

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

Report Nos. 50-313/78-12  
50-368/78-20

Docket Nos. 50-313

License No. DPR-51

50-368

Construction Permit No. CPPR-89/  
License No. NPF-6

Licensee: Arkansas Power & Light Company  
P. O. Box 551  
Little Rock, Arkansas 72203

Facility Name: Arkansas Nuclear One (ANO), Unit Nos. 1 and 2

Inspection At: ANO Site, Russellville, Arkansas  
and AP&L Corporate Offices, Little Rock, Arkansas

Inspection Conducted: July 10-14 and 25-28, 1978

Inspectors:

T. F. Westerman  
T. F. Westerman, Reactor Inspector

8/10/78  
Date

Dennis L. Kelley  
D. L. Kelley, Reactor Inspector

8/10/78  
Date

M. W. Dickerson  
M. W. Dickerson, Reactor Inspector

8/10/78  
Date

G. L. Madsen  
G. L. Madsen, Chief, Reactor Operations and  
Nuclear Support Branch

8/10/78  
Date

Approved By:

G. L. Madsen  
G. L. Madsen, Chief, Reactor Operations and  
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8/10/78  
Date

7810130053

Inspection Summary

Inspection on July 10-14 and 25-28, 1978 (Report No. 50-313/78-12)

Areas Inspected: Routine, Unannounced inspection of procurement, review and audit, and plant operations. The inspection involved 48 inspector-hours on-site by one NRC inspector.

Results: Within the three areas inspected, three infractions were identified relating to SRC audits, fire protection instrumentation surveillance and control of weld electrodes (DETAILS, paragraphs 13, 14 and 11).

Inspection on July 10-14 and 25-28, 1978 (Report No. 50-368/78-20)

Areas Inspected: Routine, unannounced inspection involving the review of test program status, follow up on IE Bulletins and Circulars, review of Construction Deficiency Reports, items preparatory to operating license issuance, witness of initial fuel load and management meeting. The inspection involved 63 inspector-hours on-site by three NRC inspectors.

Results: Within the six areas inspected, no items of noncompliance were identified. One apparent deviation from commitments to the NRC was identified relative to fire protection (DETAILS, paragraph 3).

DETAILS

1. Persons Contacted

Arkansas Power & Light Company Employees

J. W. Anderson, ANO Plant Manager  
L. Alexander, QC Engineer  
J. R. Anderson, Assistant Production Startup Supervisor  
B. A. Baker, ANO-2 Operations Supervisor  
R. L. Bata, QA Engineer  
T. N. Cogburn, Nuclear Engineer  
E. C. Ewing, Production Startup Supervisor  
D. R. Hamblin, QC Engineer  
T. Holcomb, Scheduler  
P. Jones, Maintenance Supervisor  
G. H. Miller, Assistant ANO Plant Manager  
S. Petzel, Licensing Engineer  
J. Robertson, ANO-1 Operations Supervisor  
S. M. Strasner, QC Engineer  
B. A. Terwilliger, Supervisor Plant Operations  
D. Trimble, Training Coordinator

CE Employees

R. Ahrens, Startup Engineer  
L. Arnold, Startup Engineering Group Leader

2. Inspection Follow Up on Previous Inspection Findings

(Closed) Open Item (Inspection Report 50-368/77-20): Qualification of Refueling Machine and Crane Operators.

Fifty-eight maintenance personnel have received documented training on lifting equipment. Qualification and training on the refueling machine has been completed and documented for 14 licensed operators. Seven non-licensed operators have also received training under supervision of a licensed operator.

3. Fire Doors (Unit 2)

The inspector identified during this inspection that fire doors were not being maintained closed. These doors included 274, 266, 269, 278, 260, 261, 259, 251 and 262. In the licensee's reply to NRR (letter dated 5/17/77) which provided a comparison of ANO-2 Fire Protection to Appendix A of Branch Technical Position APCSB 9.5-1, the licensee stated that, "Fire doors are normally closed." The licensee's failure to maintain fire doors closed is considered a deviation to previous commitment.

4. Initial Fuel Load (Unit 2)

a. Scope

The inspector verified conformance to licensee requirements by selective review of applicable Technical Specification requirements.

