Commonwealth Edison
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Chicago, Illinois 60690 - 0767

July 11, 1989

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U. S. Regulatory Commission
Washington, DC 20555

50-454
Q

Subject: Byron Station Unit 1
Inservice Inspection Program
NRC Docket No. 50-454

Reference: April 11, 1989, letter from L. N. Olshan to H. E. Bliss

Dear Dr. Murley:

The referenced letter provided the Safety Evaluation Report for the Byron Station Unit 1 Inservice Inspection Program. The letter contained several relief requests that were denied. On May 11, 1989, a teleconference was held between Commonwealth Edison and members of your staff to discuss the denied relief requests. This letter addresses the concerns that were raised and supplies the requested information.

The specific concerns and the Commonwealth Edison responses are itemized below.

NRC Concern:
The licensee's application of exemption criteria to the Containment Heat Removal System (CHRS).

Commonwealth Edison Response:
Commonwealth Edison interprets CHRS to mean the Containment Spray (CS) system (as confirmed in the May 11, 1989 conference call). A 7.5% augmented volumetric examination sample of class 2 welds from the CS pump to the first weld beyond the containment isolation valve is now in the ISI Program and examinations were performed. This is the NRC recommended examination. Therefore, we believe this concern is satisfied.

NRC Concern:
The exemption from examination of two integral attachment welds, E-1-1 and E-1-2 on pipe line 1FW87CB-6".

Commonwealth Edison:
The NRC letter and supporting attachments state that these integral attachment welds penetrate the pipe pressure boundary. The welds do NOT penetrate the pipe pressure boundary (see Attachment A). The integral attachment welds were made, inspected, and accepted per ASME Section III. Since a component support was never attached to this integral attachment, it was never inservice. Therefore, these welds do not fall under the requirements of ASME Section XI, Table IWC-2500-1, Category C-C, Item C3.20, per Note (1)(b). Also, ASME Section XI Code Interpretation 80-03 confirms this conclusion. Commonwealth Edison believes this exemption is justified.

NRC Concern:
Insufficient justification for Relief Request NR-3, Pressurizer and Steam Generator inner radii ultrasonic examination.

Commonwealth Edison:
Relief Request NR-3 has been removed from the ISI Program. Commonwealth Edison will continue to evaluate the feasibility of performing the examination.

NRC Concern:
Insufficient justification for the Residual Heat Removal heat exchanger nozzle inner radii in Relief Request NR-12.

Commonwealth Edison Response:
The revised Relief Request NR-12 is contained in Attachment B. The attachment includes a picture of the reinforcement pad obstruction welded on the nozzle inner radii. The reinforcement pad makes ultrasonic examination of the inner radii impossible. Commonwealth Edison requests that the NRC review the updated information and grant Relief Request NR-12.

NRC Concern:
Insufficient justification for Relief Request CR-2, Support Examination Boundaries for Non-exempt Supports on Insulated lines.

Commonwealth Edison Response:
Component Support Examination Relief Request CR-2 was removed from the ISI Program.

NRC Concern:
Insufficient justification for Relief Request SR-1, Support Examination Boundaries for Non-exempt Safety-Related Snubbers.

Commonwealth Edison Response:
As was discussed in the May 11, 1989, conference call, Snubber Examination Relief Request SR-1 has been revised as described in Attachment C. The previous Snubber Examination Relief Request SR-1 has been removed from the ISI Program and will not be implemented until NRC approval is received. Commonealth Edison believes that the revised relief requests contains the requested information and that the relief request is justified. The exact number of supports partially covered by insulation will be identified during the next scheduled snubber visual examination on each unit.

Utilizing the information contained in this letter and the attachments, Commonwealth Edison requests reconsideration of the above mentioned relief requests.

Please direct any further questions on this matter to this office.

