOGRAPHS - VEGP-2 WELD 21204-122-6
& WELDED RESTRAINT INTERFERENCE**

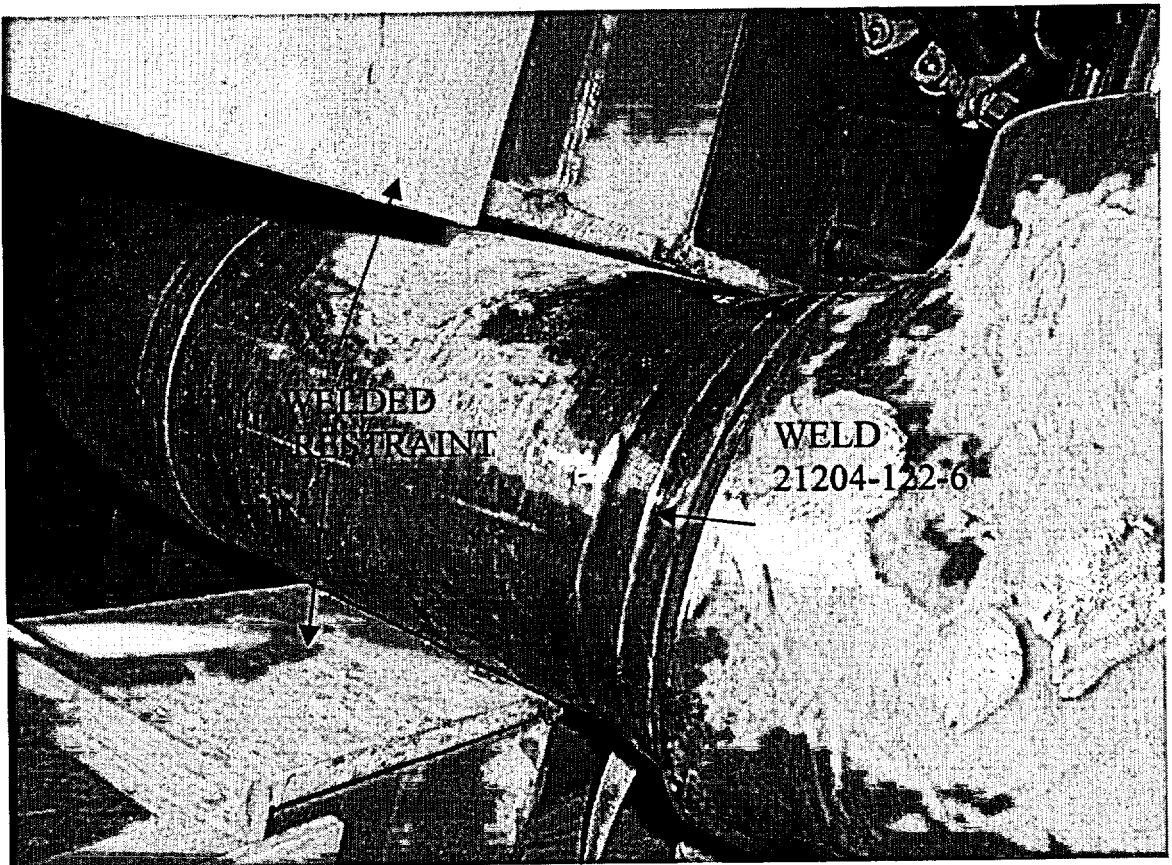
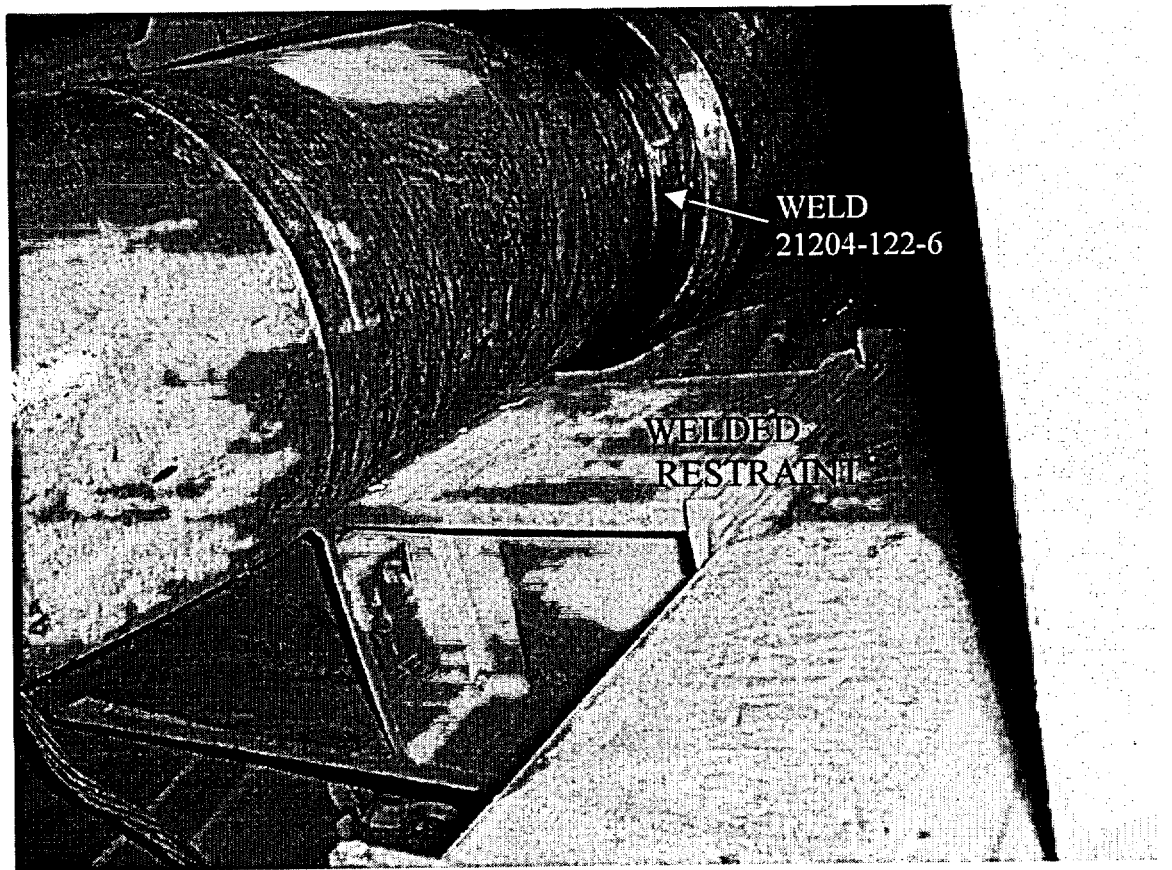


