



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

Report No.: 50-348/78-20

Docket No.: 50-348

License No.: NPF-2

Licensee: Alabama Power Company  
P. O. Box 2631  
Birmingham, Alabama 35291

Facility Name: Farley Unit 1

Inspection at: Farley site, Ashford, Alabama

Inspection conducted: July 31 to August 4, 1978

Inspector: A. K. Hardin

Accompanying Personnel: None

Reviewed by: R. C. Lewis 9/12/78  
R. C. Lewis, Chief Date  
Reactor Projects Section No. 2  
Reactor Operations and Nuclear Support Branch

Inspection Summary

Inspection on July 31 to August 4, 1978 (Report No. 50-348/78-20)

Areas Inspected: Routine unannounced inspection of licensee event reports, previous item of noncompliance, environmental qualification of electrical equipment, IE Bulletins and Circulars, and inspector identified items. The inspection involved 36 hours on site by one NRC inspector.

Results: Of the five areas inspected no items of noncompliance or deviations were identified.

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DETAILS I

Prepared by:

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A. K. Hardin, Reactor Inspector  
Reactor Projects Section No. 2  
Reactor Operations and Nuclear  
Support Branch

9/11/78  
Date

Dates of Inspection: July 31 to August 4, 1978

Reviewed by:

R. C. Lewis  
R. C. Lewis, Chief  
Reactor Projects Section No. 2  
Reactor Operations and Nuclear  
Support Branch

9/12/78  
Date

1. Persons Contacted

- \*O. D. Kingsley, Plant Manager
- \*W. G. Hairston, Assistant Plant Manager
- \*D. C. Poole, Technical Superintendent
- \*J. D. Woodard, Operations Superintendent
- \*W. B. Shipman, Startup Superintendent
- J. E. Garlington, Operations Supervisor
- D. N. Morey, Maintenance Supervisor
- T. C. Grozan, Technical Staff
- H. McClellan, Technical Staff
- L. W. Enfinger, Document Control Supervisor
- \*D. L. Cox, Operations Quality Assurance
- L. E. Ward, Startup Supervisor
- D. E. Mansfield, Startup Supervisor
- L. D. Bradshaw, Generating Plant Services

2. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance 348/78-12-01: In IE Report 50-348/78-12 the licensee was cited for failure to follow an administrative procedure which required initialing a computer log every four hours. The licensee responded that they had revised Surveillance Test Procedure (STP) 1.0, to require a sign-off that the computer periodic logs had been reviewed by the Plant Operators at the required intervals. The inspector verified that STP 1.0 had been revised and reviewed a completed copy in the control room to verify the procedure was being followed.

3. Unresolved Items

None were identified during this inspection.

4. Exit Interview

An exit interview was held at the conclusion of the inspection on August 4, 1978, with Mr. O. D. Kingsley and other members of the Alabama Power Company as identified by an asterisk in paragraph 1. The findings of the inspection were presented.

5. IE Bulletin 78-06 "Defective Cutler Hammer, Type M Relays With DC Coils"

The subject bulletin required the licensee to determine if the Cutler Hammer Type M relays with a DC coil are used or planned for use in the Farley Unit 1 nuclear plant. The inspector verified verbally with the licensee and by review of the licensee's file records that the licensee had inspected safety-related cabinets and had found no Cutler Hammer switches of the above type. Southern Company Services (SCS) in a letter dated June 30, 1978, stated no switches as above were used or planned for use in SCS designed systems. Bechtel Power Corporation in a letter dated June 30, 1978, stated that Cutler Hammer Type M relays with DC coils had not been used in Bechtel designed systems. IE Bulletin 78-06 is closed.

6. IE Circular 78-07 "Damaged Components of a Bergen-Patterson Series 25000 Hydraulic Test Stand"

The licensee's machine for testing of hydraulic shock and sway arrestors is made by ITT Grinnell. The licensee stated that they have been informed by ITT Grinnell that a comparable problem to that described in the circular would not occur with the ITT tester.

7. Licensee Event Reports (LERs)

Three 30 day LERs were reviewed at the site. These were:

- No. 41 - Hi Boron Concentration in 1A Boric Acid Tank (BAT)
- No. 42 - Low Tavg During Reactor Startup
- No. 43 - Failure to Perform Surveillance Test 12.0 on Time ("Boron Injection Tank BIT, Operability Test")

The data and information reported to the NRC in the above listed reports was reviewed and compared to data recorded in the Shift Foreman's Log, the Reactor Operators Log and to discussions with Shift and Operating Supervisors. Based on the reviews and discussions no noncompliance or deficiencies were identified. Information germane to each of the events is discussed below.

