

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

REGION IV

Report No. 50-313/78-09; 50-368/78-10

Docket No. 50-313
50-368

License No. DPR-51
Construction Permit No. CPPR-89

Licensee: Arkansas Power and Light Company
Post Office Box 551
Little Rock, Arkansas 72203

Facility Name: Arkansas Nuclear One, Units 1 & 2

Inspection at: ANO, Units 1 & 2 Site, Russellville, Arkansas

Inspection conducted: April 25-28, 1978

Inspectors:

Dennis L. Kelly
for A. B. Rosenberg, Reactor Inspector, Engineering
Support Section (Paragraphs 1, 3.a, 5 & 7)

5/16/78
Date

Dennis L. Kelly
D. L. Kelley, Reactor Inspector, Engineering
Section (Paragraphs 2, 3.c & 6)

5/16/78
Date

Dennis L. Kelly
for L. D. Gilbert, Reactor Inspector, Engineering
Section (Paragraphs 3.b & 4)

5/16/78
Date

Other
Accompanying
Personnel:

R. J. Garcia, Engineering Aide, Engineering Support Section

Reviewed:

T. F. Westerman
for T. F. Westerman, Reactor Inspector, Reactor
Operations and Nuclear Support Branch

5/16/78
Date

Approved:

Dennis L. Kelly
for W. A. Crossman, Acting Chief, Engineering
Support Section

5/16/78
Date

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Inspection Summary:

Inspection on April 25-28, 1978 (Report No. 50-313/78-09; 50-368/78-10)

Areas Inspected: Routine, unannounced inspection involving: (1) follow up on previously identified unresolved items; (2) follow up on construction deficiency reports; (3) follow up on the Unit No. 2 CILRT report; (4) follow up on Unit No. 2 commitments to NRR; and (5) review of Unit No. 1 decay heat piping modifications. The inspection involved fifty-five inspector-hours on site by three NRC inspectors.

Results: Of the five areas inspected, no items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

Arkansas Power and Light Company

*J. R. Anderson, Assistant Production Startup Supervisor
+J. W. Anderson, Superintendent of Power Plant
*J. R. Brown, QA Inspector
*D. R. Hamblin, QC Engineer
J. C. Longinotti, Startup Engineer
+S. M. Strasner, QC Inspector
*E. Quattlebaum, QA Inspector

Bechtel Corporation

T. Cousar, Field Engineer - Electrical
J. Eckart, Field Engineer - Civil
*A. Nispeling, Project Field QC Engineer
L. Tilley, Field Engineer - Large Pipe
D. Young, Welding and QA Supervisor
*J. R. Zimmerschied, Project QA Engineer

Tech Sil, Inc.

R. Paulsen, Field Representative

The IE inspectors also interviewed other licensee and contractor personnel including members of the AP&L and Bechtel engineering and QC staffs.

+denotes those attending the Unit No. 1 exit interview.

*denotes those attending the Unit No. 2 exit interview.

2. Follow Up On Previous Inspection Findings - Unit No. 2

(Closed) Unresolved Item (77-22(9)): Penetration Seal Qualification. During inspection 77-22, an unresolved item was identified concerning the ability of the penetration seals/fire stops to withstand fire endurance and hose stream tests. During a later inspection (77-27), the IE inspector reviewed the test procedure, "Penetration Seal Configuration Qualification or Arkansas Power & Light Company's ANO, Unit 2, Alternate B," Rev. 0, dated October 4, 1977. At that time, it was determined that the acceptance criteria had been identified and staff position P.F. 5 had been incorporated in the test.

During this inspection, in discussions with the applicant's representatives, the IE inspector was informed that the test results and data had been received on site. The test report, "Fire and Hose Stream Test of Penetration Seal Systems," dated April 1978, was reviewed by the IE inspector relative to the acceptance criteria above. The IE inspector had no further questions concerning this matter.

This item is considered closed.

