

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

Docket Nos. 50-313/80-11
50-368/80-11

License No. DPR-51
NPF-6

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

Facility Name: Arkansas Nuclear One (ANO), Units 1 and 2

Inspection at: ANO Site, Russellville, Arkansas

Inspection Conducted: June 22-July 21, 1980

Inspectors: LA Yandell for 8/7/80
W. D. Johnson, Senior Resident Inspector Date

LA Yandell for 8/7/80
L. J. Callan, Resident Inspector Date

Approved: D. M. Hunnicutt for 8-7-80
D. M. Hunnicutt, Chief, Reactor Projects Section #2 Date

Inspection Summary:

Inspection Conducted During Period of June 22-July 21, 1980 (Report No. 50-313/80-11)

Areas Inspected: Routine, announced inspection including Surveillance Observation, Followup on IE Bulletins, Operational Safety Verification, Plant Trips, and Followup on Previously Identified Items. The inspection involved 105 inspector hours on site by two NRC inspectors.

Results: Within the five (5) areas inspected, one item of noncompliance was identified (infraction - Physical Security, paragraph 4.B(3)g.)

Inspection Conducted During Period of June 22-July 21, 1980 (Report No. 50-368/80-11)

Areas Inspected: Routine, announced inspection including Operation Safety Verification, Surveillance Observation, Maintenance, Followup on IE Bulletins, Pressurizer Code Safety Valve Testing, Plant Trips, and Followup on Previously Identified Items.

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The inspection involved 115 inspector hours on site by two NRC inspectors.

Results: Within the seven (7) areas inspected, four (4) items of noncompliance and one deviation were identified (infraction - pressurizer code safety valves, paragraph 7; infraction - posting of radiation area, paragraph 4.B(6)d; infraction - access control to high radiation area - paragraph 4.B(6)d; infraction - Physical Security, paragraph 4.B(3)g; deviation - feedwater chemistry, paragraph 4.B(3)(e)).

DETAILS SECTION1. Persons Contacted

J. P. O'Hanlon, ANO General Manager
 G. H. Miller, Engineering & Technical Support Manager
 B. A. Baker, Operations Superintendent
 T. N. Cogburn, Plant Analysis Superintendent
 E. C. Ewing, Plant Engineering Superintendent
 F. Foster, Operations and Maintenance Manager
 J. McWilliams, Assistant Operations Superintendent
 J. Albers, Planning and Scheduling Supervisor
 D. Snellings, Technical Analysis Superintendent
 L. Bell, Assistant Operations Superintendent
 G. Halverson, Assistant Health Physics Supervisor
 D. Glenn, Health Physics Supervisor
 T. Baker, Chemistry and Environmental Supervisor
 D. Wagner, Assistant Health Physics Supervisor
 H. Hollis, Security Coordinator
 L. Humphrey, Administrative Manager

The inspectors also contacted other plant personnel, including operators, technicians and administrative personnel.

2. Follow Up on Previously Identified Items (Units 1 and 2)

(Closed) Infraction 313/8006-03: Waste Control Operator Entering High Radiation Areas Without a Radiation Survey Instrument or Health Physics Coverage.

The licensee reported full compliance with procedures in this area on April 17, 1980. However, on June 26, 1980, the licensee discovered that a Waste Control Operator entered a high radiation area without a radiation survey instrument or Health Physics coverage and, in so doing, received a total dose of approximately 500 millirems. As a result of this latest incident, the licensee implemented further corrective actions, including the direct assignment of portable radiation survey instruments to Waste Control Operators that will be stored in the Control Room and more thorough counseling of Waste Control Operators and their supervisors on the precautions to be observed prior to entering high radiation areas. The inspector reviewed the licensee's total corrective action on this item and has found it to be acceptable.

(Closed) Deviation 313/8005-01; 368/8005-01:

IE Bulletin 79-21 commitment.

The licensee has distributed Standing Order 47 which provides unit operators with correction curves for use with various water level measuring systems inside containment. This completes the action required by IE Bulletin 79-21.

3. Follow Up on IE Bulletin (Units 1 and 2)

IE Bulletin 80-04

This bulletin, entitled "Analysis of a PWR Main Steam Line Break with Continued Feedwater Addition," was issued on February 8, 1980. The licensee's response, covering both units, was dated May 27, 1980. This response did not include evaluation of the ability of the Unit 1 emergency feedwater (EFW) pumps to remain operable after extended operation at runout flow. The licensee's response of July 1980, reported the results of the EFW pump operability analysis concluding that, even with no operator action, the EFW pumps would remain operable during and following a main steam line break accident considering runout flow conditions. The licensee proposed no corrective action in response to Item 3 of the bulletin. The licensee's response to IEB 80-04 will be further reviewed by the NRC headquarters staff.

