



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

Report No.: 50-348/84-11 and 50-364/84-11

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

Docket No.: 50-348 and 50-364

License No.: NPF-2 and NPF-8

Facility Name: Farley Units 1 and 2

Inspection at Farley site near Dothan, Alabama

Inspector: B. R. Crowley 5/4/84  
B. R. Crowley Date Signed

Approved by: J. J. Blake 5/9/84  
J. J. Blake, Section Chief Date Signed  
Engineering Branch  
Division of Reactor Safety

SUMMARY

Inspection on April 16-18, 1984

Areas Inspected

This routine, unannounced inspection involved 28 inspector-hours on site in the areas of feedwater reducer replacement (Unit 1), inspector followup items (Unit 1), and IE Bulletins (Units 1 and 2).

Results

Of the three areas inspected, no violations or deviations were identified in two areas; one apparent violation was found in one area (Violation - Failure to Accomplish Special Processes in Accordance with Applicable Criteria - paragraphs 5.a.(4), 5.b. and 6.b.).

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## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*W. G. Hairston, III, Plant Manager
- \*J. D. Woodard, Assistant Plant Manager
- \*R. G. Berryhill, Performance and Planning Superintendent
- \*J. W. Garlington, Performance Supervisor
- \*L. M. Stinson, Plant Modification Supervisor
- \*W. G. Ware, Safety Audit and Engineering Review Supervisor
- H. Garland, Maintenance Supervisor
- G. S. Waymire, Generation Plant Engineer
- S. J. Ellis, Preparation Planning and Tracking Lead Engineer

Other licensee employees contacted included contractor craftsmen, health physics technicians, engineering personnel, security force members, and office personnel.

#### Other Organization

- \*J. M. Davis, Level III Examiner, Southern Company Services (SCS)
- R. T. Davis, Level III Examiner, SCS
- A. G. Maze, Level III Examiner, SCS

#### NRC Resident Inspectors

- \*W. H. Bradford, Senior Resident Engineer
- W. H. Ruland, Resident Engineer

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on April 18, 1984, with those persons indicated in paragraph 1 above. The licensee was informed of the inspection findings listed below. At the close of the inspection, the violation listed below was identified as an unresolved item due to contractor procedures not being available at the site to document all requirements. The licensee pointed out that the records referred to in the unresolved item had not been fully reviewed and accepted and that the feedwater lines covered by the records had not been declared operable at the time of the finding.

After the close of the inspection, contractor procedures were obtained to document applicable requirements and the unresolved item was changed to a violation. This change was discussed by telephone with the licensee (W. G. Hairston, III) on April 23, 1984.

(Open) Violation 348/84-11-01: "Failure to Accomplish Special Processes in Accordance with Applicable Criteria" - paragraphs 5.a.(4), 5.b. and 6.b.

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Nuclear Welding (Feedwater Reducers) (Unit 1) (55050)

The inspector examined the licensee program for ASME Code Welding relative to feedwater reducer replacement as indicated below to determine whether applicable code and regulatory requirements were being met (See RII Report 50-348/84-07 for a previous inspection in this area). The applicable ASME Boiler and Pressure Vessel Codes are:

Installation - Section III, 1980 Edition, S82 Addenda

Qualifications (Proc. & Welder) - Section IX, 1983 Edition S83 Addenda

NDE - Section V, 1977 Edition, S78 Addenda

- a. Preheat and Post Weld Heat Treatment (PWHT) - At the time of the inspection, all welds had been completed and PWHT completed. Therefore, the examination consisted of a procedure and records review as follows:

- (1) The following procedures were reviewed to verify:

- That approved procedures were available for control of preheating and PWHT
- That procedures were available for intermediate PWHT

NNI Instruction 1949-K-T001, Revision A, "Post Weld Heat Treatment"

NNI Instruction 1949-K-W001, Revision A, "Welding for Alabama Power Company, Joseph M. Farley Nuclear Plant"

- (2) PWHT charts and associated records for welds A1, A2, A3, B1, B2, and B3 were reviewed to verify:

- That components were instrumented to provide time-temperature recordings for the duration of the entire heat treatment cycle

- That sufficient thermocouples were used to measure the anticipated hottest and coldest temperatures of the weld during the heat treatment cycle
  - That the PWHT temperature and holding times were specified, adhered to, and consistent with code requirements
  - That heatup and cool-down rates were specified and adhered to
  - That cumulative total qualified stress-relief times at temperature were not exceeded
- (3) Preheat charts, including intermediate PWHT charts, and associated records for welds A1, A2, and A3 were reviewed to verify:
- That preheat control procedures were followed
  - That the preheat used in production was within the limits specified by the welding procedure
  - That temperature control was exercised on in-process components which were required to be maintained at pre-heat for extended time periods

During review of these charts, the inspector noted that correlation of thermocouple T/C numbers printed on the charts with the thermocouple numbers on the welds were not clear. The licensee telephoned Cooper Heat, Inc. (Heat Treatment Contractor) and verified the proper correlation. The information was annotated on the charts for future reference.

