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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

MAR 1 4 1975

Commowealth Edison Company
ATTN: Mr. Byron Lee, Jr.
Vice President
P. O. Box 767
Chicago, Illinois 60690

Docket No. 50-237

Gentlemen:

This refers to the inspection conducted by Messrs. D. M. Hunnicutt, C. M. Erb and F. J. Jablonski of this office on February 10, 18, 20, and 27, 1975, of activities at Dresden Unit No. 2 authorized by License No. DPR-19 and to the discussion of our findings with Mr. D. Butterfield and others of your staff at the conclusion of the inspection.

A copy of our report of this inspection is enclosed and identifies the areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, interviews with plant personnel, and observations by the inspectors.

No items of noncompliance with NRC requirements were identified within the scope of this inspection.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you or your contractors believe to be proprietary, it is necessary that you make a written application to this office, within twenty days of your receipt of this letter, to withhold such information from public disclosure. Any such application must include a full statement of the reasons for which it is claimed that the information is proprietary, and should be prepared so the proprietary information identified in the application is contained in a separate part of the document. Unless we receive an application to withhold information or are otherwise contacted within the specified time period, the written material identified in this paragraph will be placed in the Public Document Room.

No reply to this letter is necessary; however, should you have any questions concerning this inspection, we will be glad to discuss them with you.

Sincerely yours,

Gaston Fiorelli, Chief
Reactor Operations Branch

Enclosure:
IE Inspection Report
No. 050-237/75-05

cc: B. Stephenson
Station Superintendent

bcc: IE Chief, FS&EB
IE:HQ (4)
Licensing (4)
Central Files
IE Files
PDR
Local PDR
NSIC
TIC
A. Roisman

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

REGION III

Report of Construction Inspection

IE Inspection Report No. 050-237/75-05

Licensee: Commonwealth Edison Company
Post Office Box 767
Chicago, Illinois 60690

Dresden Unit 2
Morris, Illinois

License No. DPR-19
Category: C

Type of Licensee: GE - BWR (809 MWe)

Type of Inspection: Special, Unannounced

Dates of Inspection: February 10, 18, 20, and 27, 1975

Date of Previous Inspection: January 27, 1975 (REP)

Principal Inspector: D. M. Hunnicutt (2/10, 20 only) — 3/13/75 (Date)

Accompanying Inspectors: C. M. Erb (2/10, 20 & 27) — 3/13/75 (Date)

E. W. K. Lee (2/18 only) — 3/13/75 (Date)

F. J. Jablonski (2/20 only) — 3/13/75 (Date)

Reviewed By: D. W. Hayes, Senior Reactor Inspector Construction Projects — 3/13/75 (Date)

SUMMARY OF FINDINGS

Enforcement Action

None.

Licensee Action on Previously Identified Enforcement Matters

Not applicable to this inspection.

Design Changes: Not applicable to this inspection.

Unusual Occurrences: None identified.

Other Significant Findings

A. Current Findings

1. Stainless Steel Piping in Core Spray Scheduled to be Replaced

The licensee reported by telephone on February 28, 1975, that all stainless steel core spray piping from the safe end to the dry well would be removed and replaced with carbon steel piping. The licensee subsequently decided to also replace the piping outside the drywell to the second isolation valve. The carbon steel replacement piping is scheduled to arrive at the Dresden site about March 10, 1975. The piping will be installed using approved procedures.

2. Core Spray Through Wall Cracks

The licensee reported that through wall cracks were discovered on core spray lines 2-1403-10"-A and 2-1404-10"-A on January 27, 1975. The reactor was shutdown and locked in the "refuel mode". The cracks were discovered in an area between the reactor vessel nozzle to safe end weld and the core spray pipe section adjacent to the dutchman weld (approximately eight inches from the safe end). The discovery of these through wall cracks initiated the action resulting in the issuance of IE Bulletins No. 75-01 and No. 75-01A. Further discussion of the initial investigation of the cracks is provided in IE Inspection Report No. 050-237/75-06.

An additional through wall crack was discovered on February 9, 1975, on core spray line 2-1403-10"-A. The reactor was still shutdown and locked in the "refuel mode" at the time of this

discovery. The in-service inspection program (including ultrasonic examinations required by IE Bulletins No. 75-01 and No. 75-01A) was underway. Subsequent examinations determined that this through wall crack was approximately 1½ inches in length on the pipe ID and ran circumferentially in the heat affected zone of the butt weld. The inspector observed a recheck of this weld on February 10, 1975, by Peabody Testing/-Magnaflux personnel, who were qualified as Level II under the appropriate CE NDT Procedures.

