U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-368/88-03

Docket No. 50-368

License No. NPF-6

Licensee: Arkansas Power and Light
Ninth and Louisiana Street
Little Rock, Arkansas 72203

Facility Name: Arkansas Nuclear One

Inspection At: Russellville, Arkansas

Inspection Conducted: February 23 through March 3, 1988

Inspectors: Harry W Kerch 4/12/88
H. W. Kerch, Senior Reactor Engineer date

Richard H. Harris 4/12/88
R. H. Harris, NDE Technician date

Richard H. Harris for M. Oliveri 4/12/88
M. A. Oliveri, NDE Technician date

Approved by: Jack Strosnider 4/12/88
J. R. Strosnider, Chief, Materials and Processes Section, EPB, DRS, RI date

Inspection Summary: A routine announced inspection conducted on February 23 through March 3, 1988. (Report No. 50-368/88-03)

Areas Inspected: A routine announced inspection was conducted at Arkansas Nuclear Power Station Unit 2. Included in this independent measurements inspection were safety-related piping weldments, components, and supports selected from the Service Water (SW), Chemical Volume Control (CVC), and Pressurizer (PZR) Systems. The inspection included the review of associated documents and procedures. See attachments for specific items inspected and results. Three regional-based NRC Nondestructive Examination (NDE) personnel were utilized during this inspection.

Results: Two violations were identified regarding failure to provide adequate reviews of drawings and inadequate identification of parts.

DETAILS

1.0 Persons Contacted

Arkansas Power and Light (AP&L)

S. McGregor	Inservice Inspection (ISI)
*J. Taylor-Brown	Quality Control Superintendent
J. McWilliams	Maintenance Manager
S. Quennog	Plant Manager
D. Graham	Quality Control Engineer
J. Ray	Quality Engineer Level III
*P. Milchalk	Plant Licensing
L. Humphry	General Manager, Nuclear
*B. Durst	Plant Modifications
G. Goodson	Project Engineer Supervisor
H. Greene	Quality Assurance Supervisor
D. Lomax	Plant Licensing Supervisor
P. Lane	Manager Engineer

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*W. Johnson	Senior Resident Inspector, RIV
L. Gilbert	Inspector, RIV

*Denotes those attending the exit meeting.

The inspector also contacted other administrative and technical personnel during the inspection.

2.0 Independent Measurements - NRC Nondestructive Examination and Quality Records Review of Safety-Related Systems

During the period of February 23 through March 3, 1988 an onsite independent measurements inspection was conducted at Arkansas Nuclear One Power Station Unit 2. This inspection was conducted by NRC regional-based inspectors. The purpose of this inspection was to verify the adequacy of the licensee's nondestructive examination program during plant modification. This was accomplished by duplicating, as near as possible, those examinations required by code and regulations and evaluating the results. The NRC examinations were performed on randomly selected samples from the Chemical Volume Control (CVC), Pressurizer Spray (PZR) and Service Water (SW) Systems. Included in this sample were safety-related piping components and associated hanger/supports fabricated to ASME Section III and examined in accordance with the ASME Section XI, 1974 Edition with Summer 1975 addenda and 1975 Winter addenda when required by the area specific procedure. The items selected were previously inspected and accepted by the licensee as indicated by onsite QA/QC records.

3.0 Nondestructive Examination

Liquid Penetrant Examination

Thirty-three (33) safety-related pipe weldments and adjacent base material (1-inch on either side of the weld) were examined using the solvent removable, visible dye penetrant technique per NRC Procedure NDE-9, Rev. 0, and the licensee's Procedure 4678-ESS-093, Liquid Penetrant for Preservice and Inservice Inspection. Included in this inspection were ASME Code Class 1, stainless steel weldments, pipe to pipe, pipe to elbow and weldolet to pipe weldments selected from the Chemical Volume Control (CVC), Pressurizer (PZR) and Service Water Systems.

Results: No violations were identified.

Visual Examination

Thirty-five (35) safety-related pipe weldments and adjacent base material were examined for cracks, gouges, linear indications, reinforcement and any surface conditions that may interfere with the performance of preservice or inservice inspection. Visual examinations were performed using NRC Procedure NDE-10, Appendix A, the licensee's Procedure 00000-ESS-066 and associated isometrics and drawings.

Included in this sample were ASME Code Class 1 components selected from the Chemical Volume Control (CVC), Pressurizer Spray (PZR) and Service Water Systems.

Results: No violations were identified.