- (4) During review of the procedures of paragraph (1) above, the inspector noted that paragraph 3.3 of Enclosure 2 to procedure NNI 1949k-TO01 required liquid penetrant (PT) inspection of base material areas where T/Cs had been removed. When the PT reports covering these inspections were requested, the licensee stated that the PI of the final weld surfaces included PT of the T/C removal areas. Review of the PT procedure (NES 80A6456, R3) revealed that only 1/2" on each side of the weld was required to be inspected. The T/Cs could have been 1" away from the welds. The PT reports for the final welds did not specify any coverage other than that required by the procedure. Paragraph 11.1 of NES procedure 80A6456, R3 required identification of the items and areas inspected. This failure to document PT inspection of the T/C removal areas is an example of a violation of 10 CFR 50 Appendix B, Criterion IX, "Control of Special Process", and is identified as item number 348/84-11-01: "Failure to Accomplish Special Process in Accordance with Applicable Criteria." (See paragraphs 5.b. and 6.b. for other examples of this violation.) When the licensee was notified of this problem, the PT reports were amended to show coverage of the T/C removal areas.

b. "Weld History Records" for welds A1, B1, and B2 were reviewed to verify compliance with applicable procedures. During review of these records, the inspector noted that for repair of welds A1 and B2, a 1/8" welding wire had been entered on the weld history record for the filler material. The inspector noted that the automatic WPS (1.3.5-001), entered on record did not specify a 1/8" welding wire. Upon questioning, the licensee stated that for the repair a manual WPS had been used, but not shown on the weld history record. In accordance with paragraph 10.3000 of NNI QA Manual QAM-200 and paragraph 7 of NNI Procedure SI-QA-6, the WPS used is to be recorded on the weld history record. This failure to record the WPS number used on the weld History Record is another example of the violation of 10 CFR 50 Appendix B, Criterion IX, "Control of Special Processes", noted in paragraph 5a.(4). Upon learning of this problem, the licensee had the Weld History Records revised to show the WPS used for repair welding.

c. Examination of Welds

Selected welds listed below were examined to verify by visual inspection that the following characteristics conformed to code and applicable procedures:

- Weld surface finish and appearance
- Transition between components of different diameters and thicknesses
- Weld reinforcement
- Removal of temporary attachments, arc strikes and weld spatter
- Finish grinding - Wall thinning
- Absence of surface defects

Welds Examined -   A1  
                           A2  
                           A3  
                           B2  
                           B3  
                           FW3  
                           FW4

Within the areas inspected, no violations, except as noted in paragraphs a.(4) and b, or deviations were identified.

6. Liquid Penetrant Examination (Feedwater Reducers) (Unit 1) (57060)

The inspector examined the liquid penetrant (PT) examination activities described below relative to the feedwater reducers to determine whether applicable code and regulatory requirement were being met. See paragraph 5

above for the applicable code.

- a. PT reports PT-23 (Welds A1, A2 & A3 prior to PWHT), PT-24 (Welds B1, B2 & B3 Final), PT-26 (Welds A1, A2 & A3 Final) were reviewed.
- b. Personnel certification records for the PT examiners who performed the above inspections were reviewed. During review of these records, the inspector noted that one of the examiners qualification had expired on February 16, 1984. The inspections were performed in April 1984. Paragraph 10 of NES procedure 80A9068, revision 1, the NDE contractors' written practices for qualification of NDE personnel, requires recertification at least every 3 years. The examiner in question was last certified for PT inspection on February 16, 1981. This failure of the PT examiner to have a current certification is another example of the violation of 10 CFR 50 Appendix B, Criterion IX, "Control of Special Processes" noted in paragraph 5.a.(4) above. The examiner in question did not perform any final PT inspection, but did perform intermediate inspections.
- c. Penetrant material certification records for the materials used for the inspections of paragraph a. above were reviewed.

Within the areas inspected, no violations, except as noted in paragraph 6b, or deviations were identified.

