

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

IE Inspection Report No. 50-313/76-06

Docket No. 50-313

Licensee: Arkansas Power & Light Company
Sixth and Pine Streets
Pine Bluff, Arkansas 71601

License NO. DPR-51

Category C

Facility: Arkansas Nuclear One, Unit 1

Location: Russellville, Arkansas

Type of Licensee: B&W, PWR, 2568 Mwt

Type of Inspection: Routine, Unannounced

Dates of Inspection: April 20-22, 1976

Dates of Previous Inspection: March 23-25, 1976

Principal Inspector:

D. G. Anderson
D. G. Anderson, Reactor Inspector

4/27/76
Date

Accompanying Inspector:

J. E. Gagliardo
J. E. Gagliardo, Reactor Inspector

4/27/76
Date

Reviewed By:

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

4/27/76
Date

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SUMMARY OF FINDINGS

I. Enforcement Action

A. Violations

None identified by the inspectors.

B. Infractions

Contrary to TS 6.7.3, temporary changes were made to Procedure 1502.03 on (or about) March 29, 1976 without the approval of the Plant Superintendent. (DETAILS, paragraph 4)

C. Deficiencies

Contrary to Criteria XI and XVII of 10 CFR 50, Appendix B, the licensee was not recording the original data taken in the boron analyzes of vessel and spent fuel storage pool water samples. (DETAILS, paragraph 5)

II. Licensee Action on Previously Identified Enforcement Items

Not inspected.

III. Design Changes

Not inspected.

IV. Unusual Occurrences

None reported to, or identified by, the inspector.

V. Other Significant Findings

A. Licensee Action on Previously Identified Unresolved Items

1. 7502/2 - The halon fire system did not meet all of the requirements of the acceptance tests. (DETAILS, paragraph 7)
2. 7605/11 - The licensee's engineering group and the Safety Review Committee are reviewing the effect of the inadvertent addition of $\text{Na}_2\text{S}_2\text{O}_3$ on the NaOH tank. (DETAILS, paragraph 8)

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VI. Management Meetings

A. Entrance Meeting

A pre-inspection meeting was conducted with Mr. J. W. Anderson, Jr., Plant Superintendent and members of his staff on April 20, 1976. Mr. Anderson was informed that the purpose of this inspection was to review in detail the preparation for and activities conducted during this defueling outage.

B. Exit Meeting

At the conclusion of the inspection on April 22, 1976, a management exit meeting was conducted with Mr. J. W. Anderson, Jr., ANO-1 Plant Superintendent, and members of his staff. Items reviewed at this meeting are as follows:

1. The items of noncompliance noted as a result of this inspection.
2. Apparent inadequacy in the implementation of procedures with regard to loose tools noted on the catwalk above the reactor vessel. (DETAILS, paragraph 10)
3. The need for a pre-startup test program/plans to be developed in preparation for operations after this extended outage. (DETAILS, paragraph 6)
4. Review of AO 76/01 and AO 76/02. The inspectors expressed, in general, satisfaction with the ANO-1 staff's detail to and execution of procedures and activities during this defueling outage. The licensee representative acknowledged this commendation.

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DETAILS

1. Persons Contacted

Arkansas Power and Light Company (AP&L)

J. W. Anderson, Jr., Plant Superintendent
G. H. Miller, Assistant Plant Supervisor
T. Martin, Maintenance Supervisor
R. G. Carroll, Health Physics Supervisor
L. W. Humphrey, Quality Assurance Engineer
V. Kinsey, Secretary, PSC
M. Bishop, Records Supervisor
L. Alexander, Quality Control Engineer
R. Fishencord, Health Physicist
J. L. Bates, Radiochemistry Supervisor
C. Zimmerman, Reactor Operator
B. Simmons, Reactor Operator
B. Parker, Shift Supervisor
J. Robertson, Assistant Supervisor of Plant Operations
M. E. Frala, Radiochemist
C. Meyers, QA Inspector

