



MAY 22 2001

SERIAL: HNP-01-077
10 CFR 50.55a

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
INSERVICE INSPECTION PROGRAM RELIEF REQUEST NO. 2RG-010
ALTERNATIVE NDE REQUIREMENTS FOR REPAIR/REPLACEMENT ACTIVITIES

Dear Sir or Madam:

In accordance with 10 CFR 50.55a(a)(3)(i), Carolina Power & Light Company (CP&L) requests relief for the Harris Nuclear Plant (HNP) from the requirements of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI, of the 1989 Edition as discussed in the enclosed Relief Request No. 2RG-010.

HNP is committed to implement it's Inservice Inspection (ISI) Program in accordance with the requirements of ASME Code Section XI, of the 1989 Edition with no Addenda. Additionally, HNP's ISI Program invokes Code Case N-416-1. Code Case N-416-1 requires NDE to be performed in accordance with methods and acceptance criteria of the applicable Subsection of the 1992 Edition of ASME Section III. Repair and replacement requirements for the Containment Liner are in accordance with ASME Code Section XI 1992 Edition through 1992 Addenda, Subsection IWE. Specifically, relief is requested to substitute nondestructive examination (NDE) methods specified in the Construction Code (ASME Section III) and Code Case N-416-1 with alternate examination methods, a combination of methods, or newly developed techniques provided the Authorized Nuclear Inservice Inspector (Inspector) is satisfied that the results are demonstrated to be equivalent or superior to those specified in the Construction Code or Code Case N-416-1 during ASME Section XI Repair and Replacement Activities.

The proposed alternative provides an acceptable level of quality and safety since the examination will use methods, combination of methods, or newly developed techniques that are equivalent or superior to the Construction Code or Code Case N-416-1. The Inspector must be satisfied that the alternative will provide an acceptable level of quality and safety. Implementation of the requested relief will significantly reduce the number of radiographs performed in HNP's Radiologically Controlled Area. This will provide significant reduction in radiation exposure, outage duration, and cost associated with performing the examinations without reducing the level of quality and safety.

Harris Nuclear Plant
5413 Shearon Harris Road
New Hill, NC 27562

A047

It is requested that the NRC review this relief request prior to July 1, 2001 to avoid adversely impacting planned activities during Refueling Outage 10, currently scheduled to begin September 22, 2001.

Please refer any question regarding this submittal to Mr. E. McCartney at (919) 362-2661.

Sincerely,



R. J. Field
Manager, Regulatory Affairs

MGW

Enclosures

c: Mr. J. B. Brady (NRC Senior Resident Inspector, HNP)
Mr. Rich Laufer (NRR Project Manager, HNP)
Mr. L. A. Reyes (NRC Regional Administrator, Region II)

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
INSERVICE INSPECTION PROGRAM RELIEF REQUEST NO. 2RG-010
ALTERNATIVE NDE REQUIREMENTS FOR REPAIR/REPLACEMENT ACTIVITIES

COMPONENT FOR WHICH RELIEF IS REQUESTED:

This request is for Class 1 and 2 piping and MC components subject to American Society of Mechanical Engineers (ASME) Section XI Repair and Replacement activities at the Harris Nuclear Plant (HNP). Enclosure 2 contains a list of welds for which HNP is requesting relief from Construction Code (ASME Section III) requirements and Code Case N-416-1.

CODE REQUIREMENT(S):

The ASME Code Section XI, 1989 Edition with no Addenda, and 1992 Edition with 92 Addenda (for Subsection IWE), paragraph IWA-2240 allows alternative examination methods, a combination of methods, or newly developed techniques to be substituted for the methods specified (Division 1 of ASME Section XI), provided the Authorized Nuclear Inservice Inspector (Inspector) is satisfied that the results are demonstrated to be equivalent or superior to those of the specified method.

CODE REQUIREMENT FROM WHICH RELIEF IS REQUESTED:

Relief is requested to substitute nondestructive examination (NDE) methods specified in the Construction Code and Code Case N-416-1 with alternate examination methods, a combination of methods, or newly developed techniques provided the Inspector is satisfied that the results are demonstrated to be equivalent or superior to those specified in the Construction Code or Code Case N-416-1 during ASME Section XI Repair and Replacement Activities.