3. Significant Construction Deficiencies Reported by the Licensee - Unit No. 2

The IE inspectors reviewed the licensee's action related to items which were previously reported as significant or potentially significant construction deficiencies in accordance with the requirements of 10 CFR 50.55(e).

a. LPSI Pump Supports - Unit No. 2

On December 9, 1977, the applicant reported a potential deficiency related to the discovery of vertical cracks in the top portion of the south support column (concrete) for each of the LPSI pumps. Subsequent inspections revealed that the top 18" to 24" portion of the support columns contained no reinforcing tie bars.

The applicant reported the corrective action that would be taken in a letter to E. M. Howard, dated March 1, 1978. During this inspection, the inspector reviewed the applicant's corrective action, evaluation and other related records for the deficiency.

The applicant has completed the corrective action for both "A" and "B" LPSI pumps and the "A" and "B" containment spray pumps.

The IE inspector had no further questions concerning this matter.

b. Brittle Fracture Control of Main Feedwater Piping

The IE inspector reviewed the 10 CFR 50.55(e) report concerning brittle fracture control of the main feedwater piping. The report concluded that several spool pieces in main feedwater lines 2DBB-1-2 and 2DBB-2-2 between the steam generators and the check valves were not suitable for use at +34⁰F because of low impact test results. The material, considered not suitable for use, was identified as heat number N53083.

The proposed corrective action which included replacing all piping from material of heat number N53083 has been completed. The new pipe is SA 106 Grade B material from heat number N55146. The Charpy impact test results of the new pipe at +340F are above the 25 mils lateral expansion minimum requirement of ASME, Section III, Subsection NC-2310.

The material certification report for mechanical properties was reviewed for conformance to ASME, Section II, Part A for SA 106 Grade B material. The as-built drawings for main steam lines 2DBB-1-2 and 2DBB-2-2 were reviewed and the new weld joints for the replacement piping were noted. The new welds for installing the replacement piping in line 2DBB-1-2 were FW 29 and FW 31 and for line 2DBB-2-2 were FW 43, FW 44, FW 45, FW 46, FW 49 and FW 50. The weld history records for each new weld were reviewed to confirm that qualified welders and welding procedures were used, that postweld heat treatment was performed, and that radiographic inspection was accomplished. The radiographs for welds FW 43 and FW 50 were reviewed for conformance to the requirements of ASME, Sections III and V.

The IE inspector had no further questions concerning this matter.

c. Degraded Raychem Coaxial Cable Shield

The applicant notified the Region IV office of a possible significant deficiency on February 22, 1978, in regard to shield degradation of RG-59 coaxial cable supplied by Raychem. The shield degradation has been analyzed and attributed to the intrusion of moisture into the cable during storage. The cable in question has been removed and replaced with Raychem cable that has had the shield wire tinned. On a previous inspection, the IE inspector reviewed documentation associated with replacement cable. The documentation demonstrating the results of the performance test was not available on site. The applicant has requested this data from Raychem.

This item remains open pending review of the above documentation.

4. Modification of Decay Heat Piping - Unit No. 1

The IE inspector reviewed the documentation concerning correction of five butt weld joints (FW 71, FW 77, SW 99, FW 104 and SW 105) in decay heat line 7DH6. The external pipe diameter mismatch was corrected on these weld joints by depositing additional weld metal

in the transition area to meet the 3:1 taper requirement of USAS B31.7, Chapter 1-V, paragraph 1-727.4.2. Welding was accomplished in accordance with Bechtel Weld Procedure P8-T-Ag, Rev. 9 using the gas tungsten-arc welding process and ER 308L filler metal.

No items of noncompliance or deviations were identified.

5. CILRT Report Follow Up - Unit No. 2

The IE inspector reviewed the final report of the Primary Reactor Containment Integrated Leakage Rate Test and related documentation.

Review of the final report indicated no changes in the test results from those calculated during the test in October 1977. The results were verified to be within the 10 CFR 50, Appendix J limits of 0.75 La (0.075% per day) as reported in Inspection Report 50-368/77-23.

