



Commonwealth Edison

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February 27, 1985

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Quad Cities Station Units 1 and 2
Inservice Inspection Program
NRC Docket Nos. 50-~~249~~²⁵⁴ and 50-265

References (a): D. B. Vassallo letter to D. L. Farrar
dated January 11, 1985.

(b): B. Rybak letter to H. R. Denton
dated January 9, 1985.

Dear Mr. Denton:

Per Reference (a), additional information was requested on our ISI program for Quad Cities Station, Units 1 and 2. Based on that request and a subsequent telecon on February 21, 1985, we have prepared our enclosed response.

If you have any additional questions regarding this matter, please contact this office.

One signed original and forty (40) copies of this transmittal is provided for your use.

Very truly yours,

B. Rybak
Nuclear Licensing Administrator

lm

cc: R. Bevan - NRR
NRC Resident Inspector - Quad Cities

Attachment

A047
1/40

8503080365 850227
PDR ADOCK 05000254
Q PDR

9798N

ATTACHMENT

The four relief requests CR-3, CR-4, CR-10 and CR-11, discussed in the D. B. Vassallo letter dated January 11, 1985, have been reviewed and the latest revision is enclosed as appropriate.

- CR-3: The inaccessible weld relief request (attached), CR-3, has re-introduced the RHR welds 10HS-S8 (Unit 1) and 10 HS-F7 (Unit 2) in the ISI/IST 1980 Program. These welds were inadvertently omitted from the 1980 ISI/IST Program.
- CR-4: For the category of piping penetrations, relief request CR-4 (attached), the welds have been recounted. Due to Reactor Water Clean-Up System piping repairs and, subsequent to our telecon of February 21, 1985 when we added the piping penetration for line 1011-4", the total Class 1 welds, greater than 4 inches, should now be 485 for Unit 1 and 476 for Unit 2. The number of welds that are inaccessible for inspection, due to the penetration assembly, are still 15 welds for each unit.
- CR-10: The Class 2 branch connections, relief request CR-10 (attached), was inadvertently omitted from the 1975 ISI/IST Program. Violation of the Code requirements was avoided by selecting accessible Class 2 welds for examination during the first inspection interval. The relief request is required for the second interval to fulfill the complete Code requirement.
- CR-11: The relief request for SBLC nozzle Inner Radius Section (IRS), CR-11, has been added to the ISI/IST 1980 Program due to the abnormal geometry of the inner radius. This relief request was not submitted for the first interval due to the fact that the abnormal geometry of the IRS was not discovered until the end of the first interval. This new relief request was transmitted in our January 9, 1985 letter, Reference (b).
- CR-15: This relief request is similar to CR-11 in that it is for the SBLC Nozzle Inner Radius Section (IRS) but is provided for the 1st ten year interval. As noted in CR-11 above the relief request was not submitted earlier as the abnormal geometry of the IRS was not discovered until the end of the 1st interval.

RELIEF REQUEST NO. CR-3

I. IDENTIFICATION OF COMPONENTS AND IMPRACTICAL CODE REQUIREMENTS

Three Class-1 piping welds in Unit 2 and two welds in Unit 1 are physically inaccessible for examination. These welds are in the Control Rod Drive System on line number 0308-4" and in the RHR System on line number 1011-4". These welds cannot be examined because of interference from a structural support as shown on Figure 4, and the weld in the RHR System is located just above the reactor cavity and the drywell. The inaccessibility is due to the presence of a water barrier and sleeve arrangement as shown on Figure 4.

Section XI of the ASME Boiler and Pressure Vessel Code, 1980 Edition including the Winter 1980 Addenda requires that twenty-five percent of the total number of circumferential pipe welds be volumetrically examined each ten year interval (Code Category B-J).

It is unlikely that these welds be inspectable at any time during the plant life. Relief is, therefore, requested from performing the volumetric examination requirements of Section XI.

II. BASIS FOR RELIEF

The implications of this exemption are minimal due to the fact that safety margins inherent in the design of the subject welds are typical of those in all other welds in the Class-1 systems. Exempting these three welds from the total inspection sampling program will have negligible statistical significance.

