



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

Report Nos.: 50-348/89-17 and 50-364/89-17

Licensee: Alabama Power Company
600 North 18th Street
Birmingham, AL 35291-0400

Docket Nos.: 50-348 and 50-364

License Nos.: NPF-2 and NPF-8

Facility Name: Farley

Inspection Conducted: July 24-28, 1989

Inspection at Farley site near Dothan, Alabama

Inspector: *McKenzie Thomas*
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8/24/89
Date Signed

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8/24/89
Date Signed

SUMMARY

Scope:

This routine, unannounced inspection was conducted in the areas of design, design changes, and plant modifications.

Results:

The inspectors reviewed PCNs, MDDs, and held discussions with licensee management personnel concerning the engineering and technical support that is provided to the various plant groups. The majority of the engineering and technical support is provided and coordinated through the licensee's engineering staff located at the corporate offices.

The inspectors assessed the effectiveness of the engineering and technical support by reviewing administrative procedures covering the design control process. These procedures were weak in their description of the interfaces among the various plant groups and the offsite engineering staffs with regard to requests for engineering and/or technical assistance. Mechanisms for plant personnel to request engineering assistance are not always procedurally controlled or documented. For example, requests can be made by telephone

or internal memorandum. The inspectors consider the lack of definitive controls for the plant and engineering organizational interfaces to be a weakness. This weakness in the engineering and technical support area could inhibit licensee management's ability to accurately assess the quality and timeliness of engineering support. The weak interface controls could also prevent adequate assessment of the prioritization utilized to evaluate plant problems identified for engineering assistance.

The safety evaluations performed and the post modification test requirements specified in connection with the PCNs reviewed during this inspection were considered to be adequate. The inspectors raised questions concerning whether the review and approval authority for MDDs meet the intent of the licensee's TS. This issue is discussed in paragraph 2.b. of this report and identified as an inspector followup item.

In the areas inspected, violations or deviations were not identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *R. Berryhill, System Performance Planning Manager
- *C. Buck, Plant Modifications Manager
- *S. Casey, System Performance Supervisor
 - T. Cherry, Instrumentation and Control Supervisor
 - L. Enfinger, Plant Administration Manager
- *S. Fulmer, Safety Audit and Engineering Review Supervisor
 - J. Garlington, General Manager - Nuclear Support
 - R. Hill, Assistant General Manager Plant Operations
 - D. Mansfield, Nuclear Maintenance Support Manager
- *D. Morey, General Manager - Nuclear Plant
- *C. Nesbitt, Technical Manager
- *J. Osterholtz, Operations Manager
- *R. Tyler, Plant Modifications Supervisor
- *R. Winkler, Plant Modifications Supervisor
 - J. Woodard, Vice President - Nuclear

Other licensee employees contacted during this inspection included craftsmen, engineers, operators, security force members, technicians, and administrative personnel.

NRC Resident Inspectors

- *G. Maxwell, Senior Resident Inspector
- *W. Miller, Resident Inspector

*Attended exit interview

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

2. Design, Design Changes, and Modifications (37700)

The inspectors reviewed the PCNs and MDDs listed below to determine the adequacy of the evaluations performed to meet 10 CFR 50.59 requirements; verify that the PCNs and MDDs were reviewed and approved in accordance with TS and administrative controls; ensure the subject modifications were installed (for those physically inspectable) in accordance with the PCN packages; applicable plant operating documents (drawings, plant procedures, FSAR, TS, etc.) were revised to reflect the subject modifications; the modifications were reviewed and incorporated in operations training programs as applicable; and post modification test requirements were specified and adequate testing performed.

a. Project Change Notifications

The quality and technical content of the information contained in the PCNs reviewed was considered good. System and/or component functions and performance requirements were clearly stated. The effects of the design changes were evaluated and documented in the applicable PCN packages. The inspectors reviewed the following PCN packages.