The inspector verified conformance to administrative and procedural requirements by observations in the following areas:

- Communications between control room and the refuel level
- Crew operations and staffing
- Proper revision of procedure in place
- Maintenance of counts and inverse multiplication plots
- Boron concentration
- Surveillance of monitoring equipment
- Shift turnover
- Control of personnel access
- Refueling status boards
- Discussions with personnel on loading stations
- Shift schedules

The inspector reviewed the fuel loading procedure to verify the following:

- Master copy was being assembled
- Proper control of procedure changes
- Test deficiencies
- Data sheet legibility, traceability and permanence

The inspector reviewed the control room log for the 48 hours preceding fuel loading.

b. Inspection Findings

- (1) The inspector found that the fuel loading was proceeding in a safe and efficient manner.
- (2) The inspector did identify that compliance with the fire protection Technical Specifications as an unresolved item. It is the licensee's intention to request relief from a portion of these specifications for approximately 45 days. These Technical Specification (TS) requirements include TS 4.3.3.8, 4.7.10.2.C, 4.7.10.3.C.2 and 4.7.10.1.2.C.1 (Unresolved Item 7820-1).
- (3) No items of noncompliance or deviations were identified.



5. Fuel Load License Conditions (Unit 2)

a. Excore Nuclear Instrumentation

The inspector verified that the excore nuclear instrumentation had been installed (SWR 3014). Difficulty had been experienced in that there was not sufficient clearance between the detectors and detector well. This problem was resolved by enlarging the diameter of the detector well by use of a reaming tool.

b. Preoperational Test 2.600.12A "Special Test of Boration/Dilution System"

The inspector verified satisfactory completion of Preoperational Test 2.600.12A. Completion of this test had been delayed pending installation of the seal ring around the reactor vessel.

c. Conduit Fire Barriers

The inspector verified completion of the installation of fire barriers. The resolution of questions concerning the installation of the fire barriers at the end of conduits rather than at wall penetration is to be completed by Mode 2.

6. Operator Training (Unit 2)

The inspector followed up on the licensee's July 5, 1978 letter to NRR, Operator Licensing Branch, regarding the plant's response to April 20, 1978 Operator Licensing Branch. The specific items verified by the inspector are as follows:

Emergency Plan

OP 2202.36 Determining Magnitude of Release, Rev. 0, was issued May 27, 1978.

A four hour training session was provided for each prospective operator.

Fuel Handling

Additional hands-on fuel handling training has been completed. Each licensed operator has completed at least one transfer of the dummy fuel element from the upender into the vessel and back.

Control Systems

Training sessions of approximately two hours duration have been conducted for each licensed operator relating to the Steam Dump and Bypass Control System and the Feedwater Control System.

### Safeguards Actuation

Emergency Procedure OP 2202.08, Revision 0, Inadvertent Safety Injection Actuation, has been written.

### CPC/COLSS/Computer

OP 2105.01, Permanent Change 2, has been discussed. This change delineates the department responsible for changing addressable constants and establishes administrative controls required to maintain the validity of the addressable constants.

The inputs for letdown flow and steam generator blowdown flow are being changed to analog inputs.

No items of noncompliance or deviations were identified.

### 7. Follow Up on NRR Site Visit, July 6-8, 1977 (Unit 2)

During the site visit by NRR/DSS on July 6-8, 1977, it was determined that a method of level detection in the Service Water Pump bays was necessary. The applicant, through various discussions with NRR/DSS, agreed to provide an alternate to the installation of class IE level detection. Letters of agreement with the Corps of Engineers providing telephone and two-way radio communication with the Corps at the Dardanelle Dam plus plant procedures were agreed upon for the following conditions:

- a. Deliberate reservoir drawdown below the 335 foot level.
- b. Notification within 10 minutes if an uncontrolled drawdown below the 335 foot level occurs.
- c. A surveillance procedure for ensuring telephone and radio communication.

The inspector reviewed the applicant's response, which consisted of the following:

Procedure 1203.02, 7/7/78, which discusses a deliberate drawdown of the reservoir.

Procedure 1202.24, 9/20/77, which discusses a loss of the Dardanelle Dam.

Standing Order #31, 7/78, which requires monthly communication check with the Corps of Engineers.

No discrepancies were noted. This item is closed.

8. Cable Separation and Cable Tray Covers (Unit 2)

This item is a remaining construction item. Due to the last minute pulling of cables, it was not until recently that an adequate quantity of cable tray covers could be inspected.

