June 15, 2000

Southern Nuclear Operating Company, Inc.
ATTN.: Mr. D. N. Morey
Vice President
P. O. Box 1295
Birmingham, AL 35201-1295

SUBJECT: NRC INSPECTION REPORT NOs. 50-348/00-07 AND 50-364/00-07

Dear Mr. Morey:

By letter dated May 9, 2000, you were informed that the NRC would conduct a supplemental inspection at your Farley Nuclear Plant. The enclosed inspection report presents the results of that supplemental inspection. The results of this inspection were discussed on June 9, 2000 with Mr. M. Stinson and other members of your staff.

This supplemental inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel. Specifically, the inspectors reviewed the issues and circumstances surrounding reported White Performance Indicators for Units One and Two emergency AC power systems and the resulting root cause evaluation.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

Sincerely,

/RA/

Stephen J. Cahill, Chief
Reactor Projects, Branch 2
Division of Reactor Projects

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

Enclosure: NRC Inspection Report Nos. 50-348/00-07
and 50-364/00-07

cc w/encl: (See Page 2)

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L. M. Stinson
General Manager, Farley Plant
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OFFICE	RII:DRP	RII:DRP:Farley	RII:DRP:Farley				
SIGNATURE	CR	TJ	TJ (for)				
NAME	CRapp:sjw	TJohnson	RCaldwell				
DATE	6/14/2000	6/14/2000	6/14/2000	6/ /2000	6/ /2000	6/ /2000	6/ /2000
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: C:\supplement IR 00-07.wpd

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-348 and 50-364
License Nos.:	NPF-2 and NPF-8
Report Nos.:	50-348/00-07 and 50-364/00-07
Licensee:	Southern Nuclear Operating Company, Inc.
Facility:	Farley Nuclear Plant, Units 1 and 2
Location:	7388 N. State Highway 95 Columbia, AL 36319
Dates:	May 30 to June 7, 2000
Inspectors:	T. P. Johnson, Senior Resident Inspector R. K. Caldwell, Resident Inspector
Approved by:	Stephen J. Cahill, Chief Reactor Projects, Branch 2 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

Farley Nuclear Power Plant Units 1 and 2
NRC Inspection Report Nos. 50-348/00-07 and 50-364/00-07

Cornerstone: Mitigating Systems

This supplemental inspection was performed to assess the licensee's evaluation and corrective actions associated with White Performance Indicators (PIs) for both units' emergency AC power systems. Per the Action Matrix in NRC Manual Chapter 0305, Operating Reactor Assessment Program, a supplemental inspection is required for a White PI. Fault exposure unavailability hours for both the unit common 1-2A and 1C emergency diesel generators (A train) resulted in each unit's PI crossing the Green to White unavailability threshold (2.5%). This PI issue was reported to the NRC on April 21, 2000, during the first quarter 2000 PI submittal. During this supplemental inspection, performed in accordance with NRC Inspection Procedure 95001, the inspectors determined that the licensee performed a comprehensive investigation and evaluation of the issues which caused the PIs on both units to become White. The licensee identified the cause as breaker failures associated with the 600 volt load centers which supply AC power to the diesel auxiliaries. The 1-2A diesel auxiliary power supply breaker failure primary root cause was a broken internal wire due to flexing. The wire had been in contact with the closing spring which most likely occurred during the manufacturing process. The 1C diesel auxiliary power supply breaker failure primary root cause was a failed relay attributed to weak Preventive Maintenance (PM), poor engineering review, reduced stock levels, and a lack of operations knowledge regarding the auto transfer scheme. As corrective actions, the licensee implemented enhanced monitoring of the EDGs and emergency AC power by system engineering, operations, and maintenance. Planned outages for testing or maintenance will receive additional oversight. The licensee has also scheduled a Safety Audit and Engineering Review effectiveness evaluation to assess the adequacy of the root cause and corrective actions.

Due to the licensee's acceptable performance in addressing these issues, White Performance Indicators associated with both units' emergency AC power will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in NRC Manual Chapter 0305. Implementation of the licensee's corrective actions will be reviewed during a future inspection.

Report Details

01 Inspection Scope

This supplemental inspection was performed to assess the licensee's evaluation of White Performance Indicators (PIs) for both unit's emergency AC power systems due to fault exposure hours associated with inoperability of the 1-2A and 1C emergency diesel generators (EDGs). These White PIs were reported to the NRC during the first quarter PI data on April 21, 2000, for the mitigating systems cornerstone in the reactor safety strategic performance area.

02 Evaluation of Inspection Requirements

02.01 Problem Identification

a. Determine that the evaluation identifies who (i.e. licensee, self revealing, or NRC), and under what conditions the issue was identified.