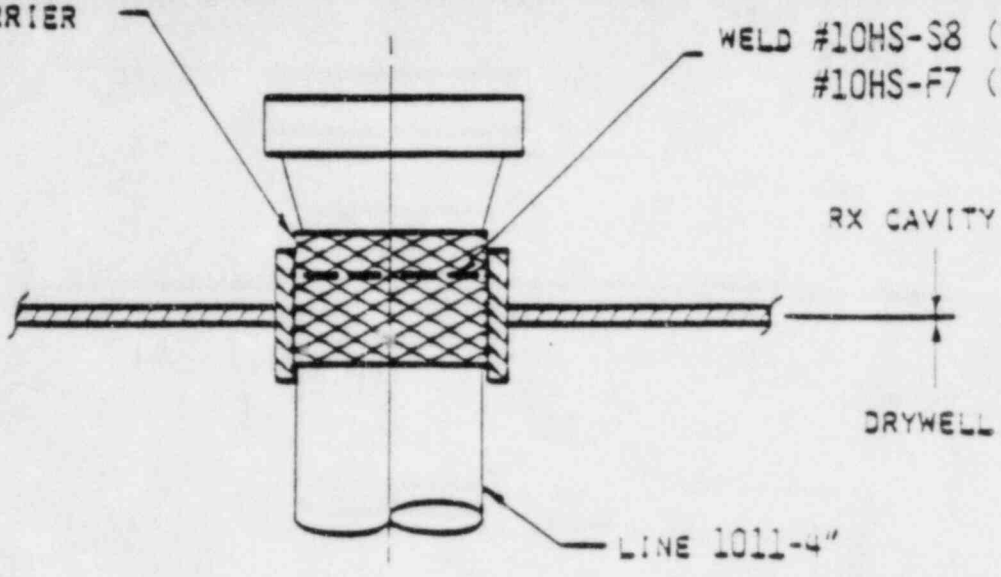
III.

ALTERNATE PROVISIONS

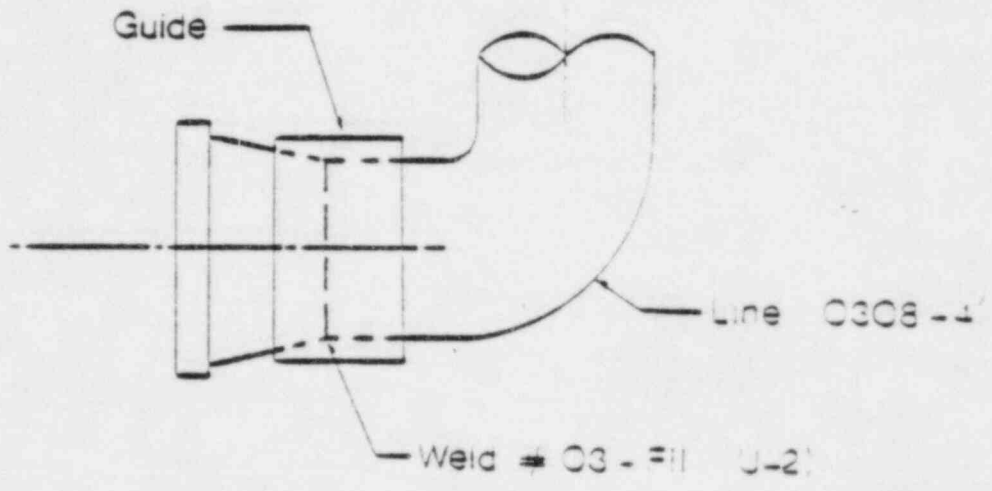
No alternate or augmented examinations are feasible or necessary in this case. The examinations required by IWB-5000 will, however, be conducted in accordance with the Code.

WATER BARRIER

WELD #10HS-S8 (U-1)
#10HS-F7 (U-2)



Guide



STRUCTURAL
STEEL
GUIDE

PENETRATION
SLEEVE

WELD #03-S17 (U-1)
#03-S18 (U-2)

LINE 0308-4\"/>

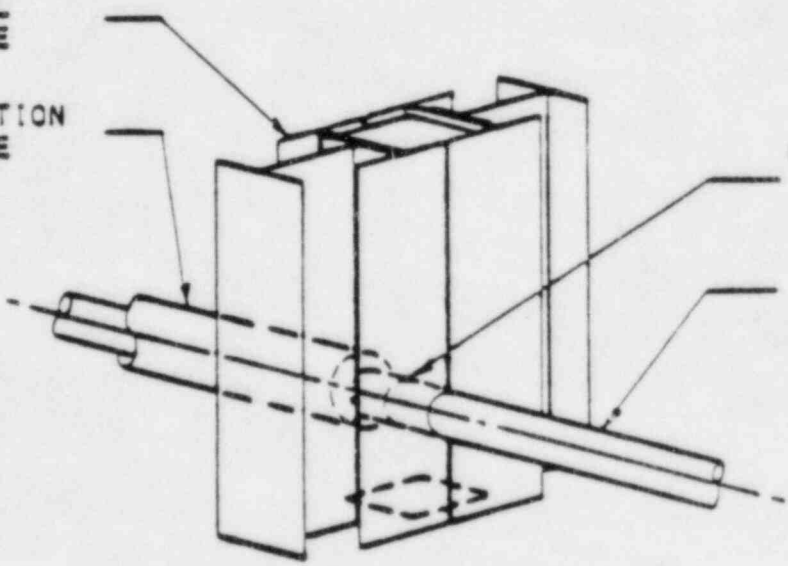


FIGURE 4

WELD OBSTRUCTION DETAILS

RELIEF REQUEST NO. CR-4

I. IDENTIFICATION OF COMPONENTS AND IMPRACTICAL CODE REQUIREMENTS

Each of the lines listed below penetrates the primary containment by means of a penetration assembly similar in design to that shown in Figure-2. These Class-1 lines, due to the design of the penetration assembly, have one circumferential pressure retaining weld that is inaccessible for volumetric examination.