FIGURE 4

NRC REQUEST FOR ADDITIONAL INFORMATION 2.4:

"Request for Relief RR-64 - In the "Code Requirement for Which Relief is Requested" portion of the submittal, the licensee stated the "Relief is requested from the requirements of IWA-4000 and IWA-7000 of the 1983 Edition with Addenda through Summer 1983 for piping, valves, and fittings 1-inch NPS and smaller." In the "Basis for Relief" portion of the relief the licensee stated that "...relief is requested from the record keeping requirements for repairs to piping and components 1-inch NPS and smaller."

IWA-4000 and IWA-7000 contain multiple requirements relating to Repair and Replacements, including: Repair Program Requirements, Inspection, Materials, Welding and Welder Qualification, Pressure Testing, Examinations, Records, etc. Based upon the multiple requirements listed in IWA-4000 and IWA-7000 (sic) it is unclear what specific code requirement(s) the licensee is seeking relief from. The request for relief (sic) as written (sic) appears generic in nature and does not clearly identify the specific requirement(s) for which relief is required, i.e., is the licensee seeking relief from all of IWA-4000 and IWA-7000 or only IWA-7000 concerning records? Provide the specific code requirements (include paragraphs and subparagraphs) for which relief is required."

SNC RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION 2.4:

Relief is being requested from fulfilling the administrative requirement to document any past repairs to components 1-inch nominal pipe size (NPS) and smaller, e.g., piping, valves, fittings, etc., should they have occurred and that may have been inadvertently exempted from the Code requirements. Specifically, this would include the record keeping requirements of IWA-4700, IWA-6220, and IWA-6340 in the 1983 Edition of the ASME Section XI Code with Summer 1983 Addenda.

Please note that VEGP-2 Request for Relief RR-64 is virtually identical in content to the similarly numbered request for relief submitted for VEGP-1 by our letter LCV-1124 dated December 1, 1997, and later supplemented by our letter LCV-1124-A dated May 26, 1998. VEGP-1 Request for Relief RR-64 was subsequently approved by the NRC as documented in its letter dated January 29, 1999. In its evaluation, the NRC stated the following, in part, concerning VEGP-1 Request for Relief RR-64:

"As stated by the licensee, imposition of the Code requirements would necessitate a significant effort to review the 50,000 work orders to complete paperwork that is not required by later Code addenda. This effort could potentially divert plant personnel from other activities that could affect plant safety. Considering that the recordkeeping (sic) activities would require documentation of repairs that are not required to be documented by later Codes, the NRC staff concludes that imposition of the applicable Code requirements would result in an undue hardship without a compensating increase in the level of quality and safety. Therefore, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(ii)."

**SNC RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION 2.4
(continued):**

Request for Relief RR-64 for VEGP-2 is virtually identical to that previously submitted for VEGP-1 with some minor exceptions. Examples of differences between the VEGP-2 and VEGP-1 requests for relief include the number of the VEGP unit involved, the number of work orders involved (~31,000 for VEGP-2 vice ~52,000 for VEGP-1), and the incorporation of information in RR-64 for VEGP-2 similar to that provided as a supplement for VEGP-1 RR-64. Otherwise, there are no significant differences between the two requests for relief. As a result, SNC requests that the NRC authorize Request for Relief RR-64 for VEGP-2 pursuant to 10 CFR 50.55a(a)(3)(ii).