

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-358/78-30

Docket No. 50-358

License No. CPPR-88

Licensee: Cincinnati Gas and Electric Company
138 East 4th Street
Cincinnati, OH 45201

Facility Name: William H. Zimmer Nuclear Power Plant

Inspection At: W. H. Zimmer Site, Moscow, Ohio

Inspection Conducted: November 8-9, December 12-13, 1978

Inspector: K. D. Ward

Approved By: D. H. Danielson, Chief
Engineering Support Section 2

Inspection Summary

Inspection on November 8-9 and December 12-13, 1978 (Report No. 50-358/78-30)

Areas Inspected: Observation of preservice inspection (PSI) of vessel and review of nondestructive examinations (NDE) reports. Review of radiographs and reports in the HP, LP, and Core Spray systems. The inspection involved 24 inspection-hours onsite by one NRC inspector.

Results: Of the four areas inspected, no apparent items of noncompliance were identified in three areas; two apparent items of noncompliance were identified in one area (infraction - failure to calibrate and maintain instruments within necessary limits - paragraph 5.a; infraction - failure to follow established procedures to comply with applicable Codes - paragraph 5.d).

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DETAILS

Persons Contacted

Cincinnati Gas and Electric Company (CG&E)

- *B. K. Culver, Project Manager
- *W. W. Schwiars, Principal QA and Standard Engineer
- *R. L. Wood, QA and Standard Engineer
- J. R. Weissenburg QA Engineer

Kaiser Engineers, Incorporated (KEI)

- *R. Turner, QA Manager
- W. Puckett, Lead Mechanical Inspector
- A. Pallon, Weld/NDE QA Engineer

Nuclear Energy Services, Incorporated (NES)

- J. Marinelli, Electronic Technician
- R. Trenk, Mechanic Technician

The inspector also contacted and interviewed other licensee and contractor employees.

*Denotes those present at the exit interview.

Functional or Program Areas Inspected

1. Preservice Inspection - General Information

- a. Nuclear Energy Services, Incorporated (NES) developed the Preservice Inspection Program and is performing the preservice examination in accordance with ASME Section XI, 1974 Edition with no Addenda.
- b. Preservice inspection is being performed intermittently and is to be completed in the Summer of 1979.
- c. The automated ultrasonic examination will take approximately six to eight weeks to perform, working two shifts six days a week.

2. Observation of Work and Nondestructive Examination Activities

The inspector observed and had discussions with NES personnel during the set-up of the automated ultrasonic

instruments and equipment and during the nondestructive examinations. These observations included the setting up of the Reflectoscope ultrasonic instruments, the transponding ultrasonic calibration unit, the Computer X and Y tape recorder for the automated ultrasonic examination of the vessel, and the automated ultrasonic examination of nozzle welds in accordance with Procedure 80A1174, Revision 0, dated February 15, 1978.

No items of noncompliance or deviations were identified within the areas observed.

3. Data Review and Evaluation

The data review for the following systems demonstrated that the QA/QC commitment had been complied with.

Feedwater to reactor
Recirculation
Jet pump nozzle safe end and instrument nozzle
RCIC to reactor
RCIC from Main Steam
Core Spray
Steam separator
Feedwater sprayer
Shroud head
RPV closure head nozzles, supports and pads

No items of noncompliance or deviations were identified within the areas reviewed.

4. NDE Personnel Certification Review

The inspector reviewed the following NDE personnel certifications in accordance with SNT-TC-1A, 1968 Edition. The personnel were certified by NES.

<u>Name</u>	<u>Level</u>	<u>Methods</u>
R. Barnes	II	UT, PT
J. Wolf	II	UT, PT
K. Dufel	II	UT

No items of noncompliance or deviations were identified within the areas reviewed.

5. Independent Inspection

Radiographs and reports were reviewed of the following welds in accordance with ASME Section III, 1971 Edition, with Summer 1972 Addenda and the applicable procedures that were used.

