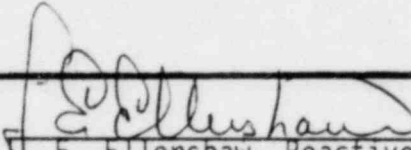
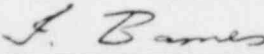
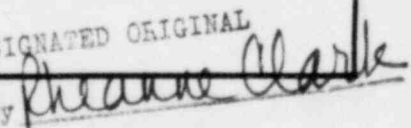


ORGANIZATION: COMBUSTION ENGINEERING, INC.
C-E AVERY DIVISION
NEWINGTON, NEW HAMPSHIRE

REPORT NO.:	99900259/82-01	INSPECTION DATE(S)	7/13-15/82	INSPECTION ON-SITE HOURS:	48
CORRESPONDENCE ADDRESS: Combustion Engineering, Inc. C-E Avery Division ATTN: P. F. Avery, Jr., President P. O. Box 360 Newington, NH 03801					
ORGANIZATIONAL CONTACT: W. R. Poteet, Manager, Quality Assurance TELEPHONE NUMBER: (603) 431-8100					
PRINCIPAL PRODUCT: Reactor Vessel Internals, Reactor Coolant Pumps, and Safety Injection Tanks					
NUCLEAR INDUSTRY ACTIVITY: Current work consists of the following items: one safety injection tank for Washington Public Power Supply System's WNP-5; four reactor coolant pumps and internals for Duke Power Company, and reactor coolant pump internals for Arizona Public Service Company's Palo Verde 3.					
ASSIGNED INSPECTOR:	 E. Eilershaw, Reactive and Component Program Section (R&CPS)			10-1-82	Date
OTHER INSPECTOR(S):	H. W. Roberds, R&CPS				
APPROVED BY:	 I. Barnes, Chief, R&CPS			10-4-82	Date
INSPECTION BASES AND SCOPE:					
A. <u>BASES</u> : 10 CFR Part 50 Appendix B					
B. <u>SCOPE</u> : This inspection was made as a result of a potential 10 CFR Part 50.55(e) report by Washington Public Power Supply System pertaining to radiographic technique and radiography of safe end welds on Safety Injection Tanks supplied to WNP 3 and 5 not being in compliance with Sections III and V of the ASME Code.					
PLANT SITE APPLICABILITY:					
50-508, 50-509, 50-491, 50-528, 50-529, 50-530, 50-488, 50-566, 50-567, 50-471, and 50-382.					

8211180271 821020
PDR GA999 EMVC-E
99900259 PDR

DESIGNATED ORIGINAL
Certified By 

ORGANIZATION: COMBUSTION ENGINEERING, INC.
C-E AVERY DIVISION
NEWINGTON, NEW HAMPSHIRE

REPORT NO.:	99900259/82-01	INSPECTION RESULTS:	PAGE 2 of 4
A. <u>VIOLATIONS:</u>			
None			
B. <u>NONCONFORMANCES:</u>			
None			
C. <u>UNRESOLVED ITEMS:</u>			
None			
D. <u>OTHER FINDINGS AND COMMENTS:</u>			
1. Potential 10 CFR Part 50.55(e) Construction Deficiency Report - Washington Public Power Supply System (WPPSS) made a notification to the NRC that radiography of safe end welds on Safety Injection Tanks manufactured by Combustion Engineering, C-E Avery Division, for WNP 3 and 5 is not in compliance with the ASME Code. Subsection NC of the ASME Code requires dissimilar metal weld joints to be radiographed after final postweld heat treatment. C-E Avery performed the radiography of the safe end welds prior to final postweld heat treatment. C-E Avery stated that they had misinterpreted the intent of the ASME Code and has committed to reradiograph all dissimilar metal safe end welds of all Safety Injection Tanks fabricated by them.			
At the time of this inspection, C-E Avery had reradiographed the four Safety Injection Tanks for WNP-5 and the four provided to Arizona Public Service Company's Palo Verde Nuclear Generating Station, Unit 1. The radiographs showed the welds to be acceptable.			
Reradiography of the safe end to nozzle welds on WNP-3 Safety Injection Tanks revealed cracks in Tank Nos. 3 and 4 which were not apparent in the original radiographs. These cracks require repairs.			
The tanks remaining to be reradiographed (four for each unit) are as follows: Palo Verde Units 2 and 3; Louisiana Power and Light Company's Waterford Generating Station, Unit 3; TVA's Yellow Creek Nuclear Plant, Units 1 and 2; Duke Power Company's Thomas L. Perkins Nuclear Station Unit 1, and Cherokee Nuclear Station Unit 1.			
C-E Avery has committed to report the results of the reradiography to the NRC, as they become available.			

