UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report Nos.: 50-348/90-07 and 50-364/90-07

Licensee: Alabama Power Company
600 North 18th Street
Birmingham, AL 36291

Docket Nos.: 50-348 and 50-364 License Nos.: NPF-2 and NPF-8

Facility name: Farley 1 and 2

Inspection Conducted: February 11 through March 10, 1990

Inspection at Farley site near Dothan, Alabama

Inspectors: _____ 3/26/90
G. F. Maxwell, Senior Resident Inspector Date Signed

_____ 3/26/90
W. H. Miller, Jr., Resident Inspector Date Signed

Approved by: _____ 3/26/90
F. S. Cantrell, Section Chief Date Signed
Reactor Projects Branch 1
Division of Reactor Projects

SUMMARY

Scope:

This routine onsite inspection involved a review of operational safety verification, monthly surveillance observation, monthly maintenance observation, engineered safety features system walkdown and evaluation of licensee's self assessment capability. Certain tours were conducted on deep backshift or weekends. These tours were conducted February 11, March 1, 3, and 4 (deep backshift inspections occur between 10 p.m. and 5 a.m.).

Results:

Both units operated at approximately 100 percent reactor power throughout the reporting period, with the exception of a power reduction for testing and steam generator chemical cleaning. See paragraph 2.b.(3) for details and results.

Operations' critical drawing control was reviewed and the program was found to be very effective, see paragraph 2.b.(2).

Within the areas inspected, the following non-cited violation was identified: Failure to test feedwater system bypass valves in accordance with TS 3.3.2, see paragraph 2.b.(1).

REPORT DETAILS

1. Licensee Employees Contacted

R. G. Berryhill, Systems Performance and Planning Manager
C. L. Buck, Plant Modification Manager
L. W. Enfinger, Administrative Manager
R. D. Hill, Assistant General Manager - Plant Operations
D. N. Morey, General Manager - Farley Nuclear Plant
C. D. Nesbitt, Technical Manager
J. K. Osterholtz, Operations Manager
L. M. Stinson, Assistant General Manager - Plant Support
J. J. Thomas, Maintenance Manager
L. S. Williams, Training Manager

Other licensee employees contacted included, technicians, operations personnel, maintenance and I&C personnel, security force members, and office personnel.

Acronyms and abbreviations used throughout this report are listed in the last paragraph.

Other Inspections:

- February 12 - 16, Report 50-348,364/90-05. Followup inspection on previous enforcement items.
- February 20 - 23, Report 50-348,364/90-06. Routine security inspection.
- February 20 - 22, NRR Project Manager for Farley plant visited the site.
- February 28 - March 1, F. S. Cantrell, Section Chief, NRC RII visited the site to review the resident inspection program.
- March 1, J. L. Milhoan, Deputy Administrator, NRC RII visited the site for plant familiarization.
- February 26 - March 2, Report 50-348,364/90-08. Followup inspection on previous identified items involving reactor core surveillance and thermal power procedures.
- March 5 - 16, Report 50-348,364/90-02. Review of emergency operating procedures.

2. Operational Safety Verification (71707)

a. Plant Tours

The inspectors conducted routine plant tours during this inspection period to verify that the licensee's requirements and commitments were being implemented. Inspections were conducted at various times including week-days, nights, weekends and holidays. These tours were performed to verify that: systems, valves, and breakers required for safe plant operations were in their correct position; fire protection equipment, spare equipment and materials were being maintained and stored properly; plant operators were aware of the current plant status; plant operations personnel were documenting the status of out-of-service equipment; there were no undocumented cases of unusual fluid leaks, piping vibration, abnormal hanger or seismic restraint movements; all reviewed equipment requiring calibration was current; and in general, housekeeping was satisfactory.

Tours of the plant included review of site documentation and interviews with plant personnel. The inspectors reviewed the control room operators' logs, tag out logs, chemistry and health physics logs, and control boards and panels. During these tours the inspectors noted that the operators appeared to be alert, aware of changing plant conditions and manipulated plant controls properly. The inspectors evaluated operations shift turnovers and attended shift briefings. They observed that the briefings and turnover provided sufficient detail for the next shift crew and verified that the staffing met the TS requirements.