Very truly yours,

R.A. Chrzanowski
Nuclear Licensing Administrator

cc: Resident Inspector-Byron
L.N. Olshan-NRR
Region III Office
Office of Nuclear Facility Safety-IDNS

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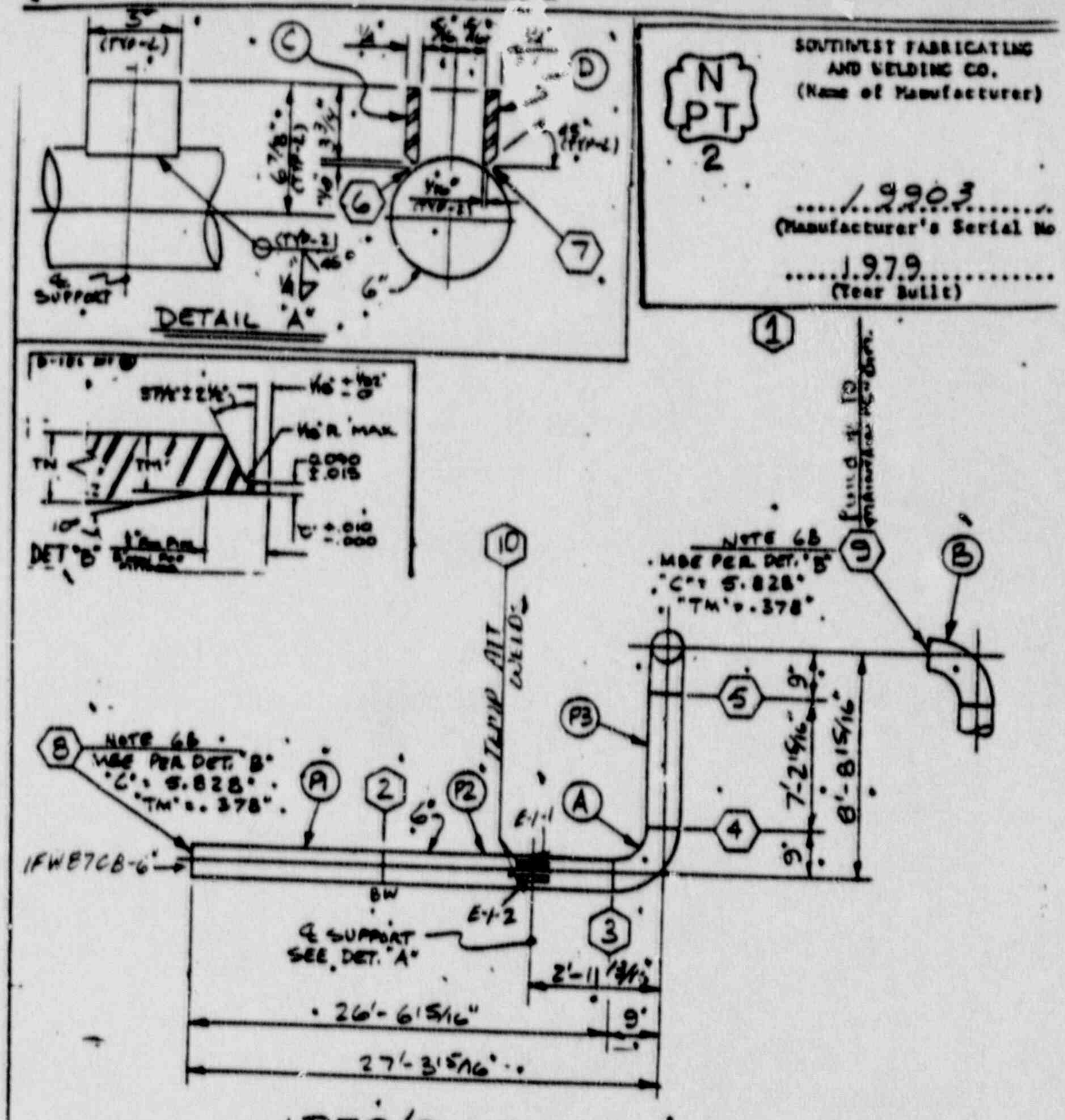

SOUTHWEST FABRICATING AND WELDING CO.
(Name of Manufacturer)

N PT 2

1.9903
(Manufacturer's Serial No)

1979
(Year Built)