BASIS FOR RELIEF:

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested on the basis that the proposed alternatives would provide an acceptable level of quality and safety.

The 1998 Edition of the ASME Code Section XI (IWA-2240 and IWA-4520 (c)) allows alternative examination methods, a combination of methods, or newly developed techniques to be substituted for methods specified in the Construction Code, provided the Inspector is satisfied that the results are demonstrated to be equivalent or superior to those specified in the Construction Code methods. The Nuclear Regulatory Commission (NRC) has approved the use of the 1998 Edition of ASME Code Section XI for Calvert Cliffs Nuclear Power Plant, Units Nos. 1 and 2 (TAC Nos. MA4647 and MA4648 – letter dated 4/5/00). The Safety Evaluation imposed limitations, modifications and exceptions to the 1998 Edition. However, paragraphs IWA-2240 and IWA-4520 (c) were deemed acceptable to the NRC staff.

Implementation of the requested relief will significantly reduce the number of radiographs in HNP Radiologically Controlled Area (RCA). This will provide significant reduction in radiation exposure, outage duration, and cost associated with performing the examination without reducing the level of quality and safety.

ALTERNATIVE EXAMINATION(S):

Alternative examination methods, a combination of methods, or newly developed techniques will be substituted for methods specified in the Construction Code or Code Case N-416-1, provided the Inspector is satisfied that the results are demonstrated to be equivalent or superior to those specified in the Construction Code or Code Case N-416-1 methods applied during ASME Section XI Repair and Replacement activities.

JUSTIFICATION FOR REQUESTING RELIEF:

The proposed alternative provides an acceptable level of quality and safety since the examination will use methods, combination of methods, or newly developed techniques that are equivalent or superior to the Construction Code or Code Case N-416-1. The Inspector must be satisfied that the alternative will provide an acceptable level of quality and safety.

The volume examined using the alternative technique will be equal to or greater than that required by the Construction Code. No changes are being made to the acceptance criteria nor will there be any changes to the NDE personnel qualifications. ASME Section III will be used for the UT construction acceptance criteria. Any indication with a crack-like signature will be evaluated and sized using tip diffracted techniques. Personnel and procedures used to perform the examinations will be qualified under the Electric Power Research Institute-Performance Demonstration Initiative (PDI) Program. The proposed personnel and procedure qualifications far exceed the requirements of the original construction code, which required NDE personnel to be qualified in accordance with SNT-TC-1A without demonstrating the ability to detect and length-size actual cracks. Since the PDI procedures were qualified with cracks that were contained within the lower 1/3 volume, a supplemental demonstration will be performed to show equivalency for detection and length-sizing of mid-wall flaws implanted in mock-ups. In addition, welds will be conditioned to allow scanning across the weld with double-sided access where possible to ensure the Construction Code coverage requirements are met.

The specific application of this relief request will be the use of an ultrasonic (UT) inspection technique in lieu of radiography (RT) as specified by the Construction Code. It is understood that there are some limitations associated with angle beam UT with respect to flaws oriented on a plane that is parallel with the direction of the sound beam. It is for this reason that two angles (i.e., 45° and 60°) are typically used and scans are performed from both sides of the weld. This is a proven technique for finding planar oriented flaws. However, this technique is not optimal for detection of laminar flaws, as these types of flaws tend to allow the sound beam to reflect away from instead of back to the transducer when using the pulse echo technique. To address this limitation, a supplemental 0° longitudinal wave examination is performed.

Radiography also has limitations with respect to flaw orientation. Fusion type flaws oriented perpendicular to the plane of radiation sometimes tend to "fade" into the surrounding material with little change in density due to the lack of volume between the upper and lower faces of the flaw. Likewise, planar flaws that are not perfectly parallel to the plane of radiation can diffuse into the surrounding material. Improving planar flaw detectability with radiography (for oriented flaws) would require positioning the radioactive source at several angles incident to the surface of the part. Doing this in a field application would increase the time required to expose the radioactive source and therefore increase the probability of unwanted exposure to personnel.

As proposed in this relief request, using alternative PDI qualified ultrasonic examination personnel and techniques would provide results equivalent or superior to the single axis radiography technique specified by the Construction Code provided the optimal beam angles are used to detect both planar and laminar flaws.