Site security was evaluated by observing personnel in the protected and vital areas to ensure that these persons had the proper authorization to be in the respective areas. The inspectors also verified that vital area portals were kept locked and alarmed. The security personnel appeared to be alert and attentive to their duties, and those officers performing personnel and vehicular searches were thorough and systematic. Responses to security alarm conditions appeared to be prompt and adequate.

Selected activities of the licensee's radiological protection program were reviewed by the inspectors to verify conformance with plant procedures and NRC regulatory requirements. The areas reviewed included: operation and management of the plant's health physics staff, ALARA implementation, radiation work permits for compliance to plant procedures, personnel exposure records, observation of work and personnel in radiation areas to verify compliance to radiation protection procedures, and control of radioactive materials.

b. Plant Events and Observations

(1) Feedwater Bypass Isolation Valves

While evaluating their response to NRC Generic Letter 89-019, Request for Action Related to Resolution of Unresolved Safety

Issue A-47 "Safety Implication of Control Systems in LWR Nuclear Power Plants" Pursuant to 10 CFR 50.54(f), the licensee identified that the feedwater bypass regulating isolation valves were not being tested as required by TS 3.3.2. The evaluation identified that a functional test of the high-high steam generator level function of auxiliary relay K649 which causes closure of the bypass feedwater regulating valves (FCV 479, 489, and 499 for both units) was not being performed as required by TS Table 3.4-2. When the unit is at full power, the feedwater bypass regulating valves are normally closed. The licensee determined that since the valves were closed, the plant was within the required action statement of TS 3.3.2. The manual isolation valves to the bypass valves were closed and the valves were satisfactorily tested on February 22. The isolation valves will remain closed pending further review by the licensee.

It appeared that the bypass valves' electrical actuation circuitry was not subjected to a channel functional test as required by TS Table 4.3-2 since original installation testing. These valves are normally closed, however, they are open during low power operation such as startup activities. The failure to include these valves in the surveillance testing program as required by the TS is a violation. This licensee identified violation is not being issued as the criteria specified in section V.G.1 of the NRC Enforcement Policy were satisfied. Therefore, this item is identified as a non-cited violation, NCV 348,364/90-07-01, Failure to Test Feedwater Bypass Valves in accordance with TS 3.3.2.

(2) Drawing System Verification

The inspectors conducted a critical drawing system verification. The drawings which were checked are located in the control room, TSC, diesel generator building, and in the system operators office areas in the auxiliary building. The inspectors verified that the drawings which were affected by an outstanding design change or plant modification were properly identified. The drawing document control system was found effective in ensuring that identified drawing discrepancies were promptly corrected. This program includes quarterly critical drawing audits. The inspectors evaluated approximately ten percent of the critical drawings. The drawings selected for evaluation were those utilized by operations. The drawings (total of 67) were found to be the current revision and marked to indicate any changes not yet incorporated.

(3) Chemical Cleaning of the Steam Generators

On February 16, Unit 1 reduced power to 15% for steam generator chemical cleaning and contaminate removal. Unit 2 experienced

the same evolution on February 9. Power level was maintained at 15% for approximately 40 hours. Next, the steam generators were flushed and boron added to the secondary system until a 50 ppm boron solution existed in each steam generator. Steam generator flushing is performed to reduce corrosion and tube fouling problems. Except for the amount of calcium removed, the cleaning results met the licensee's flushing criteria. Additional calcium removal will be accomplished during the next unit outage or shutdown. The total contaminates removed from the steam generators are listed below.

	Contaminates (In Grams)				
	Sodium	Calcium	Chloride	Fluoride	Sulfate
Unit 1 (Feb. 16-19)	17.4	22.0	12.5	4.6	10.0
Unit 2 (Feb. 9-12)	13.0	149.6	18.9	9.2	12.3

(4) Contaminated New Excore Detector

On February 23, the licensee notified the inspectors that a contaminated excore detector had been found in a site warehouse during a normal radiological survey conducted on February 22. The contaminated detector was an intermediate range detector which was ordered as a re-stock item by purchase order QP4432. The radiological survey found low level contamination (approximately 2 MR/hr and 54000 dpm) on the detector. Neither the shipping container nor the shipping orders indicated that the detector was contaminated. The licensee promptly moved this detector into the low level radwaste storage building and advised the vendor of the survey results. The vendor has initiated an investigation on this event.