Babcock and Wilcox (B&W)

F. R. Faist
K. Wandling

2. Plant Status

The plant was shutdown and completely defueled during the period encompassed by the inspection. The reactor core barrel and reactor plenum were removed and the surveillance specimen holder tubes were being removed from the thermal shield at the time of the inspectors exit from the plant on April 22, 1976. The licensee representative indicated that a request had been submitted to NRC/DRL by AP&L to provide relaxation of the requirement (TS 4.2.7) related to the surveillance schedule for these reactor vessel specimens. AP&L would like to operate without these surveillance specimen tube holders in place at least until the next anticipated refueling outage late in 1976.

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3. Reactor Vessel Video Scanning

The inspectors observed video movies of scans of the surveillance specimen holder tubes and the area at the bottom of the reactor vessel surrounding the incore instrument nozzles.

Representatives of Babcock and Wilcox (B&W) were present at the plant to coordinate these inspection activities. In particular, a 1-3/4" diameter Reiss Series 80 Watertight camera was being used and the visual image was being reproduced in tape on a Sony AV 3650 Videocorder. The inspectors reviewed the tapes on a Setchell-Carlson television monitor. The inspectors noted that due to the presence of suspended material in the reactor vessel water, some optical clarity of the picture was lost, but the B&W representatives indicated that further filming will take place after the water is cleaned up. The inspectors indicated that a complete review of these films will be made by NRC representatives at a future inspection.

4. Preparation for the April 1976 Outage

The objective of this inspection effort was to verify that the licensee's preparations for the April 1976 Outage were in conformance with all applicable NRC surveillance requirements.

a. Scope of Inspection

The inspector reviewed licensee records to verify that:

- (1) The fuel transfer system checkout had been performed in accordance with Procedure 1502.03.
- (2) The main and auxiliary fuel handling bridges had been checked out in accordance with Procedure 1502.03.
- (3) The spent fuel handling bridge checkout had been performed in accordance with Procedure 1502.03.
- (4) The communications systems had been checked out in accordance with Procedure 1502.03.
- (5) The Source Range Monitors (SRM) had been functionally tested in accordance with Procedure 1105.01.
- (6) The Area Radiation Monitors (ARM) on the refueling level (RE-8017) and the spent fuel storage area (RE-8009) were operational.

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- (7) Preventative maintenance checks had been performed on the reactor building polar crane prior to handling vessel components.
- (8) The vessel water boron concentration for refueling was established prior to head removal in accordance with TS 3.8.4.

b. Inspection Findings

The inspector found that the licensee had completed and documented all of the above requirements. While reviewing the licensee's records, the inspector found that changes had been made on (or about) March 29, 1976 to the working copies of Attachments "D" and "F" to Procedure 1502.03 (Preparation for Refueling). The intent of these procedures was changed, however, the changes were not subsequently approved by the Plant Superintendent.

Technical Specification (TS) 6.7.1 establishes the requirements for detailed written procedures including the above procedure. TS 6.7.3 provides the mechanism by which temporary changes may be made to the procedures covered by TS 6.7.1. The second sentence of TS 6.7.3 states that, "Temporary changes which may affect the intent of the original procedure may be made, provided such changes are approved by the Plant Superintendent."

The licensee's failure to have the Plant Superintendent approve the above temporary changes is contrary to the above TS requirement.

No other discrepancies were found in this area.

5. Fuel Handling Activities

The objective of this part of the inspection was to verify that the licensee's actions to defuel the reactor vessel and remove the vessel internals were conducted in conformance with the requirements of the licensee's technical specifications.

a. Scope of Inspection

The inspector reviewed the licensee's records of the defueling and verified that:

- (1) neutron monitoring of the core was in accordance with TS 3.8.2.
- (2) containment integrity was maintained in accordance with TS 3.8.6 and 3.8.7.
- (3) radiation levels at the refueling area and at the spent fuel storage area were monitored in accordance with TS 3.8.1.

