



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report Nos.: 50-348/85-05 and 50-364/85-05

Licensee: Alabama Power Company
600 North 18th Street
Birmingham, AL 35291

Docket No.: 50-348 and 50-364

License Nos.: NPF-2 and NPF-8

Facility Name: Joseph M. Farley 1 and 2

Inspection Conducted: January 11 - February 10, 1985

Inspectors:	<u>Kenneth M. Jenison</u>	for	<u>2/25/85</u>
	W. H. Bradford, Senior Resident Inspector		Date Signed
	<u>Kenneth M. Jenison</u>	for	<u>2/25/85</u>
	W. H. Roland, Resident Inspector		Date Signed
Approved by:	<u>F. S. Cantrell</u>		<u>2/26/85</u>
	F. S. Cantrell, Section Chief		Date Signed
	Division of Reactor Projects		

SUMMARY

Scope: This routine, unannounced inspection entailed 178 inspector-hours on site in the areas of licensee action on previous enforcement matters, monthly surveillance observation, monthly maintenance observation, operational safety verification, independent inspection effort, Unit 2 containment building tendons, engineered safety features system inspection and licensee event report followup.

Results: One violation was identified. The violation involved 10 CFR 50, Appendix B, Criterion VIII.

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REPORT DETAILS

1. Licensee Employees Contacted

J. D. Woodard, Plant Manager
D. N. Morey, Assistant Plant Manager
W. D. Shipman, Assistant Plant Manager
R. D. Hill, Operations Superintendent
C. D. Nesbitt, Technical Superintendent
R. G. Berryhill, Systems Performance and Planning Superintendent
L. A. Ward, Maintenance Superintendent
L. W. Enfinger, Administrative Superintendent
W. C. Carr, Assistant Operations Superintendent
J. E. Odom, Operations Sector Supervisor
B. W. Vanlandingham, Operations Sector Supervisor
T. H. Esteve, Planning Supervisor
J. B. Hudspeth, Document Control Supervisor
L. K. Jones, Material Supervisor
R. H. Marlow, Technical Supervisor
L. M. Stinson, Plant Modification Supervisor
W. G. Ware, Supervisor-Safety Audit and Engineering Review

Other licensee employees contacted included technicians, operations personnel, maintenance personnel, instrument and control personnel, security force members and office personnel.

2. Exit Interview

The inspection scope and findings were summarized during management interviews throughout the report period and on February 8, 1985, with the plant manager and selected members of his staff. The inspection findings were discussed in detail. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters (92702)

This subject was not addressed in the inspection.

4. Monthly Surveillance Observation (61726)

The inspectors observed and reviewed Technical Specification required surveillance testing and verified that testing was performed in accordance with adequate procedures; that test instrumentation was calibrated; that limiting conditions were met; that test results met acceptance criteria and were reviewed by personnel other than the individual directing the test; that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel; and that personnel conducting the tests were qualified.

The inspector witnessed/reviewed portions of the following test activities:

- FNP-2-STP-40.0 - Safety Injection with loss of off-site power test.
- FNP-2-STP-29.2 - Cycle 4 shutdown margin calculation
- FNP-2-STP-11.7 - Verifying RHR relief valves isolation are open.
- FNP-1/2-STP-1.0 - Operations daily and shift surveillance requirements modes 1, 2, 3, 4 (Appendix 1 - mode 5 for Unit 2).
- FNP 1-STP-7.0 - Quadrant power tilt ratio calculation.
- FNP-1-STP-109.0 - Power range neutron flux channel calibration.
- FNP-1-STP-50.0 - Radiation monitor monthly source check.
- FNP-1-STP-11.6 - Residual heat removal valves inservice test.
- FNP-1-STP-33.0A - Solid state protection system train A operability test.
- FNP-1-STP-33.1 - Safeguards test cabinet train A function test.
- FNP-1-STP-33.2 - Reactor trip breaker train A operability test.
- FNP-1-STP-10.0 - ECCS flow path verification.
- FNP-1-STP-14.0 - Containment integrity verification.

Within the areas inspected there were no violations or deviations identified.

5. Monthly Maintenance Observation (62703)

Station maintenance activities of safety-related systems and components were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides, industry codes and standards, and were in conformance with Technical Specifications.

The following items were considered during the review: limiting conditions for operations were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials were properly certified; radiological controls were implemented; and fire prevention controls were implemented.

Work requests were reviewed to determine the status of outstanding jobs and to assure that priority was assigned to safety-related equipment maintenance which may affect system performance. The following maintenance activities were observed/reviewed:

- Unit 1 - HV-8032 - reactor vessel flange leak-off isolation valve.
- 1-B-diesel generator.
- 2A and 2B motor generator sets.
- Various freeze protection activities.