IMPLEMENTATION SCHEDULE:

This Relief Request (2RG-010) is applicable to the HNP Second 10-Year Interval Inservice Inspection Program.

Relief Request No. 2RG-010

| SYSTEM | DRAWING NO. | FIELD WELD NO. | MATERIAL SIDE A | SIZE SIDE A | MATERIAL SIDE B | SIZE SIDE B |
|--------------------------|--------------------|-----------------------|------------------------|--------------------|------------------------|--------------------|
| Containment Equip. Hatch | SK-9700805-C-1001 | FW-1 | SA-516 GR 70 | 24' x 1-1/4" | SA-516 GR 70 | 24' x 1-1/4" |
| MS | SK-9700807-M-2041 | 1-MS-77-FW-317 | SA-508 Cl 3a | 32" x 1.051" | SA-234 WPB | 32" x 1.051" |
| MS | SK-9700807-M-2041 | 1-MS-77-FW-312 | SA-106 GR C | 32" x 1.051" | SA-106 GR C | 32" x 1.051" |
| MS | SK-9700807-M-2040 | 1-MS-72-FW-335 | SA-508 Cl 3a | 32" x 1.051" | SA-234 WPB | 32" x 1.051" |
| MS | SK-9700807-M-2040 | 1-MS-72-FW-330 | SA-106 GR C | 32" x 1.051" | SA-106 GR C | 32" x 1.051" |
| MS | SK-9700807-M-2042 | 1-MS-80-FW-315 | SA-508 Cl 3a | 32" x 1.051" | SA-234 WPB | 32" x 1.051" |
| MS | SK-9700807-M-2042 | 1-MS-80-FW-310 | SA-106 GR C | 32" x 1.051" | SA-106 GR C | 32" x 1.051" |
| FW | SK-9700807-M-2000 | 1-FW-FW-1 | SA-106 GR B | 16" sch 80 | SA-234 WP11 | 16" sch 80 |
| FW | SK-9700807-M-2000 | 1-FW-FW-2 | SA-234 WP11 | 16" sch 80 | SA-234 WP11 | 16" sch 80 |
| FW | SK-9700807-M-2000 | 1-FW-FW-3 | SA-234 WP11 | 16" sch 80 | SA-335 P11 | 16" sch 80 |
| FW | SK-9700807-M-2000 | 1-FW-FW-4 | SA-234 WP11 | 16" sch 80 | SA-335 P11 | 16" sch 120 |
| FW | SK-9700807-M-2000 | 1-FW-FW-7 | SA-234 WP11 | 16" sch 120 | SA-508 Cl 3a | 16" sch 120 |
| FW | SK-9700807-M-2001 | 1-FW-FW-1 | SA-106 GR B | 16" sch 80 | SA-335 P11 | 16" sch 80 |
| FW | SK-9700807-M-2001 | 1-FW-FW-3 | SA-234 WP11 | 16" sch 80 | SA-335 P11 | 16" sch 80 |
| FW | SK-9700807-M-2001 | 1-FW-FW-5 | SA-234 WP11 | 16" sch 80 | SA-335 P11 | 16" sch 80 |
| FW | SK-9700807-M-2001 | 1-FW-FW-7 | SA-234 WP11 | 16" sch 80 | SA-335 P11 | 16" sch 120 |
| FW | SK-9700807-M-2001 | 1-FW-FW-10 | SA-234 WP11 | 16" sch 120 | SA-508 Cl 3a | 16" sch 120 |
| FW | SK-9700807-M-2002 | 1-FW-FW-1 | SA-106 GR B | 16" sch 80 | SA-234 WP11 | 16" sch 80 |
| FW | SK-9700807-M-2002 | 1-FW-FW-2 | SA-234 WP11 | 16" sch 80 | SA-234 WP11 | 16" sch 80 |
| FW | SK-9700807-M-2002 | 1-FW-FW-3 | SA-234 WP11 | 16" sch 80 | SA-335 P11 | 16" sch 80 |
| FW | SK-9700807-M-2002 | 1-FW-FW-5 | SA-234 WP11 | 16" sch 80 | SA-335 P11 | 16" sch 120 |
| FW | SK-9700807-M-2002 | 1-FW-FW-7 | SA-234 WP11 | 16" sch 120 | SA-508 Cl 3a | 16" sch 120 |
| AFW | SK-9700807-M-2006 | 1-AF-FW-1 | SA-106 GR B | 6" sch 80 | SA-234 WPB | 6" sch 80 |