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- (4) one decay heat removal pump and cooler were operable.
- (5) boron concentrations in the reactor vessel and in the spent fuel storage pool were maintained at greater than that required for refueling.
- (6) fuel accountability methods were in accordance with procedure 1502.05.

The inspector also toured the facility to verify that items (3) and (6) above were being maintained on a continuing basis. The inspector also observed the storage of core internals and studs to assure that they were properly stored to protect against damage.

b. Inspection Findings

The inspector found that all of the TS and licensee requirements cited above had been completed satisfactorily. The licensee was also maintaining controls to assure that the requirements of items (3) through (6) are being satisfied on a continuing basis.

While reviewing the licensee's surveillance of boron concentrations, the inspector found that the licensee was not retaining a record of the data used to calculate the boron concentrations of vessel and spent fuel storage pool water samples. The chemistry technicians are recording only the final boron concentration of the water sample.

Criterion XI of Appendix B to 10 CFR 50 states in part that, "Test results shall be documented and evaluated to assure that test requirements have been satisfied." Criterion XVII of 10 CFR 50, Appendix B states in part that, "Inspection and test records shall, as a minimum, identify the inspector or data recorder, the type of observation, the results, the acceptability,"

Sections 11.4.2 and 11.4.3 of the licensee's Quality Assurance Manual amplify the licensee's commitment to the above Appendix B requirements as follows:

- 11.4.2 Records of test results shall include at least the following:
- 1) Identity of part or material, system, structure, or component under test.
 - 2) Date of test.
 - 3) Date taken.
 - 4) Name and signature of individual performing test.

(continued)

- 5) Test results and conclusions.
- 6) Identity of portable test equipment.
- 7) Recommendations for corrective action or retesting resulting from the test.
- 8) Review signatures of cognizant supervisors, and final review signature of Plant Superintendent when required.

11.4.3 Testing records shall provide objective evidence that the test was performed in compliance with approved procedures. Testing records shall be maintained in the plant files in accordance with the procedures for document retention (QCP 1004.25).

The licensee's failure to record test data, other than the final results, constitutes an item of noncompliance with the above Appendix B requirements.

No other discrepancies were found in this area.

6. Preparation for Operations After the Outage

The inspector discussed with licensee representatives their plans for testing those systems which will be disturbed during the outage. The licensee representatives said that the plans for the preoperational testing have not yet been formulated. They said that these plans would be developed later into the outage. This item will remain open pending the inspector's review of the test program/plans at a future inspection.

7. Other Activities Underway during this Outage

The inspectors noted that several other activities were taking place during this outage.

Representatives of Westinghouse are performing the warranty inspection on the Main Turbine. The inspectors noted the disassembled turbine and were favorably impressed with the excellent condition of the turbine blades and internals.

The licensee representative indicated that the $\text{Na}_2\text{S}_2\text{O}_3$ recirculation pump is scheduled for installation during this outage (7502/1).

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The inspector discussed the results of the Halon Fire System acceptance tests (7502/2) which were conducted on March 31, 1976. The licensee representative indicated that the ceiling and false floor areas of the relay rooms maintained the required halon concentration for the specified ten minute period, however, the ceiling of the control room was only able to maintain the required halon concentration for a period of four to six minutes. A report is being prepared for review by NELPIA which documents the results of this test. The inspector will review this report and NELPIA evaluation in a future inspection.

The inspectors had no further comments on these items.

8. Inadvertent Addition of $\text{Na}_2\text{S}_2\text{O}_3$ to the NaOH Tank (76-05/11)

The inspector reviewed a memorandum from the Plant Superintendent to the Plant Safety Committee (PSC) addressing the need to investigate the $\text{Na}_2\text{S}_2\text{O}_3$ addition incident for possible safety implications. The Plant Superintendent requested that the PSC recommend any corrective action, procedures, or changes to procedures which might be needed in order to prevent this type of incident in the future.