IE Bulletin 80-03

This bulletin, entitled, "Loss of Charcoal from Standard Type II, 2-inch, Tray Adsorber Cells," was issued on February 6, 1980. The licensee's response, covering both units, was dated March 24, 1980. This response reported the results of a visual inspection of the charcoal adsorber cells at ANO. The inspector identified no problems associated with the licensee's response to this bulletin.

IE Bulletin 80-08

This bulletin, entitled, "Examination of Containment Liner Penetration Welds," was issued on April 7, 1980. The licensee's response, covering both units, was dated June 27, 1980. This response provided the requested information.

4. Operational Safety Verification (Units 1 and 2)

The inspectors performed certain activities to ascertain that the facility is being operated safely and in conformance with regulatory requirements and that the licensee's management control system is effectively discharging its responsibilities for continued safe operation. The inspectors activities and findings in this regard are described in the following paragraphs.

- A. Certain inspection activities were performed frequently (several times per week).
- (1) Control room observations were made which normally included the following items:
 - a. Verification of licensees adherence to selected Limiting Conditions for Operation (LCO).
 - b. Observation of instrumentation and recorder traces for abnormalities.
 - c. Verification of proper control room and shift manning.
 - d. Verification of operator adherence to approved operating procedures.
 - (2) Selected logs and operating records were reviewed to obtain information on plant operations, detect trends, determine compliance with regulatory requirements and assess the effectiveness of communications provided by the logs and records.
- B. Certain inspection activities were performed on a weekly basis:
- (1) The operability of selected emergency safeguards features systems was verified by noting valve positions, breaker positions, instrumentation availability and general conditions of major system components. Systems selected for review during this inspection were:
 - a. 'A' & 'B' trains of Unit 1, High Pressure Safety Injection System
 - b. 'B' Train of Unit 2, Low Pressure Safety Injection System
 - c. 'B' Train of Unit 2, Containment Spray System
 - d. 'A' Train of Unit 1, Low Pressure Safety Injection System
 - e. 'A' High Pressure Safety Injection (HPSI) Pump, Unit 2:

The inspector noted that the test gages installed on the suction and discharge lines of 'A' HPSI Pump were not isolated as required by Attachment 'A' of Procedure 2104.39, HPSI system operation. The apparent cause was a failure to isolate the gages after performing the monthly surveillance test on the pump. Supplement 1 to Procedure 2104.39, which provides the monthly surveillance procedures, does not specify restoration of the system valves in accordance with Attachment A after completion of the test. Licensee representatives have indicated

that corrective action will be taken to ensure system restoration in accordance with Attachment A after testing. This item will remain open pending inspector review of the adequacy of the corrective action. (Open item 368/8011-6)

- (2) The licensee's equipment control was reviewed for proper implementation by performance of the following inspection activities:
 - a. Review of tagout records to determine that the licensee has complied with LCO with respect to removal of equipment from service.
 - b. Independently verifying the proper return to service of selected safety-related components or systems.
 - c. Independent verification of proper conduct of selected safety-related tagouts currently in effect.

- (3) The inspectors conducted tours of accessible areas of the facility to assess equipment conditions, plant conditions, radiological controls, security, safety, and adherence to regulatory requirements. During these tours, the inspectors made observations in the following categories:
 - a. General plant/equipment conditions including operability of standby equipment.
 - b. Maintenance requests had been initiated for equipment in need of maintenance, and the appropriate priority has been assigned.
 - c. Fire hazards.
 - d. Controls of ignition sources and flammable materials.
 - e. Conduct of activities in progress in accordance with the licensee's administrative controls and approved procedures. During a review of Unit 2 feedwater chemistry practices, the inspector noted that some items were not in accordance with the Final Safety Analysis Report (FSAR). Specifically, contrary to Section 10.3.5 of the FSAR, catalyzed hydrazine is not used in the feedwater to scavenge oxygen. In addition, ammonia and hydrazine are not sampled five times/week as indicated by Section 10.3.5 of the FSAR. This is an apparent deviation. (368/8011-5)

f. Condition of the interior of selected electrical and control cabinets.

g. Physical Security

The inspector verified that the security plan is being implemented by observing:

- . The security organization is properly manned and that security personnel are capable of performing their assigned functions.
- . Protected area barriers are not degraded.
- . Isolation zones are clear.
- . Persons and packages are checked prior to entry into the protected area.
- . Vehicles are properly authorized, searched, and escorted or controlled within the protected area.
- . Persons within the protected area display photo identification badges. Persons requiring escort are properly escorted.
- . Vital area physical barriers are not degraded. One item of noncompliance was identified in this area. Refer to Attachment A to this inspection report. (Attachment A contains 2.790(d) information.)

h. Plant housekeeping.

i. Radioactive waste system.