Relief Request No. 2RG-010

| SYSTEM | DRAWING NO. | FIELD WELD NO. | MATERIAL SIDE A | SIZE SIDE A | MATERIAL SIDE B | SIZE SIDE B |
|---------------|--------------------|-----------------------|------------------------|--------------------|------------------------|--------------------|
| AFW | SK-9700807-M-2006 | 1-AF-FW-2 | SA-234 WPB | 6" sch 80 | SA-106 GR B | 6" sch 80 |
| AFW | SK-9700807-M-2006 | 1-AF-FW-5 | SA-106 GR B | 6" sch 80 | SA-216 WCB | 6" sch 80 |
| AFW | SK-9700807-M-2006 | 1-AF-FW-6 | SA-216 WCB | 6" sch 80 | SA-106 GR B | 6" sch 80 |
| AFW | SK-9700807-M-2006 | 1-AF-FW-8 | SA-234 WPB | 6" sch 120 | SA-508 Cl 3a | 6" sch 120 |
| | | | | | | |
| AFW | SK-9700807-M-2007 | 1-AF-FW-1 | SA-106 GR B | 6" sch 80 | SA-234 WPC | 6" sch 120 |
| AFW | SK-9700807-M-2007 | 1-AF-FW-3 | SA-106 GR C | 6" sch 120 | SA-234 WPC | 6" sch 120 |
| AFW | SK-9700807-M-2007 | 1-AF-FW-5 | SA-106 GR C | 6" sch 120 | SA-216 WCB | 6" sch 120 |
| AFW | SK-9700807-M-2007 | 1-AF-FW-6 | SA-216 WCB | 6" sch 120 | SA-106 GR C | 6" sch 120 |
| AFW | SK-9700807-M-2007 | 1-AF-FW-8 | SA-234 WPC | 6" sch 160 | SA-508 Cl 3a | 6" sch 160 |
| | | | | | | |
| AFW | SK-9700807-M-2008 | 1-AF-FW-1 | SA-106 GR B | 6" sch 80 | SA-234 WPB | 6" sch 80 |
| AFW | SK-9700807-M-2008 | 1-AF-FW-2 | SA-234 WPB | 6" sch 80 | SA-106 GR B | 6" sch 80 |
| AFW | SK-9700807-M-2008 | 1-AF-FW-5 | SA-106 GR B | 6" sch 80 | SA-216 WCB | 6" sch 80 |
| AFW | SK-9700807-M-2008 | 1-AF-FW-6 | SA-216 WCB | 6" sch 80 | SA-106 GR B | 6" sch 80 |
| AFW | SK-9700807-M-2008 | 1-AF-FW-8 | SA-234 WPB | 6" sch 120 | SA-508 Cl 3a | 6" sch 120 |
| | | | | | | |
| AFW | SK-9700807-M-2028 | FW-262 | SA-234 WPB | 6" sch 80 | SA-106 GR B | 6" sch 80 |
| AFW | SK-9700807-M-2028 | FW-261 | SA-106 GR B | 6" sch 80 | SA-234 WPB | 6" sch 80 |
| | | | | | | |
| AFW | SK-9700807-M-2029 | FW-271 | SA-234 WPB | 6" sch 80 | SA-106 GR B | 6" sch 80 |
| AFW | SK-9700807-M-2029 | FW-270 | SA-106 GR B | 6" sch 80 | SA-234 WPB | 6" sch 80 |
| | | | | | | |
| AFW | SK-9700807-M-2030 | FW-281 | SA-234 WPB | 6" sch 80 | SA-106 GR B | 6" sch 80 |
| AFW | SK-9700807-M-2030 | FW-280 | SA-106 GR B | 6" sch 80 | SA-234 WPB | 6" sch 80 |
| | | | | | | |
| BD | 1-BD-52 | 1-BD-52-FW-2 | SA-335 P22 | 2" sch 80 | SA-234 WP22 | 2" sch 80 |
| BD | 1-BD-52 | 1-BD-52-FW-3 | SA-234 WP22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-52 | 1-BD-52-FW-4 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-52 | 1-BD-52-FW-5 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-52 | 1-BD-52-FW-6 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-52 | 1-BD-52-FW-7 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |

Relief Request No. 2RG-010

| SYSTEM | DRAWING NO. | FIELD WELD NO. | MATERIAL SIDE A | SIZE SIDE A | MATERIAL SIDE B | SIZE SIDE B |
|---------------|--------------------|-----------------------|------------------------|--------------------|------------------------|--------------------|
| BD | 1-BD-52 | 1-BD-52-FW-8 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-52 | 1-BD-52-FW-11 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-52 | 1-BD-52-FW-12 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-52 | 1-BD-52-FW-14 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-52 | 1-BD-52-FW-15 | SA-234 WP22 | 4" sch 40 | SA-234 WP22 | 4" sch 40 |
| BD | 1-BD-52 | 1-BD-52-FW-16 | SA-234 WP22 | 4" sch 40 | SA-234 WPB | 4" sch 40 |
| | | | | | | |
| BD | 1-BD-55 | 1-BD-55-FW-301 | SA-106 GR B | 2" sch 80 | SA-234 WPB | 2" sch 80 |
| BD | 1-BD-55 | 1-BD-55-FW-302 | SA-234 WPB | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| BD | 1-BD-55 | 1-BD-55-FW-303 | SA-106 GR B | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| BD | 1-BD-55 | 1-BD-55-FW-304 | SA-106 GR B | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| | | | | | | |
| BD | 1-BD-56 | 1-BD-56-FW-309 | SA-106 GR B | 4" sch 40 | SA-105 | 4" sch 40 |
| BD | 1-BD-56 | 1-BD-56-FW-310 | SA-105 | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| BD | 1-BD-56 | 1-BD-56-FW-311 | SA-106 GR B | 4" sch 40 | SA-105 | 4" sch 40 |
| BD | 1-BD-56 | 1-BD-56-FW-312 | SA-105 | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| | | | | | | |
| BD | 1-BD-58 | 1-BD-58-FW-2 | SA-335 P22 | 2" sch 80 | SA-234 WP22 | 2" sch 80 |
| BD | 1-BD-58 | 1-BD-58-FW-3 | SA-234 WP22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-58 | 1-BD-58-FW-4 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-58 | 1-BD-58-FW-5 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-58 | 1-BD-58-FW-6 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-58 | 1-BD-58-FW-7 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-58 | 1-BD-58-FW-8 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-58 | 1-BD-58-FW-10 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-58 | 1-BD-58-FW-11 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-58 | 1-BD-58-FW-13 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-58 | 1-BD-58-FW-14 | SA-234 WP22 | 4" sch 40 | SA-234 WP22 | 4" sch 40 |
| BD | 1-BD-58 | 1-BD-58-FW-15 | SA-234 WP22 | 4" sch 40 | SA-234 WPB | 4" sch 40 |
| | | | | | | |
| BD | 1-BD-60 | 1-BD-60-FW-305 | SA-106 GR B | 2" sch 80 | SA-234 WPB | 2" sch 80 |
| BD | 1-BD-60 | 1-BD-60-FW-306 | SA-234 WPB | 4" sch 40 | SA-106 GR B | 4" sch 40 |