B. Unresolved Matters: Not applicable to this inspection.

C. Status of Previously Reported Unresolved Matters

Not applicable to this inspection.

Management Interview

A. February 10, 1975

A management interview was held with Messrs. B. Stephenson and D. Butterfield to discuss the discovery on February 9, 1975, of a through-wall crack in the core spray system.

The inspector requested a discussion on the description of the through-wall crack, how it was found and what corrective action would be undertaken. The licensee stated that this crack had not been identified during scheduled ultrasonic examination, but had been discovered by visual examination of a section of the core spray piping. The crack was found approximately eight (8) feet from the nozzle safe end. The licensee stated that selected re-examination of completed welds (approximately twenty-five welds) would be accomplished in an attempt to determine the reason for not identifying this through-wall crack.

In a telephone conversation on February 11, 1975, the licensee stated that a complete re-examination of all welds ultrasonics examined prior to February 10, 1975, on which no indications were recorded would be completed.

B. February 20, 1975

A management interview was held with Mr. D. Butterfield.

The inspector stated that the purpose of this inspection was to verify that volumetric examinations had been completed or would be

conducted of welds in the core spray system as required by IE Bulletins No. 75-01 and No. 75-01A. The inspector stated that a review of records and observations, made of personnel performing a portion of the required ultrasonic examinations, indicated that the licensee was performing the required examinations and that the licensee's planned activities, when completed, appeared to meet the IE Bulletin requirements. The licensee replied that they had every intention of meeting all requirements and documenting the test results.

C. February 27, 1975

A management interview was held with Mr. D. Butterfield.

The inspector stated that with the pending licensee decision that the core spray stainless steel piping would probably be replaced with carbon steel piping indicated that the defective core spray piping would be removed and that the pipe replacement would resolve outstanding questions related to disposition of this piping.

The licensee stated that a firm decision had not been made, but that an evaluation was nearing completion and that Region III would be notified when a firm decision was reached.

REPORT DETAILS

Persons Contacted

Commonwealth Edison Company (CE)

B. Stephenson, Station Superintendent
A. Roberts, Assistant Station Superintendent
D. Butterfield, Station Administrative Assistant
R. Williams, Technical Staff

Results of Inspection

1. Description of Core Spray System

The reactor core spray system for the Dresden Unit 2 facility consists of two independent, ten-inch diameter stainless steel loops.

2. Procedures and Specifications

The inspector reviewed applicable procedures and specifications related to inspection of welds as required by IE Bulletins No. 75-01 and No. 75-01A, titled "Through-Wall Cracks in Core Spray Piping at Dresden 2" dated January 30, 1975, and February 7, 1975, respectively. Each of these procedures was found to be acceptable.

a. GE Specification No. 21 A 8592, Revision 1 - Ultrasonic Examination of Pipe and Safe End Welds.

b. CE NDT Procedure NDT-C-2, Revision 9 - Ultrasonic Inspection of Pipe Welds, Dresden Station, Units 1, 2, and 3, and Quad-Cities Station, Units 1 and 2.

c. CE NDT Procedure NDT-C-4, Revision 8 - Ultrasonic Inspection of External Support Attachment Weld Areas on Piping, Dresden Station, Units 1, 2, and 3, and Quad-Cities Station, Units 1 and 2.

d. CE NDT Procedure NDT-C-15, Revision 9 - Ultrasonic Inspection of Safe End-to-Nozzle Welds and Safe Ends, Dresden Station, Units 1, 2, and 3, and Quad-Cities Station, Units 1 and 2.

3. Personnel Qualifications

The licensee contracted with Peabody Testing/Magnaflux for personnel to perform the required ultrasonic examinations (UT). These personnel met the qualification requirements stated in SNT-TC-1A and applicable procedures for Levels I, II, and III.

Licensee records indicated that fourteen (14) Peabody Testing/Magnaflux personnel, including three (3) Level I personnel, were qualified to perform the NDE. The Level I personnel were adequately supervised during the examinations by qualified Level II or Level III personnel.

4. Equipment

The equipment used to perform the UT was of acceptable quality and had been calibrated in accordance with the manufacturer's recommendations, the applicable specifications, procedures, and codes. Data had been plotted and recorded for each calibration and for each calibration verification. The transducers had been calibrated for real-time wave form and frequency response.

5. Calibrations

The calibration blocks were those required by the procedures and codes. Test blocks of the applicable stainless steel piping were available and had been used during calibration and testing.