The record copy of the test procedure, No. 2.059.03, was reviewed. All required sign offs were complete. Review of a sample of data sheets revealed an accurate reflection of the data presented in the final report.

No items of noncompliance or deviations were identified.

6. Follow Up on Applicant Commitments

During this inspection, the IE inspector reviewed applicant records and equipment installations to verify that the applicant had satisfied commitments which had been made to the Commission. The commitments which were selected for the follow up included:

- a. Written commitments submitted by letter to the Commission under the ANO, Unit 2 docket number.
- b. Verbal commitments made by the applicant in meetings with NRC/NRR representatives and documented in meeting summary reports.

The results of this review are documented below. This documentation includes the status of the item, reference to the commitment and the inspector's findings.

(Closed) Applicant's Commitment (AP&L letter dated July 8, 1977^{1/}):
Barriers between the printed circuit boards (PC boards) for the two (2) PLCEA subgroups.

^{1/}Letter D. A. Rueter (AP&L Manager, Licensing) to J. F. Stolz (NRC/NRR), dated July 18, 1977.

In the subject letter, the applicant committed to the addition of barriers between the PLCEA subgroups. The PC boards were returned to Electro-Mechanics, Inc. and solder splash shields were installed.

This item is considered closed.

(Closed) Applicant's Commitment (AP&L letter dated May 31, 1977^{2/}): Rerouting of PLCEA subgroup power cables from full length C⁻As.

The subject letter discusses the running of the PLCEA subgroup power cable for a few feet along with full length CEAs, when everywhere else they are separated. The inspector's review revealed that the cables in question had been rerouted and an extension put on a cable tray to accomplish the desired separation.

This item is considered closed.

(Closed) Applicant's Commitment (Meeting Summary dated March 22, 1978; page 3, item 7.6.3^{3/}): Category I, Class 1E redundant indication for valve 2CV-5628-2.

In the meeting, the applicant committed to the above installation of redundant Category I, Class 1E valve indication. He also stated that a delay in implementation of up to six months after operating license issuance could occur due to procurement delays. The IE inspector's review indicated that the delays did not occur and DCP-448, Rev. 2 was completed on April 13, 1978. The only remaining action on the system is electrical testing.

This item is considered closed.

(Open) Applicant's Commitment (AP&L letter dated March 23, 1978^{4/}): Rerouting of vital instrument feeders to CPC panel 2C15.

In the subject letter, the applicant committed to rerouting the vital instrument feeders to CPC panel 2C15 in dedicated conduits containing no other cables.

^{2/}Letter D. A. Rueter (AP&L Manager, Licensing) to J. F. Stolz (NRC/NRR), dated May 31, 1977.

^{3/}Meeting Summary from R. Martin (NRC/NRR) to AP&L, dated March 22, 1978.

^{4/}Letter D. H. Williams (AP&L Manager, Licensing) to J. F. Stolz (NRC/NRR), dated March 23, 1978.

The IE inspector reviewed the status of the applicant's progress and determined that DCP-667 has been issued to perform the work necessary to reroute the cable but has not yet been implemented.

This item remains open.

(Open) Licensee Commitment (Meeting Summary dated March 17, 1978^{5/}):
Offsite power system degradation.

During the meeting, discussion was held regarding the operability of safety related electrical equipment under degraded off site power system conditions. In addition to the study conducted by the applicant, the applicant also committed to several plant electrical modifications. The work on these modifications is presently underway.

This item remains open.

7. Exit Interview

The IE inspector met with the licensee representatives for Unit No. 1 at the site on April 28, 1978. The IE inspector summarized the purpose and scope of this inspection. The findings, as detailed in paragraph 4, were discussed with the licensee representatives.

The IE inspectors met with the applicant representatives for Unit No. 2 at the site on April 28, 1978. The IE inspectors summarized the purpose and scope of the inspection. The findings, as detailed in paragraphs 2, 3 and 5, were discussed with the applicant representatives.

^{5/}Meeting Summary from C. Thomas (NRC/NRR) to AP&L, dated March 17, 1978.