#### 7. Radiographic Examination (Feedwater Reducers) (Unit 1) (51090)

The inspector examined the radiographic (RT) examination activities described below relative to the feedwater reducers to determine whether applicable code and regulatory requirements were being met. See paragraph 5 for the applicable code.

- a. RT film for the welds listed below were reviewed to verify that applicable procedures and code requirements were met in the areas of:
  - Penetrameter type, size, and placement
  - Penetrameter sensitivity
  - Film density including density variation
  - Film identification
  - Film quality
  - Weld coverage
  - Weld quality

Welds Reviewed -   A1  
                           A2  
                           A3  
                           B1  
                           B2  
                           B3  
                           C1  
                           FW3  
                           FW4

Review of these film revealed generally irregular weld surface conditions on the inside surface of welds A1, A2, B1 and B2. The inside surface on welds A1 and B2 were especially rough due to repeated repairs. Although the welds meet minimum code requirements, the inspector pointed out to the licensee that due to past history of problems with cracking at the welds in question, the condition of the weld inside surfaces should be considered in determining the final fix for the thermal fatigue cracking problem. The licensee previously indicated in LER 84-005 that long term solutions to the problem were under evaluation.

- b. Certification records for the level III examiner who accepted the above RT film were reviewed.

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

8. IE Bulletins (Units 1 and 2) (92703)

- a. (Closed) 348, 364/82-BU-01, Alteration of Radiographs of Welds in Piping Subassemblies. Alabama Power Company submitted a response on November 9, 1982. The response indicated that 47 Unit 2 piping assemblies and no Unit 1 piping assemblies were received from ITT Grinnell in the time frame where altered RT film were a problem. All film for these 47 assemblies were reviewed for alterations. Three welds on two assemblies were found to have film that were possibly altered. These film were accepted based on an acceptable 2T hole. The inspector reviewed a random sample of ITT Grinnell film consisting of the following:

Spool	Q2-E21-WCB-043-7	Weld B
	JG-19-B-346	Weld Bun
		Weld C
		Weld D
		Weld J
Spool	Q2-E11-ECB-013-019	Weld A
	JG-12-A-42	Weld B
		Weld D
		We'd J

No altered radiographs were identified.

Based on a review of the licensee's response and the above the film review, the Bulletin is closed.

- b. (Open) 348, 364/82-BU-02, Degradation of Threaded Fasteners in the Reactor Coolant Pressure Boundary of PWR Plants. Alabama Power Company submitted letters of response dated August 2, 1982, January 17, 1983 and May 31, 1983. The inspector reviewed the following procedures to verify that procedures covering threaded fastener practices have been issued and implemented in accordance with the bulletin:

Maintenance Procedure FNP-0-MP-2.0, Revision 1, "Reactor Coolant Pump - Disassembly, Inspection and Reassembly"

Maintenance Procedure FNP-0-MP-2.1, Revision 4, "Reactor Coolant Pump - Seal Examination and Replacement"

Maintenance Procedure FNP-0-MP-4.1, Revision 4, "Steam Generator Primary Manway Removal and Installation"

Maintenance Procedure FNP-0-MP-3.2, Revision 2, "Pressurizer Manway Removal and Installation"

Maintenance Procedure FNP-1-MP-3.5, Revision 2, "Repair of Pressurizer Safety Valve Q1B31V031A, B, C"

Maintenance Procedure FNP-2-MP-3.5, Revision 2, "Repair of Pressurizer Safety Valve Q1B31V031A, B, C"

In addition, "Training Attendance" sheets dated May 12, 1983, and May 20, 1983, which documented a one time training session on IEB 80-02, were reviewed.

The bulletin remains open pending review of the licensee formal training program to insure that the program includes training in accordance with the bulletin.

#### 9. Inspector Followup Items (Unit 1) (92701)

- a. (Closed) Inspector Followup Item 348/84-07-01, Corrections to NNI Welding Procedures. The corrections identified by the item have been made.
- b. (Closed) Inspector Followup Item 348/84-07-02, Revision to NES RT Procedures. Field change No. 6457-7C-4 has been made to NES procedure 80A6457, Revision 2, adding Reader/Technique Sheets.
- c. (Closed) Inspector Followup Item 348/84-07-03, Resolution of Indications in KV Shell to Nozzle Weld 21. A total of six indications were found. Using rough UT measurements, 5 of the indications are well within section XI acceptance limits. The other indication is marginally rejectable using rough UT data. However, if any beam spread

correction at all is applied - and some correction is certainly in order - the indication is well within acceptance limits. The licensee and their contractor feel that the indications are small normal weld fabrication defects that were not recorded during PSI due to a higher recording level being used under the 1971 code.