Relief Request No. 2RG-010

| SYSTEM | DRAWING NO. | FIELD WELD NO. | MATERIAL SIDE A | SIZE SIDE A | MATERIAL SIDE B | SIZE SIDE B |
|---------------|--------------------|-----------------------|------------------------|--------------------|------------------------|--------------------|
| BD | 1-BD-60 | 1-BD-60-FW-307 | SA-106 GR B | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| BD | 1-BD-60 | 1-BD-60-FW-308 | SA-106 GR B | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| BD | 1-BD-60 | 1-BD-60-FW-309 | SA-106 GR B | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| BD | 1-BD-60 | 1-BD-60-FW-310 | SA-106 GR B | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| | | | | | | |
| BD | 1-BD-61 | 1-BD-61-FW-2 | SA-106 GR B | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| BD | 1-BD-61 | 1-BD-61-FW-3 | SA-106 GR B | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| BD | 1-BD-61 | 1-BD-61-FW-4 | SA-106 GR B | 4" sch 40 | SA-216 WCB | 4" sch 40 |
| BD | 1-BD-61 | 1-BD-61-FW-5 | SA-216 WCB | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| | | | | | | |
| BD | 1-BD-63 | 1-BD-63-FW-2 | SA-335 P22 | 2" sch 80 | SA-234 WP22 | 2" sch 80 |
| BD | 1-BD-63 | 1-BD-63-FW-3 | SA-234 WP22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-4 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-5 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-6 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-7 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-8 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-9 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-10 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-11 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-12 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-13 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-14 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-16 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-17 | SA-234 WP22 | 3" sch 40 | SA-335 P22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-19 | SA-335 P22 | 3" sch 40 | SA-234 WP22 | 3" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-20 | SA-234 WP22 | 4" sch 40 | SA-234 WP22 | 4" sch 40 |
| BD | 1-BD-63 | 1-BD-63-FW-21 | SA-234 WP22 | 4" sch 40 | SA-234 WPB | 4" sch 40 |
| | | | | | | |
| BD | 1-BD-64 | 1-BD-64-FW-7 | SA-106 GR B | 2" sch 80 | SA-234 WPB | 2" sch 80 |
| BD | 1-BD-64 | 1-BD-64-FW-8 | SA-234 WPB | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| BD | 1-BD-64 | 1-BD-64-FW-316 | SA-234 WPB | 4" sch 40 | SA-106 GR B | 4" sch 40 |

Relief Request No. 2RG-010

| SYSTEM | DRAWING NO. | FIELD WELD NO. | MATERIAL SIDE A | SIZE SIDE A | MATERIAL SIDE B | SIZE SIDE B |
|---------------|--------------------|-----------------------|------------------------|--------------------|------------------------|--------------------|
| BD | 1-BD-64 | 1-BD-64-FW-317 | SA-106 GR B | 4" sch 40 | SA-234 WPB | 4" sch 40 |
| | | | | | | |
| BD | 1-BD-65 | 1-BD-65-FW-1 | SA-106 GR B | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| BD | 1-BD-65 | 1-BD-65-FW-2 | SA-106 GR B | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| BD | 1-BD-65 | 1-BD-65-FW-3 | SA-106 GR B | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| BD | 1-BD-65 | 1-BD-65-FW-4 | SA-106 GR B | 4" sch 40 | SA-106 GR B | 4" sch 40 |
| | | | | | | |
| FW | 1-FW-131 | 1-FW-131-1-VW-1 | SA-234 WPB | 16" x 0.750" | SA-106 GR B | 16" x 0.750" |
| FW | 1-FW-131 | 1-FW-131-1-VW-2 | SA-106 GR B | 16" x 0.750" | SA-234 WPB | 16" x 0.750" |
| FW | 1-FW-135 | 1-FW-135-1-VW-3 | SA-106 GR B | 16" x 0.750" | SA-234 WPB | 16" x 0.750" |
| FW | 1-FW-135 | 1-FW-135-1-VW-4 | SA-234 WPB | 16" x 0.750" | SA-106 GR B | 16" x 0.750" |
| | | | | | | |
| SI | 1-SI-244 | 1-SI-244-1-VW-13 | SA-376, TP 304 | 3" sch 160 | SA-403, WP304 | 3" sch 160 |
| | | | | | | |
| FW | 1-FW-26 | 1-FW-FW-700 | SA-234 WPB | 3" sch 160 | SA-234 WPB | 3" sch 160 |
| FW | 1-FW-26 | 1-FW-FW-703 | SA-106 GR B | 3" sch 160 | SA-234 WPB | 3" sch 160 |
| FW | 1-FW-27 | 1-FW-FW-701 | SA-234 WPB | 3" sch 160 | SA-234 WPB | 3" sch 160 |
| FW | 1-FW-27 | 1-FW-FW-704 | SA-106 GR B | 3" sch 160 | SA-234 WPB | 3" sch 160 |
| FW | 1-FW-28 | 1-FW-FW-702 | SA-234 WPB | 3" sch 160 | SA-234 WPB | 3" sch 160 |
| FW | 1-FW-28 | 1-FW-FW-705 | SA-106 GR B | 3" sch 160 | SA-234 WPB | 3" sch 160 |
| | | | | | | |

System Legend

AFW Auxiliary Feedwater
BD Steam Generator Blowdown
FW Main Feedwater
MS Main Steam
SI Safety Injection