The inspectors advised NRC Region II and this matter will be reviewed further by Region II Facilities Radiation Protection Section during a future NRC inspection at Farley.

(5) Local Law Enforcement Agencies Liaison Meeting

On March 1, the inspectors attended the local law enforcement agencies liaison meeting held on-site at the training center. This meeting was required by the plant security plan. Representatives from the Dothan Police Department, Alabama State Troopers and U. S. Army - Fort Rucker met with licensee site and corporate personnel. The licensee discussed the Farley security

program, response procedures for the local law enforcement agencies, site emergency plan, and radiation protection program. The visiting personnel were also taken on a tour of the plant. The meeting and tour provided the visiting law enforcement personnel an opportunity for a better understanding of the Farley security and emergency response program requirement, and should prove beneficial in the event of a major security emergency.

(6) Emergency Operating Procedures (EOP) Inspection (TI2515/92)

The inspectors participated and assisted in the EOP team inspection of Farley conducted between March 5-16. The EOP inspection reviewed and evaluated the plants emergency and abnormal operating procedures to determine if the procedures were technically correct and whether or not they could be effectively implemented when needed. For details on the results of the EOP inspection findings refer to NRC report 50-348,364/90-02.

3. Monthly Surveillance Observation (61726)

The inspectors observed the licensee conducting maintenance surveillance test activities on safety-related systems and components to verify that the licensee performed the activities in accordance with TS and licensee requirements. These observations included selected portions of each surveillance, review of the surveillance procedures to ensure that administrative controls and tagging procedures were in force, determining that approval was obtained prior to conducting the surveillance test, and the individuals conducting the test were qualified. Other observations included verifying that: test instrumentation used was calibrated; data collected was within the specified requirements of TS; any identified discrepancies were properly noted; and the systems were correctly returned to service. The following activities were observed:

0-STP-80.1	Diesel Generator 1-2A Operability Test
2-STP-22.1	Auxiliary Feedwater Pump 2A Quarterly Inservice Test
0-STP-80.2	Diesel Generator 1C Operability Test. Also, Mechanical Procedure, MP-13.10 Model 38 TD8 - 1/8 Diesel Engine Run-in Procedure.
1-STP-22.18	Auxiliary Feedwater Valve Position Verification
1-STP-22.19	Auxiliary Feedwater Normal Flow Path Verification
2-STP-33.0A	Solid State Protection System Train A Operability Test
1-STP-37.0	Power Distribution Surveillance (Plant Computer Inoperable)
1-STP-3.1	Borated Water Source Operability Test

No violations or deviations were identified. The results of the inspections in this area indicate that the program was effective with respect to meeting the safety objectives.

4. Monthly Maintenance Observation (62703)

The inspectors reviewed maintenance activities to verify that maintenance personnel were obtaining the appropriate tag out and clearance approvals prior to commencing work activities; correct documentation was available for all requested parts and material prior to use; procedures were available for all requested parts and material prior to use; procedures were available and adequate for the work being conducted; maintenance personnel performing work activities were qualified to accomplish these tasks; activities reviewed were not violating any limiting conditions for operation during the specific evolution; post-maintenance testing activities were completed; and that equipment was properly returned to service after the completion of work activities. Activities reviewed included:

WA-W00322340	Perform shutdown inspection of diesel generator 1C per maintenance procedures MP-13.1, 12.2 and 13.9.
WA-W00323275	Perform 5 year inspection of diesel generator 1C per maintenance procedures MP-13.8.
WA-W00324714	Perform vibration check of motor driven auxiliary feedwater pump 2A in accordance with procedure MP-84.0.
WA-W00300901	Performance routine preventive maintenance in accordance with procedure EMP-322.01 on breaker FE-02 (Required hot bus transfer by operations using procedure 2-SOP-36.3).
WA-W00324632	Lubricate auxiliary feedwater pump 1B.
WA-W00324438	Lubricate motor for auxiliary feedwater pump 1B.
WA-W003225184	Perform vibration measurement for Unit 2 motor driven AFW pump 2A in accordance with procedure MP-84.
MWR-182848	Inspect and clean service water side of charging pump 1C room cooler.
MWR 202193	Replace 1C diesel generator fuel storage tank level transmitter NSY52LI506.
MWR 209800	Replace transformer for inverter 1B (Q1R21E001B).
MWR-216163	Clean relays for component cooling water surge tank level transmitter Q1P17LT3027C.