1

1 REQ'D MK: FW-37-3

MK	QUA	DESCRIPTION	ASTM	QUA	UNIT	TOTAL	DISC	NET
		ALL BEVELS 37½° (XAN)						
		SA234-WPB-SMLS						
A		6" 90° X-HVY LR ELL		REV.N-SHOP				
		HT# H59						
B		6" 90° X-HVY LR ELL W/(1) MBE PER						
		DET. "B" "C" = 5.828" "TM" = .378"						
		HT# DF						
		SA 516 GR 70						
C	1	PL 3 3/4" x 1/4" THK x 3" LG	SHOP	CUT				
		HT# G6251						
D	1	PL 3 3/4" x 1/4" THK x 3" LG	SHOP	CUT				
		HT# G6251						

PREHEAT	50° F. MIN.	PAINT	NONE
POST WELD HEAT TREAT	NONE	SURF PREP	NONE
DYE CHK	NOTE 3B&6A	COLOR CODE	—
MAG PART	NOTE 3B&6A	HYDRO	
RADIOGRAPH	NOTE 7A	REV	

FAB CODE: ASME SECT III 1974 W/A THRU SUMMER 1975
SHOP DWG NO.: SWF 150# FW-37 R/2
SPEC

RELIEF REQUEST NR-12

1. SYSTEM: Reactor Coolant (Steam Generator, Secondary Side); Residual Heat Removal (Residual Heat Removal Heat Exchanger)

2. NUMBER OF ITEMS: 8

Component Number	Item Number	Attachment Numbers
1RC-01-BA	SGN-02, SGN-03	1 & 2
2RC-01-BA	SGN-02, SGN-03	3
1RH-02-AB	RHDN-01, RHDN-02	1 & 2
2RH-02-AB	RHDN-01, RHDN-02	3

3. ASME CODE CLASS: 2

4. ASME CODE SECTION XI REQUIREMENTS: Subsection IWC, Table IWC-2500-1, Examination Category C-B, Item C2.22 requires volumetric examination of the regions described in Figure IWC-2500-4(a) or (b), for nozzle inner radii in nozzles without reinforcing plate in vessels > 1/2 in. nominal thickness. Item C2.32 requires surface and volumetric examination of the regions described in Figure IWC-2500-4(c) for nozzles with Reinforcing Plate in vessels > 1/2 inch nominal thickness. Examinations shall be conducted on nozzles at terminal ends of piping runs selected for examination under Examination Category C-F, each inspection interval. In addition, Examination Category C-H, Item C7.10 requires a system leakage test, (IWC-5221) each inspection period for pressure vessel pressure retaining components.

5. BASIS FOR RELIEF: The nozzles listed above contain inherent geometric constraints which limit the ability to perform meaningful ultrasonic examinations. The main steam nozzle (SGN-03) was designed with an internal multiple venturi type flow restrictor with an equivalent throat diameter of 16 in., see Attachment 1. This design is used to limit the flow in the event of a postulated steam line break. This design does not utilize a radiused nozzle as described in figures IWC-2500-4(a) or IWC-2500-4(b), but instead has seven individual inner radii, corresponding to each venturi. None of which could be examined by ultrasonic examination. The main feedwater nozzle (SGN-02) also has an internal multiple venturi type flow restrictor, and, in addition, an internal thermal sleeve, see Attachment 2. This design could not be examined due to the geometry of the nozzle's internal design. The Residual Heat Removal Heat Exchanger is approximately 7/8 in. nominal wall thickness with nozzles of 14 inch diameter and approximately 3/8 inch in nominal wall thickness. Attachment 3 shows the actual nozzle-to-shell weld configuration for the Residual Heat Removal Heat Exchangers primary side nozzles. This configuration is best characterized as a fillet welded nozzle, which is most closely approximated by Figure IWC-2500-4(c), and, thereby, is not analogous to a full penetration butt welded nozzle. The examination requirement associated with this figure, with the inside of the vessel inaccessible, is a surface examination of the nozzle-to-shell weld. In addition, the inner radius of the reinforcement pad would be representative of the nozzle inner radius required for inspection. The inherent geometric constraints of the nozzle design prevent the performance of the required ultrasonic examinations of the nozzle-to-shell weld and the nozzle liner radius.