<u>Line</u>	<u>Weld</u>	<u>Diameter</u>	<u>Thickness</u>	<u>Date</u>
1HP03C10	HP32	10"	0.593"	9/22/76
1HP03C10	HP33	10"	0.593"	9/30/76
1HP06C4	HP34	4"	0.237"	9/30/76
1HP06C4	HP35	4"	0.237"	2/18/76
1HP04A8	HP41	8"	0.593"	9/2/76
1HP18A8	HP49	3"	0.438"	1/10/77
1LP17A3	LP47	3"	0.216"	4/20/77
1LP17A3	LP48	3"	0.216"	6/17/77
1LP04B4	LP49	4"	0.237"	8/12/76
1HP21A4	HPK1	3"	0.237"	4/28/77
1HP21A2	HPK2	4"	0.237"	3/11/77
1HP17A3	HPK10	3"	0.216"	2/6/78
1HP06B4	HP17	3"	0.237"	9/28/76
1HP08C3	HPK17	3"	0.438"	8/7/78
1HP03C10	HP27	10"	0.593"	8/16/76
1HP03C10	HP30	10"	0.593"	9/20/76
1HP06C4	36HP	4"	0.237"	1/27/76
1HP01A20	HP1B	20"	0.375"	2/17/77
1HP01A20	HP1	20"	0.375"	7/26/76
1HP01A20-1	HP1	20"	0.375"	7/26/76
1HP01B16	HP67B	16"	0.375"	5/2/77
1HP01A20	9HP	20"	0.375"	7/2/76
1HP03A14	HP20	14"	0.937"	9/3/76
1HP03C10	HP28	10"	0.775"	7/20/76
1HP01A20	HP2	20"	0.375"	8/9/76
1LP05A12	LP24	12"	0.375"	4/27/77
1LP22A6	LP62	6"	0.280"	9/28/76
1LP22A6	LP63	4"	0.237"	9/30/76
1LP04B4	LP51	4"	0.237"	10/5/76
1LP04B4	LP50	4"	0.237"	8/30/76
1LP14C4	LPK25	4"	0.237"	8/28/78
1LP14B3	LPK9	3"	0.226"	6/23/78
1LP02B10	LP7	10"	0.600"	4/30/76
1LP02B10	LP1	10"	0.593"	7/8/76
1LP02B10	LP2	10"	0.593"	6/23/76
1LP12A16	LPK4	16"	0.375"	10/3/77

1LPO2A12	LP10	10"	0.365"	5/14/77
1LPO2A12	LP11	12"	0.365"	7/12/77
1LPO2A12	LP23A	12"	0.375"	4/18/77
1LPO5A12-18	LP23B	12"	0.375"	4/18/77

- a. On November 8, 1978, the inspector requested to use Kaiser Engineers, Incorporated (KEI) densitometer in reviewing the above radiographs. The KEI personnel informed the inspector that the densitometer was not always accurate and that the Peabody Magnaflux Corporation (PMC) densitometer was more accurate and should be used when densities are to be taken of radiographs. A density reading was taken, by the inspector, from a designated radiographic area using the PMC densitometer and compared to a reading from that same area using the KEI densitometer. The readings were found to have a wide variance. The inspector was unable to determine which, if either, of the densitometers was correct.

Both densitometers have National Bureau of Standards (NBS) calibrated density radiographic step wedges. The KEI densitometer is a Macbeth TO-504, No. 34210 and the PMC densitometer is a Macbeth - Quanota Log No. 7859. When the inspector returned to the site December 12, 1978, it was determined that the densitometers were in the same condition as they were on November 8, 1978. This is identified as an item of noncompliance in Appendix A. (358/78-30-01)

- b. On November 8, 1978, the inspector reviewed the first nine radiographs listed in Paragraph 4 above. These radiographs had been reviewed by Peabody Magnaflux Corporation, Kaiser Engineers, Incorporated and the Authorized Inspector. The following discrepancies were found in reviewing the reports and radiographs.
- (1) Line No. 1HP03C10, Weld No. HP33; two mistakes in the report. Area 0-14 should be area 7-14 and the diameter is stated as 16" and is actually a 10" pipe weld.
 - (2) Line No. 1HP06C4, Weld No. HP34; mistake in the report. One area of interest was 3 1/4" - 7" and the next area of interest was stated as 7 1/2" - 11". The report is incomplete since all of the weld must be interpreted.
 - (3) Line No. 1HP06C4, Weld No. HP35; there is a missing report. The original radiograph showed an unacceptable

area in the weld. The weld was repaired. There was a report and radiograph stating a second repair was made. There was no record or radiograph of the first repair.