- °PCN B84-1-2866 - Containment Sump Local Leak Rate Test (LLRT). This PCN provided the design to install two valves between the containment sump pumps and containment isolation valve HV-3376. The PCN was initiated to allow the LLRT of the penetration to be performed without entry into the containment sump area.
- °PCN B86-1-3710 - PORV Seat Leakage. This PCN provided the authorization to replace the existing cage spacers installed in the Unit 1 Pressurizer PORV's with new cage spacers. The PCN was initiated to resolve seat leakage problems attributed to uneven concentric loading on the cage spacers caused by the tolerances to which the existing spacers were manufactured. The new spacers are manufactured to stricter tolerances and have a thicker wall, designed to provide for more even loading.
- °PCN B87-1-4051 - Replacement of Anchor/Darling Tilting Disc Check Valves. This PCN provided the design to replace eight Auxiliary Feedwater (AFW) four inch 900 pound tilting disc check valves with four inch 900 pound globe lift check valves. The PCN was initiated to reduce back-leakage into the AFW system.
- °PCN B87-1-4713 - Replacement of Motor Operated Valves (MOVs). This PCN provided the design to replace eight SMB-0-15 Limitorque Motor Actuators on Unit 1 with SB-0-15 limitorque actuators. The PCN was initiated because the installed EQ motors had brake assemblies for which no replacements could be obtained and analysis of test data in response to Bulletin 85-03 revealed that these MOV's exhibited high inertial thrust after torque switch trip while seating.
- °PCN B88-1-4763 - Boron Injection Tank (BIT) Bypass Valve Leakage. This PCN provided the design to remove a section of the BIT bypass line and to install pipe caps. The PCN was initiated to eliminate the potential for leakage during normal charging evolutions past the BIT bypass valve which could cause thermal cycling of safety injection lines.
- °PCN B88-1-5080 - Containment Ambient Temperature Monitor. IEN 87-65, "Plant Operation Beyond Analyzed Condition," was issued by the NRC to alert licensees to potential problems resulting from operating a plant beyond its analyzed basis. The safety concerns of the particular circumstances described in the information notice are high temperature inside containment and insufficient post - LOCA cooling of safety systems. In response to IEN 87-65 the licensee initiated the Unit 1 PCN to install fourteen temporary RTD's inside containment, and to monitor ambient and surface temperatures in the area of various components for one operating cycle. The temperature data is needed to verify the design basis of certain instruments in containment. The inspectors were informed that the temperatures monitored in Unit 1 are representative of both units. This was based on essentially identical containment/equipment layouts and the selection of critical points for temperature monitoring. The data is being collected and sent to a licensee consultant for evaluation.

°PCN B88-2-5279, Turbine Driven Auxiliary Feed Pump Overspeed Trip Setpoint Reduction. This PCN involved changing the mechanical overspeed trip setpoint on the TDAFW pump from 125 percent of rated speed (4950 rpm) to 115 percent of rated speed (4554 rpm). The AFW system discharge piping is rated for operating pressures up to 2200 psig. The licensee determined that if the turbine governor were to fail in such a manner as to allow pump speed to approach the existing overspeed setpoint of 4950 rpm during TDAFW pump operation at minimum flow conditions with the test line isolated and the flow control valves shut, it could be shown that the discharge pressure developed would exceed 2200 psig causing overpressurization of the AFW system discharge piping. Reduction of the mechanical overspeed setpoint per this PCN precludes the possibility for this type of event occurring. This same setpoint reduction was performed on the Unit 1 TDAFW pump per PCN B88-1-5003.

°PCN S88-2-5495, Replacement of Emergency Service Water Piping to Turbine Building Air Compressors. The licensee initiated the above PCN to improve system performance and reduce the possibility of internal fouling. The PCN was developed and implemented to insure that adequate cooling water flow to the air compressors is available when the normal service water supply to the turbine building is isolated. The design scope included (1) replacing 1" HBD-445 and HBC-230 carbon steel service water piping with 2" stainless steel piping, (2) changing 1" globe valve to gate valve and (3) use of chloride free cold prime as part of the exterior coating system for the buried portion of the stainless steel piping.

No violations or deviations were identified.

b. Minor Departures From Design

As of July 25, 1989, there were 87 active MDDs involved with electrical maintenance, mechanical maintenance, instrumentation and control, and operations. Fifty MDDs were temporary modifications and 37 MDDs were permanent modifications. The inspectors reviewed a random sample of MDDs to determine the adequacy of the design change, the engineering support provided in determining and assuring the technical adequacy of the design change, and the effectiveness of design control and documentation of the MDDs. The following MDDs were reviewed:

<u>MDD Number</u>	<u>Title</u>
88-1960	Channel "A" ICCMS ('B' Heater Control Assembly)
88-1976	Steam Generator 1B to Blowdown Heat Exchanger Solenoid Valve
83-549	Increase Service Water Pressure to Unit 1
89-1989	MSIV Air Pressure Low

89-2002	RHR Pump Miniflow Switch Setpoint
89-2021	Changing Contacts on K442 in Input Bay of 'B' Train SSPS
89-2045	Replacement of 3-way ASCO Solenoid Valve
89-2047	Fuel Transfer System
89-2053	Radiation Monitor R35A Annunciator
89-2064	Unit 1 "B" Steam Generator Auxiliary Feedwater Orifice Installed Backwards
89-2055	Turbine Driven Auxiliary Feedwater Pump Turbine Overspeed Trip Mechanism Part Change
89-2068	Rod Control Power Cabinet 2A
89-2071	Excess Letdown Pressure Indicator
89-2082	Solenoid Replacement Backup Air Supply To "A" Train Service Water Wet Pit Level Transmitter

MDDs are defined as changes of very limited scope and are completed and processed per plant procedure number FNP-0-AP-8, Design Modification Control. The MDDs reviewed contained documentation specified in the above procedure and were completed as specified in the procedure. Various licensee personnel were questioned as to what bases were used to determine if changes made under the MDDs were adequate. When the inspectors questioned the individual that reviewed and approved MDD 89-2045, ASCO Solenoid Valve Replacement, the individual was unable to provide the bases on which he granted approval. The inspectors asked if structural support, stress, seismic qualification evaluation, etc. were considered when approval was granted. The individual informed the inspectors that he needed to contact engineering in the corporate office for the information or evaluation. It was noted that this MDD did not require off-site engineering review or approval prior to implementation. It took the individual two days to respond to the inspectors' questions, but when the MDD was approved by the individual (on the same day that it was initiated), he answered the same questions raised by the inspectors. He checked the "no" block on the checklist in the MDD that stated the change would not adversely affect the design parameters in question. The inspectors expressed concern that non-engineering personnel are responsible for verification that a MDD does not involve an unreviewed safety question. The checklist used to document this evaluation provides "yes" and "no" check-off blocks but no explanation of the basis for individual blocks checked. The inspectors expressed a concern about the level of training of personnel who reviewed and approved MDDs for implementation.