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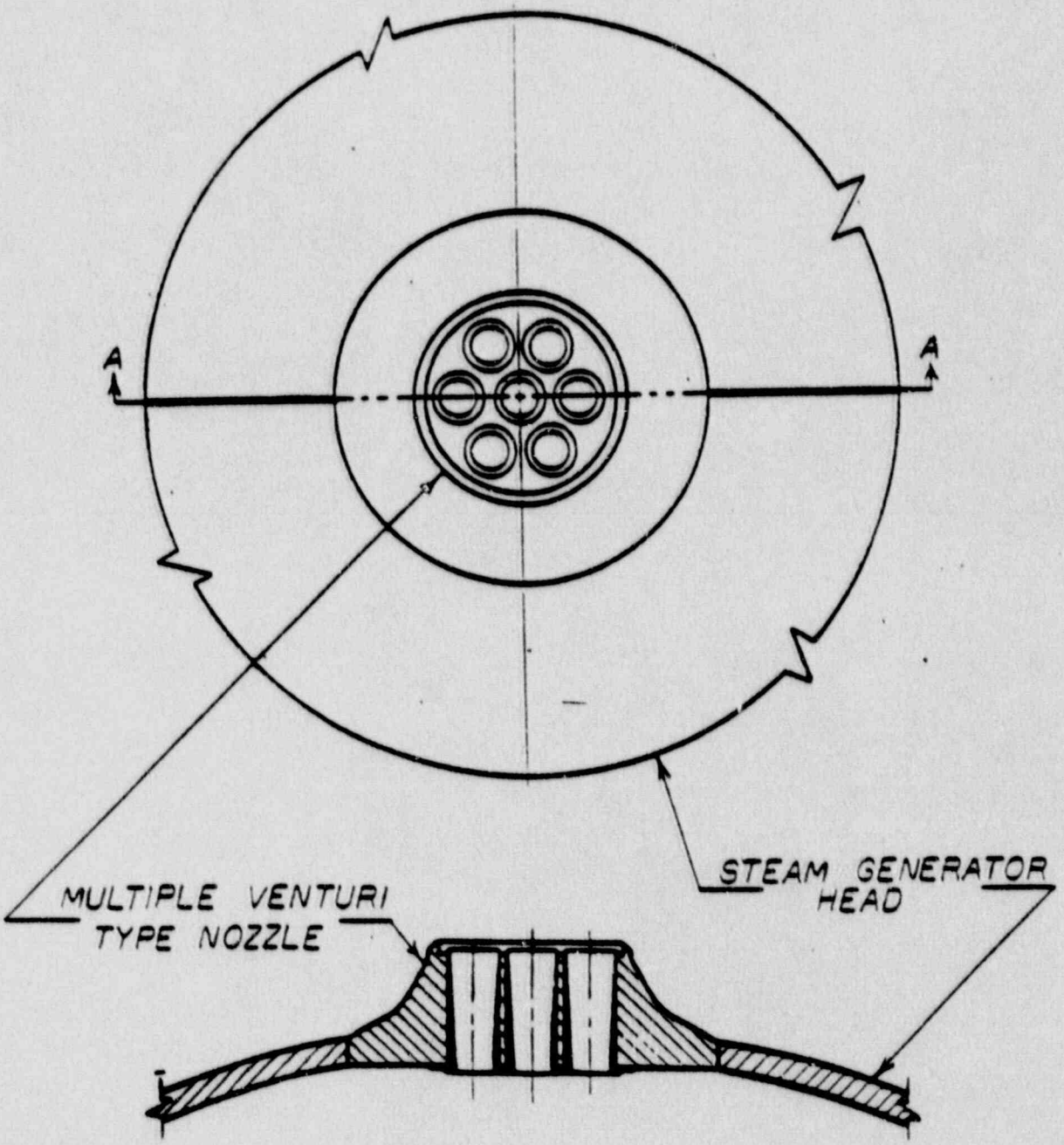
6. ALTERNATE TEST METHOD: Visual examination (VT-1) shall be performed either directly or remotely to the extent practical when disassembly is required for maintenance purposes not to exceed once per inspection interval. In addition, visual examination (VT-2) shall be performed each inspection period on all pressure retaining components.