8. LER No. 41 - High Boron Concentration in 1A BAT

The boron concentration in the 1A BAT was exceeded on the high side by 160 plus PPM, slightly more than 2%. The error occurred during transfer of 500 gallon of 10,198 ppm boron solution from the recycle evaporator to the 1A-BAT.

Standard Operating Procedure 2.6 requires calculation of the final concentration of the BAT and the shift foreman's authorization prior to batching a tank with a solution not within the Technical Specification limit for the tank receiving the solution. The licensee states both of these requirements were met. The licensee concluded after relatively extensive search for the cause of the occurrence that an error in the calculation for final boron concentration occurred. This could not be verified since the calculations were not retained. The corrective actions taken were considered by the inspector to be commensurate with the significance of the event. The LER is closed.

9. LER No. 42 - Low Tav<sub>g</sub> During Reactor Startup

Tav<sub>g</sub> decreased to 532°F, 9°F below the Technical Specification (TS) limit of 541°F for about 12 minutes. Following a reactor trip and at about 15 percent reactor power, a high delta flux was observed caused by an xenon oscillation/transient. The operator compensated for the condition by manually driving the rods in. An over compensation occurred resulting in a Tav<sub>g</sub> below TS limits. The inspector discussed the event in detail with the Reactor Engineer and the Operations Supervisor and reviewed the incident report prepared by the Shift Supervisor. During these discussion and reviews, no areas of noncompliance were identified.

10. LER No. 43 - "Failure to Perform BIT Operability Test"

Because of an error in scheduling, one of the 7 day operability tests of the BIT was not done. The required 7 day test had been incorrectly scheduled as a 31 day test and about 13 days had elapsed before the

error was discovered. The occurrence was discussed with the personnel involved and the surveillance schedule was reviewed for evidence of any other errors.

11. Diesel Air Start Test

Licensee Event Report No. 78-23 discussed failure of Diesel Generator 1B to reach rated speed because of a malfunction in one of the air start systems. The two air start systems function together so that a potential exists that a failure or discrepancy in one system could be masked by operation of the remaining system. In IE Report 78-11 an open item (78-11-01) was designated when the licensee committed to reviewing whether the air systems should be tested separately. During preoperational tests of the diesel air start systems, each system was tested separately and demonstrated to start the engine. Using the preop tests as a base point, the licensee believes that a test of an individual system following maintenance on the system would serve to demonstrate that no problem existed with the given system. That is, any time maintenance is done on an air system which could affect the ability of that system to start the engine as required by Technical Specifications, the system would be tested separate from the other air start system. The inspector agreed this approach would eliminate the concern. Item 78-11-01 identified by the inspector as an open item in report 78-11 is closed.

12. Environmental Qualification of Safety-Related Electrical Equipment

IE Circular 78-08 issued May 31, 1978, brought to the attention of the licensee certain potential deficiencies in the environmental qualification of connectors, penetrations, terminal blocks, limit switches, cable splices and other such components. The licensee was urged to examine installed safety-related electrical equipment, and ensure appropriate documentation of its qualification to function under postulated accident conditions.

There have been five IE Bulletins issued to Farley Unit 1 which required licensee review, response, and corrective action if indicated. Each of the five dealt with one of the above named components. Only one of the bulletins required corrective action, i.e. Bulletin 78-04 relating to stud mounted limit switches. In regard to IE Circular No. 78-08, the licensee has requested Southern Company Services (SCS) for their recommendation on responding to the bulletin. On July 25, 1978, SCS responded recommending a program for review of factors which demonstrate environmental qualification of equipment used in safety-related systems.

At the exit interview, the inspector discussed the recommendations made by SCS and asked for the licensee position on the recommendation. The licensee stated they had not made a determination as of August 4, 1978, on what their action, relative to Circular 78-08, will be. IE Circular 78-08 remains open.

13. Plant Lightning Protection

There have been four cases since issue of the operating license in which the plant has been adversely affected during an electrical storm. In the first and second of the cases there was a total and a partial loss of off-site power. In the remaining two the circulating water pump was tripped off the line in one case and damaged in the second case.

The licensee has apparently resolved the problem in the case of loss of offsite power. See IE Report 50-348/78-19. In the two events of the loss of the circulating water pump, a study has been initiated to determine the cause. The item identified as open item 78-19-01 in inspection report 78-19 will remain open pending results of the study.