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

IE Inspection Report No. 50-313/76-12 — Docket No. 50-313

Licensee: Arkansas Power & Light Company — License No. DPR-51
Sixth and Pine Streets
Pine Bluff, Arkansas 71601 — 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: September 20-24, 1976

Dates of Previous Inspection: August 10-13, 1976

Principal Inspector: M. W. Dickerson — 10-1-76
M. W. Dickerson, Reactor Inspector — Date

Accompanying Inspector: None

Reviewed By: G. L. Madsen — 10-1-76
G. L. Madsen, Chief, Reactor Operations and Nuclear Support Branch — Date

SUMMARY OF FINDINGS

I. Enforcement Action

A. Violation

None identified during this inspection.

B. Infractions

None identified during this inspection.

C. Deficiencies

None identified during this inspection.

II. Licensee's Action on Previously Identified Enforcement Matters

75-07 IB/1 Fire Stops Design Control

The corrective action discussed by AP&L in their letters to the NRC dated 9/19/75 and 1/19/76 was reviewed by the inspector and established as being approximately 90% complete. Several fire stop areas remain incomplete. AP&L estimates the work on the remaining areas will be complete by 10/31/76. This item remains open pending completion of the work.

75-07 IC/1 Reporting Requirements

The inspector reviewed the licensee's response related to Technical Specification requirements for reporting of environmental occurrences contained in their letter to the NRC dated 9/3/75. As a result of this review, this matter is considered resolved.

76-06 IB Tempora Changes Not Approved

The inspector reviewed the licensee's response relative to temporary changes made without approval to attachments "D" and "F" of Procedure 1502.03, "Preparation for Refueling," contained in their letter to the NRC dated 5/20/76. As a result, the changes were found to have been approved 4/29/76.

This matter is considered resolved.

76-06 IC Chemical Test Records

The corrective action discussed by AP&L in their letter to the NRC, dated 6/23/76, relative to chemical test records, has been reviewed by the inspector. As a result of the review, there are no additional questions at this time.

This matter is considered resolved.

(continued)

III. Design Changes

Not inspected.

IV. Unusual Occurrences

None identified during this inspection.

V. Other Significant Findings

A. Current Findings

1. Plant Status

During the initial portion of the inspection the reactor was being operated at 98% power. However, on 9/23/76, at 10:22 p.m., the turbine generator was inadvertently tripped during an attempt to correct an apparent false indication of excessive vibration on turbine bearing No. 8. The indication had been noted earlier but readings on the bearing vibration recorder were normal. An attempt was made to maintain the reactor in operation after the turbine trip but at 10:34 p.m. the reactor tripped due to high pressure-temperature. This was attributed to a speed control problem with Feedwater Pump "A". The reactor was restarted and at the termination of the inspection on 9/24/76, reactor power was being held at 40% power while the problem with Feedwater Pump "A" was being corrected.

2. Unresolved Items

No new unresolved items were noted during this inspection.

B. Status of Previously Reported Unresolved Items

75-9 E.1(b)(1) Control Panel Annunciators and Alarms

The licensee submitted a Technical Specification change to Section 3.3.4(B) on 10/7/75, relative to required band widths rather than specific levels and concentrations for the Sodium Thiosulfate and Sodium Hydroxide tanks. This was the result of previous inspection findings wherein annunciators were noted to be in the Hi alarm condition. With the submittal to licensing of a request for Technical Specification change to resolve the problem, this matter is considered resolved. However, the inspector will continue to monitor this situation.

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76-5 V.A.1 Failure to Provide Procedures Committed to in the FSAR

The licensee is in the process of writing procedures 1101.01, "Plant Limits and Precautions," and 1101.02, "Plant Set Points," and has stated that the procedures will be approved for use prior to plant startup following refueling (presently scheduled for January 1977).

This matter remains open.

76-5 V.B.1 Conflict Between QCP 1004.21 and the QA Manual

Procedure QCP 1004.21, "Handling of Procedures," is presently under revision to resolve the conflicts. A representative of the licensee indicated that the procedures will be issued by 10/25/76.

This matter remains open.

76-5 V.B.2 Inadvertent Addition of $Na_2S_2O_3$ to the Sodium Hydroxide Tank

The Safety Review Committee has determined that the corrosion rate resulting from the inadvertent addition of two thousand pounds of Sodium Thiosulfate into the Sodium Hydroxide Carbon Steel tank is low enough to be acceptable. In addition, procedures related to sampling and chemical analysis are available for use. This matter is considered resolved. (DETAILS, paragraph 2)

76-5 V.B.3 Training

Discussions with the training coordinator and the Supervisor of Plant Operations established that discussions relative to inadvertent group control rod drops had been provided to the operators regarding the correct action to be taken.

This matter is considered resolved.