7. JUSTIFICATION: The VT-1 examination will assure early detection of detrimental flaws. Therefore, in performing the proposed alternative examinations during disassembly for maintenance, an adequate level of structural integrity can be assured for continued plant operation.

8. APPLICABLE TIME PERIOD: This relief will be required for the first 120 month inspection interval.

UNIT 1 AND UNIT 2

Rev. 2



SECTION A—A

NR-12 ATTACHMENT 1. FIGURE 1

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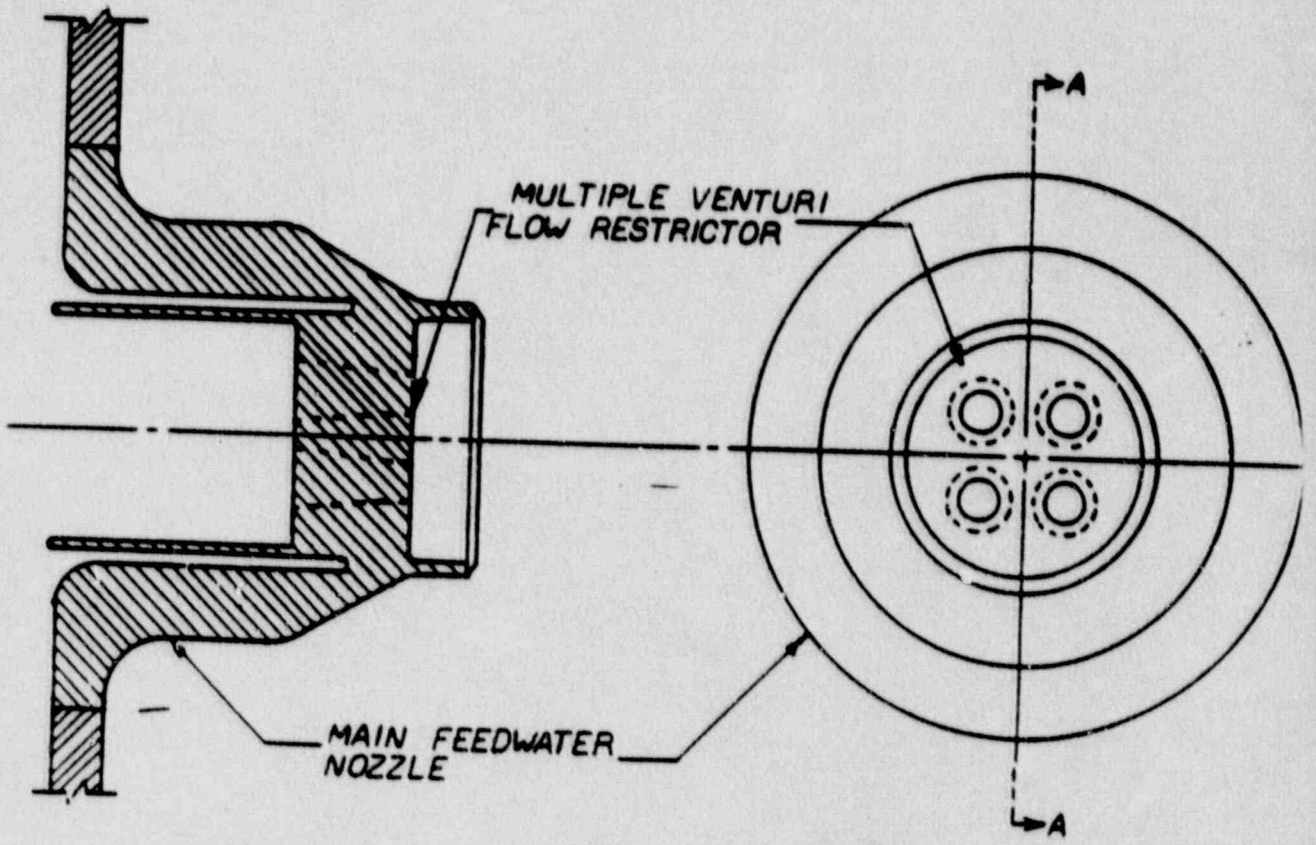
UNIT 1 AND UNIT 2