It was also noted that neither the review or approval of an MDD is required to be performed by an engineer; and once an MDD is implemented it may be up to sixty days before it is reviewed by the PORC. There is also the possibility that those MDDs that are made permanent may not get reviewed by design engineering until up to five months after implementation.

The inspectors identified several cases where letters from ASCO were used as bases for the design change. However, these letters did not state that the valve replacements were identical in fit and function to the original valve.

During the review of MDDs the inspectors noted that numerous outstanding MDDs required lifting leads and installing jumpers. These lifted leads and jumpers were controlled via the maintenance work request initiated to implement the MDD. The inspectors determined that the lifted leads and jumpers were not required to be identified when they were installed in the field. Discussions with the operations staff identified that a lifted lead and jumper log is not maintained in the control room and that lifted leads and jumpers are tracked by the mechanism that implemented the lifted lead or jumper. The inspectors questioned licensee personnel concerning whether this method of controlling lifted leads and jumpers was consistent with industry practices.

While reviewing MDDs the inspectors noticed that the level of review and approval prior to implementation varied. A number of MDDs were implemented with the review and approval of only a maintenance group supervisor. Other MDDs were implemented with the approval of the PORC and Plant Manager. The inspectors reviewed the licensee's technical specifications to determine what type of administrative controls the licensee has placed on modifications. Section 6.5.3.1.b gives the administrative control requirement for proposed changes or modifications:

"Proposed changes or modifications to plant nuclear safety related structures, systems and components shall be reviewed as designated by the General Manager - Nuclear Plant. Each such modification shall be reviewed by an individual/group other than the individual/group which designed the modification, but who may be from the same organization as the individual/group which designed the modification. Proposed modifications to plant nuclear safety-related structures, systems and components shall be approved prior to implementation by the General Manager - Nuclear Plant."

The inspectors questioned the licensee as to why modifications were being implemented prior to having the level of approval as required by Section 6.5.3.1.b of their technical specifications. The licensee's position is that they are meeting the intent of the TS because MDDs are not considered to be the same kind of changes or modifications addressed in TS section 6.5.3.1.b. The inspectors were further informed that this issue was previously identified as a violation in NRC report 50-348, 364/85-32-01.

The violation was withdrawn and an unresolved item was opened as a result of a Management Meeting between the NRC and the licensee on December 11, 1985. The basis given for withdrawing the violation was that there may be some ambiguity as to the intent of the Technical Specifications, and further review of the item was required by the NRC.

The unresolved item was closed in NRC Inspection Report 50-348,364/87-15. The licensee's position on this item is not documented in that there was no response to the violation. In addition, their position was not documented in the December 11, 1985, meeting summary and the TS has not been changed to clarify the intent. Because the inspectors raised the identical concern as that previously identified in NRC violation 50-348, 364/85-32-01, without prior knowledge of the item, the inspectors consider that an ambiguity still exists with regard to the intent of TS 6.5.3.1.b. Therefore this item will be discussed further within the NRC.

This issue will be tracked as IFI 50-348, 364/89-17-01. Clarify whether review and approval authority for MDDs meet the intent of TS 6.5.3.1.b.

3. Exit Interview

The inspection scope and results were summarized on July 28, 1989, with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results listed below. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

- IFI 50-348, 364/89-17-01, Clarification whether review and approval authority for MDDs meet the intent of TS 6.5.3.1.b. - paragraph 2.b.

4. Acronyms and Initialisms

AFW	-	Auxiliary Feedwater
BIT	-	Boron Injection Tank
CFR	-	Code of Federal Regulations
EQ	-	Environmental Qualification
FNP	-	Farley Nuclear Plant
FSAR	-	Final Safety Analysis Report
IEN	-	NRC Information Notice
IFI	-	Inspector Followup Item
LLRT	-	Local Leak Rate Test
LOCA	-	Loss of Coolant Accident
MDD	-	Minor Departure from Design
MOV	-	Motor Operated Valve
MSIV	-	Main Steam Isolation Valve
PCN	-	Project Change Notification
PCR	-	Project Change Request
PORC	-	Plant Operations Review Committee
PORV	-	Power Operated Relief Valve

PSIG - Pounds per Square Inch Gauge
RHR - Residual Heat Removal
RPM - Revolution per Minute
RTD - Resistance Temperature Detector
SSPS - Solid State Protection System
TDAFW - Turbine Driven Auxiliary Feedwater
TS - Technical Specifications