(4) The inspectors reviewed the licensee's trouble tickets to verify the operability of this problem identification system.

(5) The inspectors conducted discussions with operators and other plant personnel and observed several shift turnovers.

(6) The inspectors verified the implementation of the licensee's radiation protection controls by:

a. Observing portions of an area survey performed by health physics personnel.

- b. Examining randomly selected radiation protection instruments that are in use and verifying operability and adherence to calibration frequency.
- c. Verifying by observation and review that the requirements of one current RWP were being followed.
- d. Verifying compliance with requirements of 10 CFR 20 regarding posting.

On July 7, 1980, the inspector found that the 2T12 valve gallery on elevation 335' in the Unit 2 Auxiliary Building was not posted as a radiation area although in a portion of this area, the general radiation level was 20-30 millirems per hour. This is an apparent item of noncompliance with the posting requirements of 10 CFR 20.203(b). (368/8011-2)

On June 30, 1980, the inspector found door 364 open. Door 364 provides access to the Unit 2 F-15A and B filter room which was a posted high radiation area with accessible whole body radiation of 100 millirems per hour. This is an apparent item of non-compliance with the access control requirements of 10 CFR 20.202(b)(3). (368/8011-3)

- C. Certain inspection activities were performed once during this reporting period.

(1) ESF System Operability Verification

The inspector performed a complete walkdown of the diesel fuel oil system for Units 1 and 2. The inspector noted that one of the normally open valves (FO-5) in line between the above ground storage tank (T25) and the Unit 2 below ground storage tanks was not administratively covered by existing operating procedures. Licensee representatives have indicated that this valve will be added to their pre-critical valve lineup. This item will remain open pending inspector review of the revised valve lineup. (368/8011-7)

- (2) The inspector verified that a selected portion of containment isolation lineup was correct. Containment penetrations inspected were:

1P-13, 15, 26, 27, 31, 32, 33, 34, 36, 39, 40, 41, 43.

- (3) The inspector verified that plant conditions, equipment status and operating parameters fulfill the following LCO's:

Unit 1

- 3.2.1.2 Boric Acid Addition Tank
- 3.3.3 Operable ECCS Equipment
- 3.4.1 Steam and Power Conversion System
Operability Requirements above 280° F
- 3.6.1 Reactor Building Integrity

Unit 2

- 3.1.2.4 Charging Pumps
- 3.1.2.8 Borated Water Sources
- 3.1.3.1 CEA Position
- 3.3.3.4 Meteorological Instrumentation

- (4) The inspector reviewed the licensee's Jumper and Bypass log and no conflicts with Technical Specifications were identified.
- (5) The inspector witnessed selected portions of a liquid radioactive release and verified the following items:
- a. The release (1LR80-231) was conducted in accordance with approved procedures.
 - b. The required release approvals were obtained.
 - c. The required samples were taken and analyzed.
 - d. The effluent release control instrument was operable and in use during the release.

5. Surveillance Observations (Units 1 and 2)

- A. The inspector observed portions of the following surveillance test:
Procedure 2106.06, Steam Driven Emergency Feedwater Pump Test
- B. The inspector determined through personal observation and review of records where appropriate that:

- (1) Approved procedures were used.
 - (2) Test instrumentation was calibrated.
 - (3) Limiting conditions for operation were met when the system being tested was removed from service.
 - (4) The test data was recorded accurately and completely. Selected test results were independently verified by the inspector.
 - (5) The surveillance test documentation was properly reviewed and test discrepancies were rectified.
 - (6) Test results met technical specification requirements.
 - (7) The test was done by qualified personnel.
- C. Additionally, the inspector witnessed portions of the following surveillance tests:
- (1) Procedure 2304.37, Plant Protection System Channel A
 - (2) Procedure 1303.102, Model HFM-3 Hand and Foot Monitor Calibration
 - (3) Procedure 2304.101 Excore Instrumentation B Test
 - (4) Procedure 1304.70, R. B. Isolation and Miscellaneous Valve Stroke Test
- D. For each test, the inspector verified:
- (1) The test was scheduled in accordance with technical specification requirements.
 - (2) Procedures were being followed.
 - (3) The test was conducted by qualified personnel.
 - (4) Limiting conditions for operation were met while conducting the test.

6. Maintenance Observations (Unit 2)

- A. The inspector observed portions of the following maintenance activities:
- (1) Job Order 2-5404-80-4, Change Oil in Upper and Lower Reservoirs on "A" Service Water Pump Motor.