Unit 2 containment purge valves.
Unit 2 hydraulic and mechanical snubbers.
Unit 2 containment personnel air lock.
Unit 2 auxiliary feedwater temperature monitoring system.
Unit 2 refueling activities.
Unit 2 main steam isolation valves.
Unit 2 HFA relay replacement program.

6. Operational Safety Verification (71707)

The inspectors observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the report period. The inspectors verified the operability of selected emergency systems, reviewed tagout records, and verified proper return to service of affected components. Tours of the auxiliary, diesel, and turbine buildings were conducted to observe plant equipment conditions, including fluid leaks and excessive vibrations.

The inspectors verified compliance with selected Limited Condition for Operations (LCO) and results of selected surveillance tests. The verifications were accomplished by direct observation of monitoring instrumentation, valve positions, switch positions and review of completed logs, records, and chemistry results. The licensee's compliance with LCO action statements were reviewed as they happened.

The following system and components were observed/verified operational:

- Station electrical boards in the control room and various electrical boards throughout the plant for proper electrical alignment.
- Certain accessible hydraulic snubbers.
- Accessible portions of service water and component cooling water systems.
- Units 1 and 2 suction piping, discharge piping and valves on the auxiliary feedwater system.
- Diesel generators and support systems.
- Certain accessible portions of chemical volume control system (CVCS) piping and valves to and from the charging/high head safety injection pumps.
- Certain portions of residual heat removal (RHR) and containment spray systems.
- Portions of various other systems (safety-related and nonsafety-related).

7. Independent Inspection Effort (92706)

The inspectors routinely attended meetings with certain licensee management personnel and observed various shift turnovers between shift supervisors, shift foremen and licensed operators. These meetings and discussions provided a daily status of plant operation, maintenance and testing activities in progress, as well as discussions of significant problems.

On January 16, 1985, at approximately 11:00 a.m. the inspector observed a leak check in progress on a new portion of fire protection piping in preparation of hydrostatic test procedure 2980-01-PT. The fire protection piping is constructed using screwed fittings.

The test was being accomplished under Maintenance Work Request (MWR) No. 103482, Fire Protection System Modification on Unit 2. Step 3 of the hydrostatic test procedure required that the system be pressurized to a test pressure of 200 psig and held at that pressure for two hours. The inspector observed that the test pressure gauge indicated 200 psig. The inspector questioned the Grinnel contractor concerning the test. The contractor stated that the test was not in progress, that only a preliminary leak check was being performed. The procedure did not contain a section which authorized this leak check, yet the system was at hydrostatic test pressure (200 psig) instead of design pressure (150 psig). Procedure FNP-0-PMP-505, System Inservice and Hydrostatic/Pneumatic Testing, Section 5.4, requires the shift foreman to review the procedure and sign the test data sheet authorizing the test to proceed. The shift foreman had not reviewed or signed the test data sheet.

It is common industry practice when constructing screwed systems such as fire protection systems to construct a small portion, blank off, fill with water and leak check. This is to prevent the necessity of dismantling large sections to repair a small leak. However, this leak checking should be accomplished using an approved procedure. The new piping had been isolated and was controlled by a tagout procedure which was approved by the shift foreman. The tagout did not indicate approval of a pre-hydrostatic leak check of the system. This appears to be a procedural violation. However, because the shift foreman and shift supervisor had reviewed and approved the maintenance work request covering the test, the inspectors determined that the licensee did maintain control of the process. In addition, the licensee agreed in the exit interview of February 8, 1985, to strengthen their control over hydrostatic testing. A step will be added to hydrostatic test procedures describing leak checks, and the appropriate leak check pressures.

This is an Open Item (364/85-05-01) Hydrostatic Testing Procedure Revision.

8. Unit 2 Containment Building Tendon(s) Failure

On January 28, 1985, a visual walkdown inspection of the containment building and tendon grease caps was conducted by the licensee in preparation for a Integrated Leak Rate Test (ILRT). During this inspection the licensee

found the grease cap on the shop end of vertical tendon V16 deformed. The field anchor was found broken into seven pieces and numerous wires were broken. Vertical tendon V21 was found to have a cracked field anchor. These two tendons have field anchors of the same heat number HV-016. The licensee found that there are a total of 49 tendons with field anchors of this same heat number. The licensee has sent samples of the broken field anchor to two different laboratories for analysis. Grease samples were also sent offsite for analysis. At the close of this report period the failure mechanism has not been identified.

The licensee plans to detension and replace all tendons of the heat number HV series. New field anchors will be installed. The licensee plans to inspect the field anchor end of 55 tendons of other heat numbers.