Ultrasonic Examination

Two (2) safety-related pipe weldments were ultrasonically examined using a Sonic Mark II ultrasonic flaw detector per NRC Procedure NDE-1, Rev. 0, in conjunction with the licensee's Procedure 4678-ISI-019 and associated ultrasonic data reports. The instrument calibration (linearity verification) was performed per NRC Procedure NDE-2, Rev. 0, a distance amplitude correction curve (DAC) was constructed using the licensee's calibration blocks UT-45 and UT-46. The instrument setting and search unit (transducer) were matched as near as possible to those indicated by the licensee's ultrasonic data reports in order to attempt to duplicate the original ultrasonic examination.

Results: No violations were identified.

Hanger Support Examination

Nineteen (19) safety-related hanger/supports were visually examined per NRC Procedure NDE-10, Rev. 0, Appendix B, in conjunction with the licensee's Procedure 00000-ESS-066 associated isometrics and "as-built" drawings. Included in this examination were components selected from the Service Water System. The purpose of this examination is to provide a check that support members have not been damaged, misaligned or otherwise adversely affected.

Specific attributes looked for were evidence of cracking, erosion/corrosion, wear, misalignment, welding, loose or broken members, missing or bent parts and improper installation.

Results

No violations were identified; however, Drawing 2-HCC-264-1-H5, issued "as-built" had a discrepancy in the dimensions as shown from the center to center of the anchor placement holes. The dimension shown on the "as-built" is 11-1/2 inches, the actual dimension is 7-3/4 inches.

A further investigation of documentation show that a nonconformance report had been written for this item and dispositioned "use-as-is" (NRC-82-236-2). The inspector has no further concerns about this item.

4.0 Review of Site Procedures

The following procedures were reviewed to verify their technical adequacy and conformance to regulatory and code requirements.

Arkansas Power and Light

APL-M-2410	TECHNICAL SPECIFICATION FOR INSTALLATION, MODIFICATION, INSPECTION, AND DOCUMENTATION OF PIPING SYSTEMS AND PIPE SUPPORTS, HANGERS, AND RESTRAINTS.
QCOIO	CERTIFICATION AND QUALIFICATION OF NDE PERSONNEL.
1092.02	WELDING AND LOGGING PROCEDURE.

Combustion Engineering, Inc.

4678-ESS-093	LIQUID PENETRANT EXAMINATION FOR PRESERVICE AND INSERVICE INSPECTION.

4678-ISI-019	ULTRASONIC EXAMINATION PROCEDURE FOR CLASS I & II AUSTENITIC PIPING.
00000-ISI-029	GENERIC MANUAL ULTRASONIC EXAMINATION PROCEDURE.
00000-ESS-066	VISUAL EXAMINATION PROCEDURE FOR PRESERVICE AND INSERVICE INSPECTION.
NQAI 2.2, Rev. 3	CERTIFICATION FOR INSPECTION/TESTING PERSONNEL.
NQAI 2.4, Rev. 4	CERTIFICATION FOR NDE PERSONNEL.

Independent Testing Laboratories

ITL-UT-A-6	AUTOMATED STRAIGHT BEAM ULTRASONIC EXAMINATION OF PIPING.

Results: No deficiencies were identified.

5.0 Welder Qualifications

The NRC inspector conducted an indepth review of the welder qualification system. The purpose of the review was to determine if the licensee had an effective, accurate system that met applicable code requirements for testing, recording, and updating welder qualifications. Procedure 1092.012 and NCR 85-130, both dealing with recording and updating welder qualifications, were reviewed. The inspector made the following two comments to the ANO welding clerk that maintains the welding qualifications records.

- That the welding supervisor be notified seven days in advance when his welders are due for requalification, rather than two days.
- This notification should be in a memorandum, not a phone call.

The welding clerk and welding engineer indicated they would take action to address the above comments.

Results: No violations were identified.

6.0 Review of Licensee's Radiographs

A sample of the licensee's site safety-related radiographs was reviewed to verify the adequacy of the radiographic program. Radiographs were reviewed for technique, film quality and weld integrity. The following is a list of the weld radiographs reviewed.

- Welds FW23 C2, FW24 C1, FW29 C1 and FW38 C1 on isometric drawing 2CCA-15-1.

- Welds FW22 C1 and FW21 C1 on isometric drawing 2CCA-15-2.
- Welds FW25 C1 (undergoing repair) and FW19 C1 on isometric drawing 2CCA-15-4.
- Welds FW11 on isometric drawing 2CCA-14-1.
- Weld FW24 C1 on isometric drawing 2CCA-15A.

Results: No violations were identified.

7.0 NDE and Visual Personnel Qualifications

The following personnel records were reviewed:

- Wyle Scientific Services Laboratories visual personnel certification records were reviewed and found to meet ANSI-45-2-6 requirements.
- ANO visual personnel certification records were reviewed and found to meet ANSI 45-2-6 requirements.
- Combustion Engineering NDE and visual personnel certification records were reviewed and found to meet ANSI 45-2-6 and SNT-TC-1A requirements.