The inspector examined areas of the plant with an applicant representative. The inspector noted, during the inspection, work in progress in congested areas where barriers and coatings were being installed. The two most congested areas, cable spreading room and the hallway just outside, were the areas of closest examination. Also examined was room 2091 which contains both red and green safety trains. No discrepancies were noted. This item is closed.

9. Follow Up on Construction Deficiency Reports (Unit 2)

On June 2, 1978, the applicant reported a possible significant deficiency as defined by 10 CFR 50.55(e) to RIV. The report concerned problems encountered with valves manufactured by EPG. The following is a listing of the valve types and the problems encountered.

Efcomatic - Actuated Ball Valves -

- 90V DC motors supplied instead of 125V DC motors.
- One valve failed seismic testing in the Triaxial Mode.
- Valves failed to fully close.

Electrotrip Motor Operated Valves -

- Insufficient Environment Test Data.
- Cast iron trip stop failed.

Matryx Air Actuated Ball Valves -

- No seismic Test Data.

The applicant responded in writing on the following dates:

June 21, 1978 - Motor operated valve trip stop failure.

June 30, 1978 - Matryx Air Actuated Ball Valves seismic qualification.

June 30, 1978 - Efcomatic - Actuated Ball Valves seismic qualification.

July 7, 1978 - Efcomatic - Actuated Ball Valves failure to fully close.

June 16, 1978 - Efcomatic - Actuated Ball Valves 90V DC motor supplied for 125V DC service.

June 8, 1978 - Motor operated Ball Valves failure of extension stems.

The inspector reviewed the applicant's responses and reviewed the records of the applicant's corrective actions. Of the above possible significant deficiencies, all but two were considered reportable after evaluation. The two that were not considered reportable were: (1) the failed trip stop motor operated ball valve; and (2) the seismic qualification data for the Matryx Air Actuated Ball valve.

This item is closed.

10. Emergency Diesel Generator Differential Relay Seismic Qualification (Unit 2)

This item resulted from discussion between the applicant and NRR relative to the seismic qualification of certain instrumentation associated with the diesel generator. It was determined that the differential relays did not meet the 1974 Revision of IEEE 323. New relays were ordered. The applicant issued Design Change Package (DCP) #682 to perform the work necessary to change the relays.

The inspector reviewed the Material Receiving Report (MRR #76668) which contained the documentation of the seismic qualification. The inspector also reviewed the DCP which indicated that the subject relays had been changed. No discrepancies were identified. This item is closed.

11. Review of Plant Operations (Unit 1)

a. Scope of Inspection

The inspector reviewed the following shift logs and operating logs for completeness and staff review:

- . Station Log (3/29/78 - 6/27/78)
- . NSS and Safeguard Auxiliary Log (3/28/78 - 7/25/78)
- . ESAS Log (3/28/78 - 7/25/78)
- . Standing Orders
- . Jumper Bypass Log
- . Trouble Reports

The inspector conducted a tour of accessible areas, including observations (as appropriate) of the following:

- . Monitoring Instrumentation
- . Radiation Controls
- . Plant Housekeeping
- . Fluid Leaks
- . Piping Vibrations
- . Pipe Hanger/Seismic Restraint



- . Selected Valve Position and Equipment Control Switches
- . Lockout Tags
- . Lighted Annunciators
- . Plant Tours
- . Control Room Manning

b. Inspection Findings

- (1) The inspector identified one apparent item of noncompliance during the tour of accessible areas. The inspector found a Bechtel Weld Rod Warmer (Number 145) containing E-7018 weld rod unplugged (cold) on the 314 floor level of the reactor building near the demineralizer. The finding of the uncontrolled weld rod and warmer is contrary to the requirements of Bechtel Procedure WPMC-1, "Welding Filler Material Control Procedure Specification," paragraph 4.3.4. Paragraph 4.3.4 requires in part that, "... Portable rod warmer shall be checked out and into the rod room on a daily basis. During use, portable rod warmers shall be continuously heated. ... Unused electrodes shall be returned to the rod storage area at the end of each shift or destroyed." A check with the Bechtel Weld Rod Room indicated that rod warmer number 145 had not been returned to the room for some time. An attempt was made to locate records for the warmer when it was issued but these could not be immediately located. The licensee was informed that failure to properly control the warmer and the weld rod was considered an infraction.
- (2) The inspector noticed that numerous channels of system heat tracing were alarmed and could not be cleared by the operator. A discussion with a representative of the licensee indicated that the systems were alarming on high alarm. He indicated that action would be taken to initiate work on the systems to resolve the problem.
- (3) The inspector noticed that numerous indicating lights were out on various electrical panels throughout the plant. The licensee indicated these would be replaced and that their program for replacement would be emphasized.