The PSC met on April 13, 1976 and recommended that AP&L Engineering and the Safety Review Committee investigate the effect of $\text{Na}_2\text{S}_2\text{O}_3$ on the carbon steel tank walls of the NaOH Tank.

Corrective action taken to date has been the labeling of each tank and preparation of additional procedures for sampling of both tanks.

The inspector reviewed rough drafts of the following applicable procedures:

- OP 1607.11 Sampling the Reactor Building Spray Pumps
- OP 1607.12 Sampling of the Borated Water Storage Tank (BWST)
- OP 1607.13 Sampling the Sodium Hydroxide Tank (T-10)
- OP 1607.14 Sampling the Sodium Thiosulfate Tank (T-9)

This item remains unresolved pending analysis of this incident by the SRC and approval of procedures by PSC.

(continued)

9. Review of Plant Operations

a. Shift Logs and Operating Records

The inspector reviewed the records listed below, held discussions with plant staff members and inspected the Control Room on April 21 and 22, 1976.

- (1) ANO-1 Station Log: Entries made in this log from January 1, 1976 to April 21, 1976 were observed to be filled out, initialed, and reviewed.
- (2) Auxiliary Operators Log: The inspector reviewed entries in this log for the period January 1, 1976 to April 21, 1976.
- (3) Jumper and Bypass Log: The inspector reviewed entries in this log for the period December 30, 1975 to April 19, 1976. The log did not contain discrepancies which were in conflict with Technical Specification requirements.
- (4) Trouble Reports: The inspector selected seven trouble tickets for review, but complete history on each item was not immediately available during the time period of the inspection. The licensee indicated that the information will be available for evaluation at the next inspection.

The inspector noted from observation of entries in the station log that inspections are being made at least once per day of suction line piping on the makeup, decay heat removal, and building spray systems.

The inspector had no further comments on this item.

10. Tour of Accessible Areas

The reactor was completely defueled, so access was allowed to all areas of the plant. The inspectors observed that the normal shift requirements in the control room were being met even though there was no fuel in the reactor. The inspectors also observed that:

Monitoring instrumentation is being recorded as required.

Radiation controls have been properly established.

Plant housekeeping conditions are adequate.

There are no significant fluid leaks.

There is no excessive piping vibrations.

Pipe hanger/seismic restraint setting and oil levels are satisfactory.

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The inspectors did note, however, that a "C" clamp and an open end wrench were not secured on the catwalk above the reactor vessel refueling pool. The inspectors also noted an empty reservoir on a shock suppressor attachment to a main steam line in the reactor building. This had been reported previously as Licensee Event Report 76/05. The licensee representative indicated that the seals will be replaced and the reservoirs refilled on any leaking shock suppressors during this outage.

The inspectors had no further comments on this item.

11. Review of Licensee Event Reports

The inspectors reviewed plant records related to the following Licensee Event Reports:

AO 76/01 Group 6 Ratchet Rod Drop
AO 76/02 Failure to Record Station Battery Voltage for each Pilot Cell

This review was performed to verify that:

- a. The cause was identified, evaluated, and corrective action taken.
- b. The details were clearly reported to the NRC and facility management as required by the Technical Specifications.
- c. Each report was submitted for distribution and review was performed as required by the Technical Specifications.
- d. Follow-up action is in progress or completed.
- e. Limiting conditions for operation were not exceeded.

The inspectors had no additional comments on this item.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV
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June 28, 1976

Arkansas Power and Light Company
ATTN: Mr. J. D. Phillips
Senior Vice President
Sixth and Pine Streets
Pine Bluff, Arkansas 71601

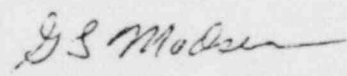
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Gentlemen:

Thank you for your letter of June 23, 1976, in response to our letter dated June 2, 1976.

We have no further questions at this time and will review your corrective action during a future inspection.

Sincerely,



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

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