The inspectors have reviewed the procedures prepared by the contractor (INRYCO, INC.) which will be used to accomplish this work. These procedures were reviewed by Alabama Power Company.

The inspector will continue to follow this work.

9. Engineered Safety Features System Walkdown (71707)

The inspectors walked down the accessible portions of the containment cooling system to assess system operability. The walkdown included service water piping to and from the coolers, instrumentation, fans, coolers, pipe hangers and supports, valves, dampers and conduit. The Technical Specifications, Final Safety Analysis Report (FSAR) Procedure FNP-1/2-SOP-12.1 Containment Air Cooling System Revision 3 and system drawings were reviewed to ensure that the system operated as designed and that the documentation matched the system. Unit 1 operated at 100 power throughout the inspection period; so that only Unit 2, which was in a refueling outage was walked down inside containment. One problem area was found concerning fusible links on the cooler discharge duct trap door.

Incorrect fusible links were installed on the trap door for Unit 2 containment coolers 2B and 2C. Each containment cooler is equipped with a dropout plate which is held shut during normal operation by eight fusible links. After a Loss of Coolant Accident (LOCA), and when temperatures inside the containment building reaches 135°F the links open, disconnecting the cooler discharge from the containment ventilation ductwork, thereby, reducing fan backpressure. FSAR Section 6.2.2.3.2 specifies 135°F as the release temperature of the fusible links. On January 25, 1985, the inspector found one link each for coolers 2B and 2C stamped 165°F. Also, 2B and 2C coolers had 1 and 3 separated links, respectively.

A review of Maintenance Work Requests (MWRs) indicate that the incorrect links may have been installed in November 1982. MWR 66081 indicated that several links had recently been replaced on cooler 2B; however, no material issue number was recorded on the MWR. MWR 66166 indicated that the worker

had "replaced fusible link for fire damper" for cooler 2C; again, no material issue number was recorded. The work request had incorrectly called the trap door a fire damper, which may explain why a 165°F fusible link, commonly used for fire dampers, was installed. The use of incorrect links on the containment cooler trap door is a violation of 10 CFR 50, Appendix B, Criterion VIII, Identification and Control of Materials, Parts, and Components in that measures did not exist to prevent the use of incorrect parts.

This is a violation (364/85-05-04).

The containment building coolers may have been inoperable with the incorrect links installed. Technical specification 3.6.2.3 requires that two independent groups of containment coolers shall be operable with one fan in each group. Coolers 2A and 2D (one from each group) had the proper links. However, several questions concerning operability still need to be resolved by the licensee:

- a. Since November 1982 were 2A or 2D coolers ever inoperable for greater than the time allowed by Technical Specification, and had they been the only coolers available?
- b. Would the trap door open at 135°F with only one incorrect link?
- c. What is the safety significance of the trap doors not opening till 165°F?

The above questions constitute an Unresolved Item pending licensee response: Questions Concerning Operability of Containment Coolers (364/85-05-02).

Questions also arose concerning the procurement classification of the 135°F fusible links. Section 2, 3, 4 of the current Farley Q-List states that the containment cooler fusible links are Q parts (safety-related). However, 135°F fusible links replaced under MWR 51304 on February 21, 1982, were classified as non-safety related on purchase order FNP1-3142. The UL rated fusible links now installed are off-the-shelf items that cannot be purchased otherwise. Procedure FNP-0-AP-9, Procurement and Procurement Document Control, does not reorganize off-the-shelf safety-related items. The licensee has tested a 135°F fusible link and verified that it separates at 135°F.

This item is unresolved pending further evaluation by the licensee and the inspector concerning QA Requirements for Fusible Links (364/85-05-03).

10. Licensee Event Report

The following Licensee Event Reports (LERs) were reviewed for potential generic problems to determine trends, to determine whether information included in the report meets the NRC reporting requirements and to consider whether the corrective action discussed in the report appears appropriate. Licensee action, with respect to selected reports were reviewed to verify

that the event had been reviewed and evaluated by the licensee as required by the Technical Specification; that corrective action was taken by the licensee; and that safety limits, limiting safety settings and LCOs were not exceeded. The inspector examined selected incident reports, logs and records and interviewed selected personnel. The following reports are considered closed:

Unit I

- LER-84-20 - Inoperable fire barrier penetrations.
- LER-84-21 - Hourly fire watch.
- LER-84-22 - Hourly fire watch.

Unit II

- LER-84-10 - Action statements not met for operable steam flow channel.
- LER-84-12 - Reactor trip.
- LER-84-13 - Hourly fire watch.
- LER-84-14 - Inoperable containment isolation valve.
- LER-84-15 - Continuous fire watch.
- LER-84-16 - Reactor trip.