No violations or deviations were identified. The results of the inspections in this area indicate that the program was effective with respect to meeting the safety objectives.

5. Engineered Safety Features System Walkdown-Emergency Diesel Generator 2C (71710)

The inspectors conducted a complete walkdown of the accessible portions of the mechanical and electrical systems for emergency diesel generator 2C. Mechanical sections inspected included, the lube oil system, the air start system, the diesel cooling system, and the fuel oil system. The position of electrical breakers were inspected for the diesel support components and 4160VAC output breakers. Procedure O-SOP-38.OD, Diesel Generator 2C System Check List, and drawings D-170801, D-170803, D-170807 and D-170809 were used for reference documents during the inspection. Alignment verification of valves and electrical breakers was conducted. Hangers and structures were also inspected. System gages and instrumentation were inspected and the calibration for these devices were found to be current. Equipment, valves, and other components had recently installed identification tags. Housekeeping was adequate and a satisfactory level of cleanliness is being maintained. There were no signs of gross valve packing leakage, bent steams, or missing handwheels. Valves in the systems were checked against procedure O-SOP-38.OD and found in the correct positions.

Within the area inspected no violations or deviations were identified.

6. Evaluation of Licensee Self-Assessment Capability - NORB Meeting (40500)

On March 9, the inspectors attended the regularly scheduled quarterly meeting of the Nuclear Operations Review Board (NORB) which was held at the plant site. The NORB provides an independent review and audit of designated plant activities in the areas of plant operations, engineering, nuclear safety, and quality assurance.

At this meeting a TS quorum, consisting of the Vice President-Nuclear, Chairman, six members, and two alternates, were present. Items reviewed included:

- SAER audit activities.
- Safety evaluations for proposed changes to procedures or equipment.
- Meeting minutes of the PORC (Plant Operations Review Committee).
- LERs.
- NRC audit findings.

Prior to the meeting, each member was provided with an agenda of the items to be discussed. Each agenda contained detailed information on every item. The members appeared to be well informed on the agenda items and the meeting was conducted in a professional manner.

The NORB evaluation found no trends indicative of decreasing plant safety. No additional recommendations for improving weak areas were discussed and no additional corrective actions for licensee identified discrepancies were noted.

No violations or deviations were identified.

7. Exit Interview

The inspection scope and findings were summarized during management interviews throughout the report period. On March 15, findings were summarized with the plant manager and selected members of his staff. The licensee reviewed the inspection findings and did not identify any material reviewed by the inspectors during this inspection as proprietary.

ITEM NUMBER/(STATUS)	DESCRIPTION AND REFERENCE
348,364/90-07-01 (Open/Closed)	Non-cited violation. Failure to test feedwater bypass valves in accordance with TS 3.3.2 - paragraph 2.b.

8. Acronyms and Abbreviations

AFW - Auxiliary Feedwater
AOP - Abnormal Operating Procedure
AP - Administrative Procedure
APCO - Alabama Power Company
CFR - Code of Federal Regulations
CVCS - Chemical and Volume Control System
CCW - Component Cooling Water
DC - Design Change
ECP - Emergency Contingency Procedure
EIP - Emergency Plant Implementing Procedure
EQ - Environmental Qualifications
ESF - Engineered Safety Features
EWR - Engineering Work Request
F - Fahrenheit
GPM - Gallons Per Minute
ISI - Inservice Inspection
IST - Inservice Test
LCO - Limiting Condition for Operation
MOV - Motor-Operated Valve
MOVATS - Motor-Operated Valve Actuation Testing
MWR - Maintenance Work Request
NCR - Nonconformance Report
NRC - Nuclear Regulatory Commission
NRR - NRC Office of Nuclear Reactor Regulation
PMD - Plant Modifications Department
QA - Quality Assurance
QC - Quality Control

RCP - Radiation Control and Protection Procedure
RCS - Reactor Coolant System
RHR - Residual Heat Removal
SI - Safety Injection
SAER - Safety Audit and Engineering Review
S/G - Steam Generator
SSPS - Solid State Protection System
SOV - Solenoid Operated Valve
SPDS - Safety Parameter Display System
STP - Surveillance Test Procedure
SW - Service Water
TS - Technical Specification
TSC - Technical Support Center
WA - Work Authorization