Results: No violations were identified.

8.0 Review of Modification 82-2072 Pressurizer Spray Isolation Valve

Inspection of the pressurizer spray isolation valve installation activities was performed. The installation of this modification was started during this inspection. Pipe spool sections were being fabricated and preservice inspected on site.

The following documents were reviewed to determine if the licensee's program for control of design changes and modifications had been adequately implemented.

- ISO 2CCA-15-1
- ISO 2CCA-15-2
- Revised ISO 2CCA-15-1 March 1988
- Design change package Revision 1 (DCPR1).

During this inspection, several problems found indicated that site modification 82-2077 Pressurizer Spray Isolation Valve Installation was not being properly implemented to ensure that quality requirements were met. These problems are discussed below.

- The controlling drawing for this modification was isometric drawing ISO 2CCA-15-1. A review of this drawing indicated that there were portions of two ISOs portrayed on the same drawing, ISO 2CCA-15-1 and 2. Both ISOs lacked phantom lines to properly indicate the transition between isometric drawings. In addition, within the welding data package, at the work station, the installation ISO 2CCA-15-1 was illegible with areas of information missing. It was the opinion of the inspector that the craft could not effectively utilize these drawings to perform the subject modification. The inspector also determined that the ISI coordinator used and supplied the ANII an outdated ISO 2CCA-15-1 that was used by the ANI to track this modification for code purposes.

  Failure to provide proper and adequate reviews of drawings before they are distributed is a violation of 10 CFR, Appendix B, Criterion VI and Section 6.0 of the Arkansas Power and Light QA manual. (88-03-01)

- During this inspection, it was disclosed that two subassemblies had been fabricated for the same line segment on ISO 2CCA-15-1. One subassembly was fabricated during the time frame of 1985, the other, January 1988. The two subassemblies were different designs, but both had been inspected and accepted by the licensee's QC group. At the time of the NRC inspection, ANO modifications engineering had made the decision to use the January 1988 design. Both subassemblies were undergoing fabrication and/or ISI during the inspection. In fact, the NRC inspected the subassembly of the 1985 modification and started the inspection of the 1988 subassembly when it was apparent that there was a duplication of subassemblies and weld designators. Further investigation revealed that the assigned modifications engineer was aware of the duplication of subassemblies. He was unaware of the materiel tagging and segregating requirements in the ANO QA manual Section 8.0, "Identification and Control of Materials, Parts and Components." Furthermore, engineering did not have a procedure that reflected this requirement.

  Inadequate identification of parts is a violation of 10 CFR, Appendix B, Criterion VIII and the Arkansas Power and Light QA manual, Section 8.0. (88-03-02)

During this inspection, there was a meeting with the plant manager concerning the quality and material control for modification 82-2072, Pressurizer Spray Isolation Valve. Discussions included all the above items; ANO management wanted to review these findings and requested another meeting the next day. The inspector was informed of the following accomplishments during that meeting.

- New correct and accurate drawings 2CCA-15-1 and 2CCA-15-2 had been prepared and issued to the work station.
- ANO walked down the modification and documented the correct weld identifications and corrected previous inspection reports.
- Correct drawings were provided to the ISI coordinator and the ANI.
- ANO management recognized the need for an engineering procedure for controlling material.

Summary and Conclusions

- Thirty-three (33) pipe weldments were Liquid Penetrant examined.
- Thirty-five (35) pipe weldments were Visual examined.
- Two (2) pipe weldments were Ultrasonicly examined.
- Nineteen (19) hanger/supports were Visually examined.
- Radiographs for ten (10) weldments were reviewed.
- Ten (10) procedures were reviewed.
- Welder qualification system was reviewed.
- NDE and Visual Personnel Qualification records were reviewed.
- Modification 82-2072 Pressurizer Spray Isolation Value was reviewed.

Based on our inspection, we have concluded that this licensee has problems in the areas of drawing and material control. Two violations were identified during the course of this inspection.

9.0 Attachments

- Attachment No. 1 is a tabulation of specific items examined and results achieved.
- Attachment No. 2 is a list of specific hanger/supports examined.

10.0 Entrance/Exit Interviews

Licensee management was informed of the scope and purpose of the inspection at the entrance interview on February 23, 1988. The findings of the inspection were discussed with licensee representatives during the course of the inspection and presented to licensee management at the exit interview (see paragraph 1 for attendees).

At no time during the inspection was written material provided to the licensee by the inspector. The licensee did not indicate that proprietary information was involved within the scope of this inspection.