CRD RETURN - 0308-4"

RHR - 1012A & B-16", 1025-20", 1011-4"

Rx WATER CLEANUP - 1202-6"

CORE SPRAY - 1403-10", 1404-10"

HPCI - 2305-10"

MAIN STEAM 3001A, B, C, D-20"

FEEDWATER 3204A & B-18"

The ASME Boiler and Pressure Vessel Code, Section XI, 1980 Edition through the Winter 1980 Addenda requires a volumetric and surface examination on Class-1 welds (Code Category B-J).

Since this requirement is impractical due to plant design, relief is requested from the above stated examination requirements.

II. BASIS FOR RELIEF

As stated in 10 CFR 50.55a (g)(1) for plants whose construction permits were issued prior to January 1, 1971, components shall meet Section XI requirements to the extent practical. Since examination requirements for these welds did not exist at the time Quad-Cities Station was designed, accessibility for their examination was not a prime consideration. Figure-2 clearly illustrates the design constraints which make it extremely impractical to examine the subject welds by volumetric or surface techniques. Commonwealth Edison feels that this constitutes a basis for relief from the volumetric examination requirements of Section I.

The safety implications of this exemption are minimal due to the fact that the safety margins in the subject welds are typical of those in all welds in the applicable systems. Since the exempted welds represent only a small fraction of the total number of circumferential, Category B-J welds in these systems (15 out of 485, and 15 out of 476, Unit 1 and 2 respectively), the statistical significance to the inspection sampling program due to exempting these welds is expected to be negligible.

III. ALTERNATE PROVISIONS

The first pressure boundary weld outside the containment on each of these process pipes will be volumetrically examined, where practical, over 100% of its length during each inspection interval. The examination required by IWB .5000 will also be conducted. Station's procedure will be revised to ensure the performance of the alternative volumetric examinations.

RELIEF REQUEST NO. CR-10

I. IDENTIFICATION OF COMPONENTS AND IMPRACTICAL CODE REQUIREMENT

The design of certain Class-2 branch pipe connection welds calls for the use of reinforcement saddles. These saddles are fillet welded over the actual pressure retaining branch pipe to main pipe weld, completely encasing it as illustrated on Figure 3. As listed in the program, there are 45 such welds that are greater than 4 inches in diameter, (25 welds for Unit One, 20 welds for Unit Two) not including the RHR Class 2 Heat Exchangers, see CR-8.

Section XI of the ASME Boiler and Pressure Vessel Code, 1980 Edition through the Winter 1980 Addenda requires that branch pipe connection welds exceeding 4 inches diameter be surface examined (Code Category C-F).

Relief from this requirement is requested due to the physical inaccessibility of the design.

II. BASIS FOR RELIEF

The fabrication of these joints precludes any type of surface examination. Additional assurance of the continued integrity of joints fabricated in this fashion is afforded by the fact that the reinforcement saddle strengthens the joint and reduces the stresses on the internal weld.

III. ALTERNATE PROVISIONS

Surface examination of the saddle fillet welds will be performed in lieu of the Code required examination and a visual examination of these joints for evidence of leakage will be conducted during the pressure tests required by IWC-5000.

Station's procedure will be revised to ensure the performance of the alternative surface examination.

RELIEF REQUEST NO. CR-15

I. IDENTIFICATION OF COMPONENTS AND IMPRACTICAL CODE REQUIREMENT

Section XI of the 1974 Edition of the ASME Code including the Summer 1975 Addenda specifies that a volumetric inspection of all full penetration nozzle inside radii sections (code category B-D, item B1.4) each ten-year interval.

The design of the Standby Liquid Control (SBLC) Nozzle as shown on Figure 6 provides an inner radius geometry which is not conducive to ultrasonic inspection.

Relief is requested from this SBLC inner radius inspection due to the nozzle inside radius geometry.

II. BASIS FOR RELIEF

The design of the SBLC nozzle piece does not lend itself to ultrasonic inspection. The nozzle as shown on figure 6 has an integral socket to which the boron injection piping is fillet welded and consequently provides a geometry which will result in a meaningless ultrasonic examination.

III. ALTERNATE PROVISION

No alternate or augmented examinations are feasible at this time.

Figure 6
Standby Liquid Control Nozzle