VI. Management Meeting

A. Entrance Meeting

A preinspection meeting was held with Messrs. J. W. Anderson and L. Alexander on September 20, 1976. Mr. Anderson was informed that the following items would be reviewed during the inspection:

(continued)

1. Calibration

2. Maintenance

3. Review of plant operations

4. Review of safety limits, limiting safety system settings and limiting conditions for operations

5. Previous items of noncompliance

6. Previous unresolved items

B. Management Interview

At the conclusion of the inspection on September 29, 1976, an exit meeting was held with representatives of the ANO-1 plant staff. The following individuals were present:

G. H. Miller, Assistant Plant Supervisor
R. I. Turner, Assistant Instrumentation & Control Supervisor
L. Alexander, Quality Control Engineer
F. B. Foster, Production Engineer
S. S. Strasner, Quality Control Inspector

The inspector discussed the following items:

1. The resolution of previous items of noncompliance, (Section II of the Summary of Findings).

2. The status of previously identified unresolved items, (Section V.B of the Summary of Findings).

DETAILS

1. Persons Contacted

The following individuals, in addition to those listed under the Management Interview section of this report, were contacted during the inspection:

Arkansas Power & Light Company (AP&L)

J. W. Anderson, Jr., Plant Superintendent
J. A. Albers, Plant Operator
J. L. Bates, Radiochemistry Supervisor
G. M. DuPriest, Shift Supervisor
R. T. Elder, Assistant Instrumentation & Control Supervisor
C. A. Halbert, Technical Support Engineer
P. W. Jacob, Production Engineer
P. Jones, Instrumentation & Control Supervisor
M. S. Nations, Auxiliary Operator

2. Inadvertent Addition of $Na_2S_2O_3$ to the Sodium Hydroxide Tank

The inspector determined that the following procedures are available for use with respect to the Sodium Thiosulfate and Sodium Hydroxide tanks:

a. 1605.34, "Determination of High Concentration of Sodium Thiosulfate in Thiosulfate Tank (T-9)."

b. 1605.33, "Determination of Alkalinity in Sodium Hydroxide Tank (T-10)."

c. 1607.14, "Sampling The Sodium Thiosulfate Tank (T-9)."

An additional measure taken to preclude inadvertent addition to either the Sodium Thiosulfate tank or the Sodium Hydroxide tank was to provide labels on each of the respective access ports on the tanks. It was through the access port on the Sodium Hydoxide tank that the Sodium Thiosulfate was inadvertently added into the Carbon Steel Sodium Hydroxide tank.

The Safety Review Committee reported in the minutes of their 7/26/76 meeting that the corrosion rate on the Carbon Steel tank resulting from the inadvertent addition of Sodium Thiosulfate is low enough to be acceptable.

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Based on the corrective action taken and the SRC conclusions, this matter is considered resolved.

3. Review of Plant Operations

During the inspection, the conduct of plant operations was reviewed to determine that selected phases of facility operations conform to requirements of the facility license and the licensee's administrative procedures.

a. The inspector reviewed Shift Logs and Operating Records and verified the following:

(1) Control room log sheet entries for the period 9/1/76 to 9/21/76 were filled out, initialed and reviewed.

(2) Auxiliary log sheet entries for the period 9/1/76 to 9/21/76 were filled out, initialed and reviewed.

(3) ANO-1 Station Log: entries made in this log from 9/1/76 to 9/21/76 were observed to be filled out, initialed, and reviewed.

(4) Log book reviews were being conducted by the staff.

(5) Standing orders and special orders did not conflict with the intent of Technical Specification requirements.

(6) Bypass and Jumper Log entries from April 19, 1976, to 9/21/76 did not contain bypassing that conflicts with Technical Specification requirements.

(7) Trouble reports from 9/1/76 to 9/21/76 to confirm there were no violation of Technical Specification reporting, or, LCO requirements.

b. The inspector conducted a tour of accessible areas and included the following observations:

(1) Monitoring instrumentation was recording as required.

(2) Radiation controls were properly established.

(3) Plant housekeeping conditions were adequate.

(4) There were no significant fluid leaks.

(5) There was no excessive piping vibrations. Pipehangers/ seismic restraint settings and oil levels were satisfactory.

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(6) Selected valves were properly positioned.

(7) Equipment caution and lockout tag information properly utilized.

(8) Discussion with a control room operator pertaining to the reasons for selected lighted annunciators.

(9) Plant tours are conducted by the plant superintendent and the shift supervisor on duty consistent with Qa program/administrative procedures.

(10) The control room manning was in conformance with the requirements of 10 CFR 50.54(k) and the facility Technical Specifications.

The inspector also conducted drop-in visits to the control room throughout the inspection and at shift changeover. Control room manning requirements and other operations were observed to be acceptable.