Rev. 2



SECTION A-A

NR-12 ATTACHMENT 2, FIGURE 1

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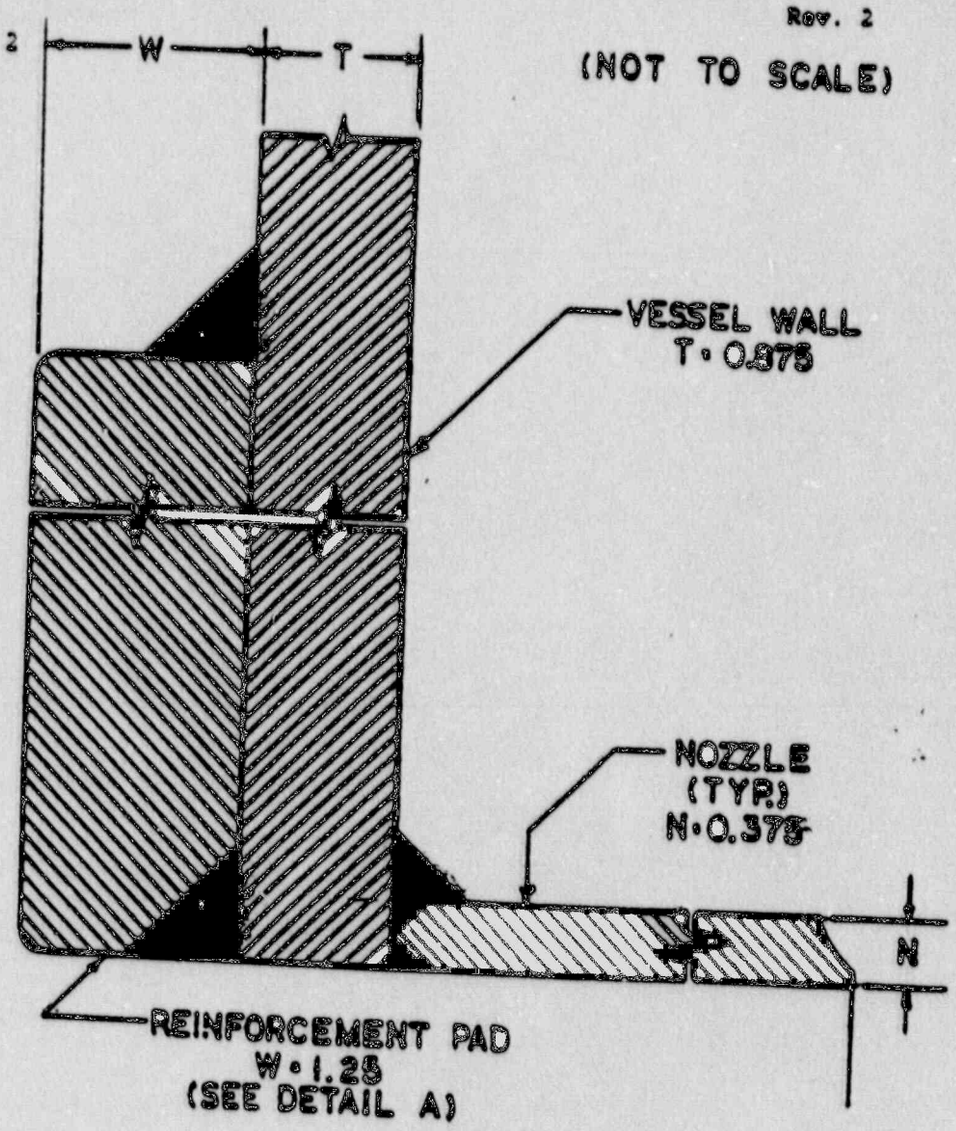
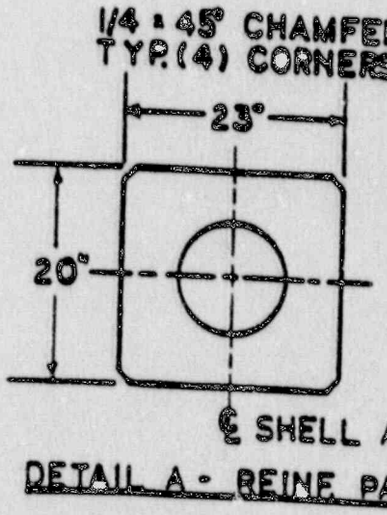
Rev. 2