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INSPECTION
RESULTS:

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The NRC inspector reviewed all documentation associated with the welding of the safe ends to the discharge nozzles on the WNP-3 Safety Injection Tank Nos. 3 and 4, including: the manufacturing process sheets; welding procedure specifications and their qualifications; drawings; material certifications for safe ends, nozzles, and welding materials; the post-weld heat treatment procedures, and time and temperature charts. All operations were shown to have been performed in accordance with the manufacturing process sheets including the performance of radiography prior to postweld heat treatment.

C-E Avery stated that these were the only products manufactured with dissimilar metal weld joints requiring radiography.

C-E Avery's failure to correctly translate ASME Code requirements is considered to be an isolated incident. Based on the results of this inspection and the fact that this problem had already been identified with corrective action steps initiated, no nonconformances or unresolved items were identified.

It should be noted, however, that the welding procedure specification (WPS) used during the welding of the safe end to the nozzle, allowed a violation of an ASME Code supplementary essential variable. WPS DWP I-10-1.43-1, revision 00 dated January 30, 1978, allowed a maximum interpass temperature of 450°F. The procedure qualification record (PQR) shows that the WPS was qualified for an interpass temperature of 350°F maximum. At the time the welds were made (September 1978), the ASME Code did not allow an increase in interpass temperature without a requalification of the WPS being performed. The Summer 1980 addenda to the ASME Code, however, changed the supplementary essential variable to allow an increase in interpass temperature of up to 100°F without requalification being required. The qualification of the WPS is thus consistent with current ASME Code requirements.

2. Nondestructive Examination (Radiography) - As a result of Ebasco's review of C-E Avery radiographs of the safety injection tanks for WNP-3 and 5, the radiographic technique was questioned relative to ASME Code requirements. A joint review of the radiographs by Ebasco and C-E Avery Level III examiners resolved the differences in interpretation and was not considered reportable by WPPSS under the provisions of 10 CFR Part 50.55(e).

To ascertain that C-E Avery's radiographic practices were in compliance with the ASME Code, the NRC inspector reviewed 51 production radiographs

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REPORT NO.:	99900259/82-01	INSPECTION RESULTS:	PAGE 4 of 4
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and radiographic examination procedure TM-NDE-057, revision 2. The procedure TM-NDE-057 and production radiographs reviewed, appeared to meet all the requirements of Section III and V of the ASME Code.

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	8	Review of Radiographs of Safe end welds ^{3513, 3514} 226- 3511 tank 3 ⁵ 4	WPPSS-WNP III	
2	8	" " " " " " " " 227-3511 ^{3512, 3513, 3514} tank 4 ⁵ 4	WPPSS-WNP V	
3	8	" " " " " " " " 219-3511, 3512, 3513, 3514	PALO VERDE	UNIT 1
4	8	" " " " " " " " 229-3511, 3512, 3513, 3514	PALO VERDE	UNIT 3
5	8	" " " " " " " " 214-3511, 3512, 3513, 3514	YELLOW CREEK	UNIT 1
6	3	RADIOGRAPHIC EXAMINATION PROCEDURE NDE-P-057	5/5/82	02
7	8	Manufacturing Process Sheet (MPS) - Outlet Nozzle Cladding	8-18-77	01 01
8	8	MPS - Final Tank Assembly	9-25-75	05
9	8	MPS - Safe End Machining	6-15-78	00
10	2	WPS DWP No. RP-20-2	8-29-78	00
11	2	PQR GTA-43.43-2G-1	8-28-78	-
12	8	Certified Material Test Reports for all welding materials used	-	-
13	8	Certified Material Test Reports for safe ends and nozzles	-	-
14	8	WPS DWP F-10-1.43-1	1-30-78	00
15	8	PQR SMA-1.43-1G-1	11-17-72	00
16	8	WPS DWP WMC-25-1	7-27-77	00
17	8	PQR GMA-8.1-WMC-1G-1	5-3-77	00

Document Types:

- 1. Drawing
- 2. Specification
- 3. Procedure
- 4. QA Manual
- 5. Purchase Order
- 6. Internal Memo
- 7. Letter
- 8. Other (Specify-if necessary)

Columns:

- 1. Sequential Item Number
- 2. Type of Document
- 3. Date of Document
- 4. Revision (If applicable)

Inspector E. J. Elershaw
 Scope/Module 292705B

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
18	8	WPS DWP WMC-10-1	9-14-76	A
19	8	PQR SMA - 8.1-WMC-10-2	-	-
20	8	WPS DWP WMB-10-4	8-9-78	00
21	8	PQR SMA -43.43-10-1	11-9-72	-
22	8	Heat Treatment Time & Temperature charts	10-12-78 and 11-15-78	-

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 - 4. QA Manual
 - 5. Purchas-Order
 - 6. Internal Memo
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