(4) Line No. 1LP17A3, Weld No. LP47; the repair film did not have a R1 to show that it was repair one, and the technique was unacceptable because the penetrameters were not shined to the total thickness being radiographed.

(5) Line No. 1HP03C10, Weld No. HP32; the film density through three of the diagnostic areas varied by more than minus 15 percent from the density through the penetrameter.

c. On December 12, 1978, the inspector requested to review radiographs and reports that had been final reviewed for turn-over prior to operation. The radiographs selected for examination had been reviewed by Peabody Magnaflux Corp., Kaiser Engineers, Inc., and the Authorized Inspector. In addition, several radiographs had been reviewed by CONAM. The following discrepancies were found in reviewing the reports and radiographs:

(1) Line No. 1HP21A4, Weld No. HPK1; wrong diameters stated on reports. The original report states 3" diameter pipe size and the two repair reports R1 and R2 state 4" diameter pipe sizes.

(2) Line No. 1HP17A3, Weld No. HPK10; repair film does not have a R1 on the film. Records state a repair one was made.

(3) Line No. 1HP06B4, Weld No. HP17; the technique was unacceptable because the penetrameters were not shined to the total thickness being radiographed.

(4) Line No. 1HP08C3, Weld No. HPK17; a lead letter "F" was not placed adjacent to the penetrameter. The report stated that film-side penetrameters were used to radiograph the weld.

(5) Line No. 1HP03C10, Weld No. HP30; mistake in the report. One area of interest was $3\frac{1}{2}$ " - 7" and the next area of interest was stated as $7\frac{1}{2}$ " - 11". The report is incomplete since all of the weld must be interpreted.

- (6) Line No. 1HP01A20, Weld No. HP1B; no original report, two extra reports, one stating R1 and another R2, and one extra film stating repair two (R2). The weld was first radiographed having one film with artifacts. The area with the film artifacts was radiographed twice, first without the R2, which was acceptable and then another of the same area with a R2. The weld did not show any defects on the original radiograph, therefore was not repaired.
 - (7) Line No. 1HP01A20, Weld No. HP1; no repair film or report and penetrameters not shined. The film and report states unacceptable porosity in the weld. There is not a report or film indicating that the weld was repaired.
 - (8) Line No. 1HP01A20-1, Weld No. HP1; the penetrameters are not shined, a black felt ink pen was used to mark the identification (ID) on one film and the line No. was incomplete leaving the -1 off.
 - (9) Line No. 12P02B10, Weld No. LP1; mistake in the report. One area of interest was $3\frac{1}{4}$ " - 7" and the next area of interest was stated as $7\frac{1}{2}$ " - 11". The report is incomplete since all of the weld must be interpreted.
 - (10) Line No. 1HP03C10 Weld No. HP28; the report states that this pipe weld is 10 inch diameter, but the radiograph shows that it is 71" around the pipe. Prior to leaving the site the inspector was informed that the weld was 22" in diameter.
 - (11) Line No. 1LP02B10, Weld No. LP1; the ID was left off when radiographed, and then written with a black ink felt pen on the final radiograph. An acceptable area was reradiographed as a repair but there was no repair. This is a panoramic radiographic and in most of the areas where the film overlapped the density varies by more than minus 15 percent from the density through the penetrameter.
- d. The inspector observed that radiography was performed on several welds using an IR 192 source on material less than 0.25" without a separate procedure being prepared and proven by actual demonstration, as required by ASME Section III, 1971 Edition, with Summer 1972 Addenda. Peabody has technique radiographed shots of a 0.257" wall 4" diameter, a 0.280" wall 2 1/2" diameter and a 0.218" wall 2" diameter. The thinnest material reviewed was 0.216".

Items in Paragraphs b, c, and d, are noncompliances identified in Appendix A, (358/78-30-02).

Except as noted, no items of noncompliance or deviations were identified within the areas observed.

Exit Interviews

The inspector met with site representatives (denoted in the Persons Contacted Paragraph) at the conclusion of the inspection and summarized the scope and findings of the inspection.