- (2) Temporary Job Order 255-24-80, Repair 2CV-1075 (Replace Valve Operator Motor)
 - (3) Maintenance Procedure 2402.21, Reactor Coolant Pump Shaft Seal Disassembly and Reassembly. (RCP "A")
 - (4) Repair of "B" Circulating Pump Discharge Valve.
- B. The inspector determined through personal observation and review of records where appropriate that:
- (1) These activities were not violating limiting conditions for operations.
 - (2) Redundant components were operable.
 - (3) Required administrative approvals and tagouts were obtained prior to initiating the work.
 - (4) Approved procedures were being used, if appropriate.
 - (5) The procedures used were adequate to control the activity.
 - (6) Activities were being accomplished by qualified personnel.
 - (7) Replacement parts and materials being used were properly certified.
 - (8) Radiological controls were proper and that they are being properly implemented.
 - (9) Ignition source controls were properly implemented.
 - (10) QC hold points, if any, were observed.
 - (11) Equipment was properly returned to service.
- C. The inspector reviewed outstanding job orders to determine that the licensee is giving proper priority to safety-related maintenance and that a backlog is not developing on a given system which might affect its operability. The inspector also determined that the proper approvals were obtained for job orders which appear to constitute design changes.

7. Plant Trips (Units 1 and 2)

The inspectors witnessed the trips of Unit 1 and Unit 2 from the control rooms after the loss of 500 KV off site power on June 24, 1980. The inspectors verified that the automatic actions taken by the plant equipment and the manual actions taken by plant personnel were correct. The

single exception was the tripping of the Unit 1 turbine-driven emergency feed pump (P7A) on its initial start. The trip mechanism was reset after a few minutes and the pump was restarted satisfactorily. The initial tripping of P7A is thought to have been caused by condensate, which had collected in the idle steam supply line, impinging on the turbine and mechanically jarring loose the overspeed trip latching mechanism. The licensee is investigating this problem in order to provide corrective steps to prevent reoccurrence.

After the loss of off site power, the inspectors verified that both units initiated natural circulation and that adequate margin to saturation was maintained.

Licensee Event Reports 80-21/03L-0 and 80-22/01T-0 for Unit 1 and 80-42/01T-0 for Unit 2 have been submitted covering the events of June 24, 1980. No items of noncompliance or deviations were identified.

Pressurizer Code Safety Valve

The licensee performed maintenance on one of the pressurizer code safety valves, 2PSV-4633, during cold shutdown on June 27, 1980. Subsequently, the unit was heated up to Mode 3 operation at 1800 hours on June 30, 1980. Technical Specification 3.4.3 permits entering Mode 3 with an inoperable pressurizer code safety valve if a preliminary cold setting was made prior to heatup, but provided for only 12 hours of Mode 3 operation for the purpose of setting the pressurizer code safety valve under ambient (hot) conditions. The licensee did not complete the required testing of 2PSV-4633 until 1500 hours on July 1, 1980. This period of 21 hours of Mode 3 operation prior to proving the operability of 2PSV-4633 in an apparent item of noncompliance with the provisions of Technical Specification 3.4.3. (368/8011-1)

Subsequent to testing 2PSV-4633, the licensee applied a gag to the valve in an effort to stop it from weeping. This action is permitted by step 7.3 of Surveillance Test Procedure 2104.03. This procedure allows a maximum gagging period of 10 hours. The Station Log and the completed Job Order indicate that this valve was gagged for a period of 10 hours and 25 minutes on July 1-July 2, 1980. Licensee representatives stated that the recorded times for applying and removing the gag might be in error. This item remains unresolved pending a determination of whether the 10 hour allowed gagging period was exceeded. (368/8011-8)

8. License Application Submittals for Licensee Training Staff Personnel - (Units 1 and 2)

The inspector identified, by discussions with the Training Supervisor, three training instructors who are or will be involved in training of plant operators in systems, integrated plant response, transients, and

simulator courses. Of these individuals, the Training Supervisor holds Senior Reactor Operator licenses for Units 1 and 2; the Unit 2 Training Coordinator holds a Senior Reactor Operator license for Unit 2; and an individual who will soon be assigned as the Training Coordinator for Unit 1 holds a Reactor Operator license for Unit 1 and has submitted an application for a Senior Reactor Operator license for Unit 1.

9. Exit Interview

The inspectors met with Mr. J. P. O'Hanlon (Plant General Manager) and other members of the AP&L staff at the end of various segments of this inspection. At these meetings, the inspectors summarized the scope of the inspection and the findings.