The inoperability of the EDGs was identified during routine surveillance testing. During testing of the 1-2A EDG, breaker ED13-2 (600 volt load center feeder to motor control center 1S) failed to automatically close. During sequencer testing of the 1C EDG, breaker ER05 (1R 600 volt load center feeder which supplies motor control center 1N) failed to automatically open. The licensee documented these failures in Condition Reports 1-2000-415, 1-2000-115, and 2-2000-277.

b. Determine that the evaluation documents how long the issue existed and prior opportunities for identification.

The licensee determined that the 1-2A EDG had 1038.4 fault exposure hours. The 1C EDG had 1228.5 fault exposure hours. The licensee did not identify any prior opportunities for identification. The inspectors confirmed that the licensee's determination was appropriate.

c. Determine that the evaluation documents the plant specific risk consequences (as applicable) and compliance concerns associated with the issue.

Because this condition only affected a PI, the licensee did not assign a specific core damage frequency. Manual operator action from the control room to restore power was a viable mitigation task. The licensee had declared the affected EDG inoperable and complied with the Technical Specification allowed outage time.

02.02 Root Cause and Extent of Condition Evaluation

a. Determine that the problem was evaluated using a systematic method to identify root causes and contributing causes.

The inspectors verified that the licensee followed procedures FNP-0-ACP-9.0, Root Cause Program, and FNP-0-ACP-9.1, Root Cause Investigation, to evaluate this issue. This included barrier, change, and event and causal factor analysis. The procedures required conducting interviews with key personnel, data collection, document review, and the preservation of physical evidence associated with the issue.

b. Determine that the root cause evaluation was conducted to a level of detail commensurate with the significance of the problem.

The licensee's root cause evaluation was thorough and identified the primary root cause as well as related contributing causes and causal factors for the performance issue.

- 1-2A EDG breaker ED13-2: a broken internal wire (to the charging motor cutoff switch) due to flexing over time while in contact with the charging spring, which resulted from less than adequate manufacturing quality control (QC).

- 1C EDG breaker ER05: a relay failure attributed to weak PM, poor engineering review, reduced stock levels, and a lack of operations knowledge regarding the auto transfer scheme.

c. Determine that the root cause evaluation included a consideration of prior occurrences of the problem and knowledge of prior operating experience.

The licensee reviewed NRC Information Notices and operating experience to see if similar problems had previously been reported with the breaker wiring and relays.

d. Determine that the root cause evaluation included consideration of potential common cause and extent of condition of the problem.

The licensee considered the potential for common cause and conducted a broadness review (extent of condition) associated with the breaker failures. The licensee determined that these issues could affect other safety equipment. While the licensee did not find any additional problems, long-term corrective actions addressing this condition were included in the Condition Reports.

02.03 Corrective Actions

a. Determine that appropriate corrective actions are specified for each root/contributing cause or that there is an evaluation that no actions are necessary.

The licensee took immediate corrective actions to restore the diesel auxiliaries, related breakers, and the EDGs to an operable status. The QC inspection, engineering oversight, operations understanding of breaker schemes, and PM programs and procedures were all appropriately addressed.

b. Determine that the corrective actions have been prioritized with consideration of the risk significance and regulatory compliance.

The licensee restored the EDGs to an operable status within the Technical Specification allowed outage time. After restoring the effected EDG, the other breakers and EDGs were reviewed to ensure that they would perform their intended functions. The inspectors reviewed the licensee's actions and concluded that the EDGs were operable.

c. Determine that a schedule has been established for implementing and completing the corrective actions.

The licensee's plans for the reviewing the breaker PM program and procedures, addressing the operations knowledge issues, and addressing the QC and engineering issues were consistent with risk significance of the equipment.

d. Determine that quantitative or qualitative measures of success have been developed for determining the effectiveness of the corrective actions to prevent recurrence.

Licensee management has reviewed and concurred with the root cause evaluation and proposed corrective actions. Enhanced monitoring of the EDGs and emergency AC power by system engineering, operations, and maintenance has been effected. Planned outages for testing or maintenance will receive additional oversight. The licensee has also scheduled a Safety Audit and Engineering Review effectiveness evaluation to assess the adequacy of the root cause and corrective actions.

Attachment

MANAGEMENT MEETING

Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on June 9, 2000. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

Partial List of Persons Contacted

R. V. Badham, Safety Audit Engineering Review Supervisor
C. D. Collins, Operations Manager
S. Fulmer, Plant Training and Emergency Preparadness Manager
J. S. Gates, Administration Manager
D. E. Grissette, Assistant General Manager - Operations
J. R. Johnson, Maintenance Manager
R. Lovvorn, Root Cause Team
R. R. Martin, Engineering Support Manager
C. D. Nesbitt, Assistant General Manager - Plant Support
E. Stephenson, Root Cause Team
L. M. Stinson, Plant General Manager - FNP

Attachment