UNIT 1 AND UNIT 2





DIMENSIONS SHOWN ARE NOMINAL

2-86

DETAIL A - REINF PAD

NR-12 ATTACHMENT 3, FIGURE 1

(0098D/0034D

ATTACHMENT C

Relief Request SR-1

1. SYSTEM: ALL (Nonexempt positions)

2. NUMBER OF ITEMS: All ASME Codes Class 1, 2, and 3 snubbers with insulated nonintegral attachments.

3. ASME CODE CLASS: 1, 2, and 3

4. ASME SECTION XI CODE REQUIREMENT: The component support examination boundaries are defined by IWF-1300 and Figure IWF-1300-1. The IWF support exam boundary for snubbers, which have nonintegral attachments, extends from the contact surface between the component and the support to the surface of the building structure.

5. BASIS FOR RELIEF: The visual examination of the nonintegral support attachment to the component is limited due to the presence of insulation on the component. It is impractical to remove insulation from components solely for the purpose of performing a visual examination on the portion of the nonintegral attachment within the insulation. In addition to ASME Section XI requirements, snubbers are visually examined and functionally tested in accordance with Technical Specification requirements, which exceed the ASME Section XI requirements in both scope and frequency.

   The total snubber visual radiation dose received through the Byron Unit 1 second refuel and Unit 2 first refuel outages is 7.7 manrem from approximately 3370 snubber exams. The combined dose rate average for the most recent refuel outages on both units was 0.0038 manrem per snubber visual inspection. If the insulation were to be removed and reinstalled, the total dose for the exam would be expected to increase by a factor of three. This takes into account the additional personnel involvement for insulation removal/reinstallation and radiation protection. Past experience has shown that the dose received per snubber exam will increase over time as the plant ages and general area dose rates increase.

   Removal of insulation would pose substantial ALARA concerns for plant employes without providing a significant increase in system reliability or safety.

6. ALTERNATE TEST METHOD: The visual examination (VT-3/4) will be limited at the pressure retaining component boundary, to the visually accessible positions of the nonintegral attachment. Penetrations of the component insulation at the nonintegral attachment allow for a limited examination of the attachment to the pressure retaining component. In general, the component support boundary will extend from the surface of the insulation and include essentially 100% of the component support.

   Evidence of nonintegral attachment indications beneath the insulation will be identified by the visual examiner as: misalignment between the snubber and its nonintegral attachment, crushed insulation, dented insulation, boric acid on the exterior of the insulation, nonintegral attachment discrepancies on adjacent supports or any other abnormal conditions.

   When the insulation has been removed for other NDE methods which coincide with the performance of the visual examination, the examination will include 100% of the nonintegral attachment.

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7. JUSTIFICATION: In addition to ASME Section XI requirements, snubbers are visually examined in accordance with Technical Specification requirements. All ASME Code Class 1, 2, and 3 snubbers and snubbers which are "important to safety" are visually examined at a minimum frequency of once per 18 months. This frequency increases if any snubbers are found to be inoperable. This frequency is substantially higher than the once per interval (10 years) examination required by ASME Section XI.

The Technical Specification visual/functional snubber population is approximately 600. This includes approximately 515 ASME Code Class 1, 2, and 3 snubbers plus an additional 85 snubbers which are "important to safety" for Technical Specification purposes. These 85 snubbers increase by 16% the snubbers population which is required to be visually examined per ASME Section XI.