The inspector had no further questions in this area.

4. Review of Safety Limits, Limiting Safety System Settings and Limiting Conditions For Operations

The inspector verified reactor operations to be in accordance with Technical Specifications limiting safety settings, safety limits, and limiting conditions for operation. The review covered the period of 9/1/76 to 9/24/76 and included startup, power operation, and shutdown for each of the following systems:

a. Reactor coolant system

b. Reactivity and power control

c. Power conversion and auxiliary systems

d. Containment systems

e. Emergency core cooling systems

f. Other engineered safety features

g. Electrical systems

The inspector utilized direct observation and review of operating records to verify conformance. There were no noncompliances with

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Technical Specifications noted with the exception of a violation of T/S 3.5.2.5.4, reported as Reportable Occurrence Number 76-27 to I&E on 9/14/76. This item will be reviewed in detail after the licensee's report on this matter is received and will be considered in a future report.

The inspector had no additional questions in this area.

5. Calibration

a. The inspector verified that the frequency of calibration, service status and trip points required by Technical Specifications have been met for the components selected in each of the following systems. In addition, calibration records were examined to ascertain if procedural requirements were met.

(1) Reactor Coolant System
Channel A Temperature Calibration

(2) Reactivity and Power Control
Power Range Channel NI-7

(3) Containment System
Analog Channel No. 2

(4) Power Conversion and Auxiliary System
Steam Line Break Instrumentation and Control System
Pressure Sensors 2617 A&B, 2673 A&B, 2667 A&B, and 2668 A&B

(5) Electrical System
Off-site Power Relays - Undervoltage and Protective Relaying Interlocks

(6) Emergency Core Cooling System
Reactor Building Spray Chemical Addition - Analog Channels 1, 2 and 3

During this review the inspector pointed out to the licensee that Table 7-9, page 7-54 of the FSAR contains an incorrect listing of Reactor Outlet Temperature Elements for NNI inputs to the Reactor Protection System. Correct designations are contained, however, in Figures 7-1 and 7-20 of the FSAR as well as on drawing M-230. A representative of the licensee indicated a correction would be made to Table 7-9.

b. The inspector verified that the procedures used to calibrate the components in A above contained:

(1) Reviewed and approved as required by the Technical Specification.

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(2) Acceptance values for trip settings using applicable Technical Specifications.

(3) Detailed stepwise instructions.

(4) Technical content that, if followed, will result in satisfactory calibration.

c. The qualification of two individuals having responsibility for performing calibration of equipment were examined and determined to be in conformance with ANSI 18.1 requirements.

d. The inspector selected Digital Voltmeter (DVM ϕ2(I)) Standard Resistor (STO 14 (MET) - 4030Bs) and Test Gauge (TG 52(I)) used as primary measuring/testing devices in the calibration of plant equipment and verified that

(1) Calibration frequency was met and accuracy specified as precribed by internal procedures or specifications.

(2) Accuracy is traceable to NBS.

(3) Storage and control of the selected devices were proper.

6. Maintenance

The inspector reviewed records of plant maintenance activities to verify that:

a. The limiting condition for operation was met while the components or systems were removed from service for maintenance.

b. Required administrative approvals were obtained prior to initiating the work.

c. Maintenance activities were accomplished using approved procedures.

d. Maintenance activities were inspected in accordance with provisions of the licensee's requirements.

e. Functional testing and calibration as necessary prior to returning the component or system to operating status were included.

f. Quality Control records are available for maintenance activities.

g. Maintenance activities were accomplished by qualified personnel.

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h. None of the maintenance records reviewed indicated that a Reportable Occurrence as defined by Technical Specification should have been reported.

To accomplish the review as stated above, the inspector reviewed two maintenance activities associated with each of the following:

a. Reactor Coolant System

J0 1175 CV-2680 Loop B Main FW Isolation
J0 1166 CV-2630, CV-2680 Main FW Isolation A/B

b. Reactivity and Power Control

J0 1306 CRDM Rod 3, Group 6
J0 1142 PI Tube Rod 8, Group 8

c. Containment Systems

J0 1040 Penetration 6-2
J0 1041 Personnel Hatch

d. Power Conversion and Auxiliary System

J0 1169 E-24B Ring Header OTSG "B"
J0 1180 Secondary System SG E-24B

e. Electrical System

J0 1052 K4B Diesel Generator No. 2
J0 1204 CV-3807 Service Water to Emergency Diesel Heat Exchanger E20A

f. Emergency Core Cooling System

J0 1059 CV-2214 Letdown Cooler Isolation
J0 1206 P7 A/B Emergency FW Pump

g. Other Engineered Safety Feature

J0 1181 BW-6A
J0 1081 Core Flood Level Transmitter