In general, the equipment was recalibrated before and after each weld examination. The equipment was calibrated against the IIW-1 block. In addition, documentation certifying each calibration standard was on file.

6. Welds in Core Spray and Related Piping Systems

The inspector determined on February 20, 1975 sixty (60) of the ninety-seven (97) welds required to be examined had been completed. Twenty-two (22) of these sixty (60) welds had been referenced back to the base-line data and a determination made that these twenty-two (22) welds were acceptable.

7. Through Wall Crack Identified During Re-examination

During the initial ultrasonic examination of Loop "A" a through wall crack in line 2-1403-10"-A was not identified. The possible causes for failure to identify this problem include the following:

(a) Weld not examined by ultrasonic personnel (e.g., omitted from list)

(b) Personnel error resulted in omitting this weld from examination

(c) Examination techniques or equipment failed to identify this defect

(d) Procedure not strictly adhered to during examination

Subsequent ultrasonic examination of the subject pipe was observed by the inspector on February 10, 1975. The same team of test personnel performed the re-examination and readily identified the crack. Further examination determined that the crack was approximately 1½ inches in length and ran circumferentially from about the 10 o'clock to the 12 o'clock position in the heat affected zone of butt weld number 2-1403.10-25.

The licensee rejected all ultrasonic data (approximately 25 welds) of welds that had not been re-examined prior to February 10, 1975.

The examination program was completed as required by IE Bulletins No. 75-01 and No. 75-01A and as listed in Attachment A.

8. Licensee Evaluation

Qualified licensee and General Electric Company (GE) personnel evaluated the ultrasonic test results. Indications that appeared to be equal to or greater than 100% of D. A. C. (Distance Amplitude Correction) were rechecked again, using CE Co. Procedure No. NDT-C-2 and comparing the results to the base-line data.

Special equipment, supplied and operated by GE personnel, was used to verify these indications identified during examination by Peabody Testing/Magnaflux.

Re-examinations of indications and evaluations and comparisons with base-line data were completed by personnel qualified to perform Level II and Level III assignments. These re-examinations determined that no unacceptable defects were detected during the testing required by IE Bulletins No. 75-01 and No. 75-01A.

9. Documentation Review

a. The inspector's review of the documentation indicated that these welds were properly examined by UT in accordance with applicable procedures, specifications, and code requirements and that no recordable defects were identified during examinations. The inspector determined that the welds selected for examinations met the requirements stated in IE Bulletins No. 75-01 and No. 75-01A. (Attachment A for recap).

b. A subsequent telephone conversation between the inspector and the station administrative assistant on February 25, 1975, indicated that each of the ninety-seven (97) welds had been evaluated and referenced back to the base-line data. A determination had been made by qualified personnel that confirmed that indications observed during the ultrasonic examinations were geometric configurations and were not cracks.

10. Observations

On February 10, 1975, the inspector observed a team of two Peabody Testing/Magnaflux personnel performing weld examinations by each of the two required methods - shear wave (angle beam) and longitudinal wave (straight beam). The examinations observed were performed in accordance with the applicable portions of the approved procedures and in general agreement with accepted scanning practices. The recalibration of equipment, except for transducers was observed by the inspector. The recalibration techniques and methods were observed to be in agreement with the appropriate procedure, and the appropriate calibration blocks were used.

11. Personnel Exposure

In a telephone conversation on February 27, 1975, the licensee stated that the personnel exposures for ultrasonic examinations at Dresden Unit 2 were as follows:

IE Bulletin No.	System	No. UT Personnel	Total Whole Body Exposure in REM
75-01 and 75-01A	Core Spray	16	19.25
74-10, 74-10A, & 74-10B	4-inch Bypass Lines	9	6.5

Attachment:
Attachment A

ATTACHMENT A

DRESDEN UNIT 2

SYSTEM & NUMBER OF WELDS EXAMINED

SYSTEM	NUMBER OF WELDS EXAMINED
1. Main Recirculation Piping, including Jet Pump Riser	26
2. Low Pressure Coolant Injection System	2
3. Reactor Head Spray System	2
4. Control Rod Drive Return System	2
5. Branch Piping Off Main Recirculating Piping	8
6. Reactor Clean-up System	2
7. Reactor Feedwater System	Excluded Carbon Steel
8. Core Spray System	55
	97
Total Number in I.E. Bulletin Program	102
Welds Inaccessible	-5
	97
Core Spray - Nozzle - Safe-end - Dutchman Pipe	-6*
	91

* Complete examination preformed - not included in, I.E. Bulletin 75-01 status.