The Technical Specification snubber population is functionally tested in accordance with Technical Specification requirements. To functionally test these snubbers, they are unpinned from the component at the nonintegral attachment. The functional test demonstrates operability of the snubber and provides another opportunity to identify any nonintegral attachment indications.

The nonintegral attachment between a snubber and its component consists of a pipe clamp and bolting material. Indications beneath the insulation will be identified as: misalignment between the snubber and its nonintegral attachment, crushed insulation, dented insulation, boric acid on the exterior of the insulation, nonintegral attachment discrepancies on adjacent supports or any other abnormal conditions.

Portions of these systems are noninsulated and therefore allow a visual examination of the entire attachment portion. The support attachments and installation procedures used on the noninsulated components are essentially the same as those used on insulated components. Therefore, the examinations of the noninsulated components provide an adequate means of identifying problems with a particular type of attachment or installation procedure. Since the visual examination is a general examination of structual and mechanical integrity, the examinations performed on the noninsulated components and the limited examinations performed on the insulated components, along with a check of the insulation, provide an adequate indication of the structural and mechanical integrity of the nonintegral attachments.

The above visual examination methodology ensures that a high degree of system safety and reliability is maintained while providing substantial ALARA benefits to plant employes.

8. APPLICABLE TIME PERIOD: This request for relief applies for the first ten year interval.

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DAILY ATTENDANCE REPORT

*[X] EMPLOYE [X] MANAGEMENT [ ] ENTER "X" IF NO VARIATIONS

DEPARTMENT	PAYROLL NO.	GROUP/ SECTION NUMBER	DIVISION OR LOCATION	DATE	
PERFORMANCE IMPROVEMENT	0926		1530E	07/03/89	SHEET 1 of 1 SHEETS

REGULAR WORK SCHEDULE - STANDARD SHIFTS

SHIFT 1 8:00AM TO 4:45PM	SHIFT __ ____ TO ____	SHIFT __ ____ TO ____	SHIFT __ ____ TO ____
SHIFT __ ____ TO ____	SHIFT __ ____ TO ____	SHIFT __ ____ TO ____	SHIFT __ ____ TO ____

VARIATIONS FROM REGULAR WORK SCHEDULE ARE TO BE REPORTED AS IRREGULAR ATTENDANCE

LINE	NAME	SOCIAL SECURITY NUMBER	IRREG. ATTEN. STR.	IRREG. ATTEN. FIN.	SHIFT	REGULAR HRS.	REGULAR CODE	ABSENCE HRS.	ABSENCE CODE	EXCESS HRS. NO.	EXCESS CODE	EXPENSE *	EXPENSE AMOUNT	MEALS #	HIGHER JOB CLASS NUMBER	REMARKS
	P.L. BARNES	513-52-5942			1	8										
	K.M. BRENNAN	081-56-5023			1			8	6V							~~MATERNITY LEAVE~~ ~~FIRST DAY OFF, 5/12/89~~
	W.L. DUKE	259-62-4395			1	8										
	L.E. HOLDEN	338-54-9582			1	8										
	D.L. PALAGI	382-48-4381			1			8	6V							
	L. RANSOME	322-44-6348			1	8										
	M.H. RICHTER	508-72-1130			1	8										
	G.A. TAYLOR	276-58-5213			1			8	6V							
	M.S. TURBAK	331-38-6652			1	8										
	P.C. ZOLAN	347-44-0732			1	8										
	*R. FORD	334-58-6312			1			8	6V							
	*S.C. LARA	339-66-8495			1	8				1.5	02					PERFORMANCE ASSESSMENT FUNCTION 59821

INDICATE KIND OF EXPENSE
T-TOOLS, TELEPHONE P-PARKING
C-CARFARE M-MEALS
T:2 (MANAGEMENT ONLY)

APPROVED SHIFT 1 _____ IDENTITY CODE [ ][ ][ ][ ]

APPROVED SHIFT __ _____ IDENTITY CODE [ ][ ][ ][ ]

ENTERED BY [illegible] 7/11/89