The inspector had no additional questions in this area.

12. Procurement (Unit 1)

The inspector's review of this area was based on procedures applicable to Units No. 1 and No. 2 and the inspection of implementation was based on review of eight Unit No. 1 and No. 2 procurement packages of safety related components.

The inspector verified that procurement documents used were properly approved and contained quality control inspection and record requirements. In addition, the inspector verified for those components or materials which had been delivered that: documentary evidence was available to support conformance to procurement requirements; they were inspected upon delivery and were handled in accordance with measures established for control and separation of nonconforming material, parts and components; and they were supplied by an approved vendor.

No items of noncompliance or deviations were identified.

13. Review and Audits (Unit 1)

The inspector reviewed the licensee's program of review and audits conducted by the Plant Safety Committee and the Safety Review Committee. Included were reviews and audits required by the Technical Specifications to be completed.

The records reviewed by the inspector were as follows:

PSC Minutes, 5/19/77 - 4/27/78  
SRC Minutes, 6/13/77 - 4/10/78  
SRC Audits of 1/19-20/77 and 7/26-28/77

During this review, it was established that no audit of facility activities relative to the results of all actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety had been conducted by the Safety Review Committee since July 28, 1977 (the next scheduled audit is for July 19-20, 1978). This is contrary to the requirements of TS 6.5.2.8.C which requires that this audit be conducted at least once per six month period.

This matter had been discussed in an SRC meeting on June 1, 1978 but acceptable corrective action had not been proposed or completed at the time of the inspection. The inspector informed the licensee that failure to conduct the audit at the frequency required was considered an infraction.

During the review of SRC minutes, it was established that the review of proposed Technical Specification changes recorded on August 26, 1977 and October 31, 1977 as minutes of SRC meetings were actually a polling of the members of the SRC which resulted in their concurrence with the proposed TS changes. This matter was discussed with the licensee relative to whether this constituted a meeting or constituted a quorum as specified in TS 6.5.2.5 and 6.5.2.6, respectively. This matter is considered an unresolved item pending approval of changes to the Unit No. 1 TS which would clarify this matter.

Additionally, during the review of the PSC minutes it was established that the review of procedures and changes to procedures were being conducted by routing of Special Meeting Review Sheets which polled the members with respect to their concurrence to the procedures or changes to a procedure. In this matter, procedures and/or changes to procedures are thus approved. These review sheets are then made a part of an actual meeting. In some cases the procedures/changes are approved more than the maximum required time of 14 days prior to an actual meeting of the PSC. This matter was also discussed with the licensee and will remain an unresolved item pending approval of changes to the Unit No. 1 TS which would clarify this matter.

The inspector had no additional questions in this area.

14. Fire Protection (Unit 1)

Amendment No. 30, issued March 3, 1978, to the Unit No. 1 Facility Operating License imposed new fire protection system requirements. The licensee is allowed to complete system surveillance requirements within the first surveillance interval. In follow-up to the issuance of these Technical Specifications (TS), the inspector found that the 31 day operability requirements for non-supervised circuits (TS 4.19.3) had not been conducted. The licensee was informed that this was an apparent item of noncompliance.

15. Exit Meeting

An exit meeting was conducted on July 14, 1978 with Mr. J. Anderson and other members of the plant staff. An exit meeting was conducted on July 27 with Mr. H. Miller and other members of the plant staff. The inspectors discussed the scope of the inspection and summarized the inspection findings which are detailed in this report.

16. Management Meeting

A management meeting was conducted with corporate members of the AP&L staff following the conclusion of this inspection. The purpose of this meeting was to discuss the general status of the IE inspections on-site and implementation of the IE Revised Inspection Program (On-Site Resident Inspector).

Meeting Attendance

AP&L Personnel Present

W. Cavanaugh III, Executive Director of Generation and Construction  
D. A. Rueter, Director of Technical and Environmental Services  
D. R. Sikes, Director of Operations

Nuclear Regulatory Commission

G. L. Madsen, Chief, Reactor Operations and Nuclear Support Branch, RIV  
T. F. Westerman, Principal Inspector - ANO, Units 1 and 2