



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

October 30, 2000

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

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT - NRC INTEGRATED INSPECTION
REPORT NOS. 50-348/00-04 and 50-364/00-04

Dear Mr. Morey:

On September 30, 2000, the NRC completed an inspection at your Farley Nuclear Plant. The enclosed integrated report presents the results of that inspection. The results of this inspection were discussed on October 6, 2000, with Mr. M. Stinson and other members of your staff.

This 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.

The NRC identified one issue that was evaluated under the significance determination process (SDP) and was determined to be of very low safety significance (Green). This issue has been entered into your corrective action program and is discussed in the enclosed inspection report. This issue was determined to involve a violation of NRC requirements, but because of its very low safety significance and because it was entered into your corrective action system, the violation is not cited. If you contest this non-cited violation, you should provide a response within 30 days of the date of this letter, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Farley facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS).

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ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading 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 Integrated Inspection Report Nos. 50-348/00-04 and 50-364/00-04

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U. S. NUCLEAR REGULATORY COMMISSION (NRC)

REGION II

Docket Nos.: 50-348 and 50-364

License Nos.: NPF-2 and NPF-8

Report Nos.: 50-348/00-04 and 50-364/00-04

Licensee: Southern Nuclear Operating Company, Inc. (SNC)

Facility: Farley Nuclear Plant, Units 1 and 2

Location: 7388 N. State Highway 95
Columbia, AL 36319

Dates: July 2 to September 30, 2000

Inspectors: T. Johnson, Senior Resident Inspector
R. Caldwell, Resident Inspector
S. Sanchez, Resident Inspector - Crystal River
D. Forbes, Radiation Specialist (Sections 2OS2, 2OS3)
M. Scott, Reactor Inspector (Section 1R07)
R. Chou, Reactor Inspector (Section 1R07)
M. Ernstes, Licensing Examiner (Section 1R11.2)
W. Sartor, EP Inspector (Sections 1EP1 and 4OA1)
J. Kreh, EP Inspector (Section 1EP1)
C. Rapp, Senior Project Engineer (Section 1R06)
L. Hayes, Physical Security Inspector (Section 4OA1.5)

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

Enclosure

SUMMARY OF FINDINGS

IR 05000348/00-04, IR 05000364/00-04, on 07/02-09/30/2000; Southern Nuclear Operating Company, Joseph M. Farley Nuclear Plant, Units 1 & 2. Event Follow-up.

This report covers a 12-week period of resident inspection and announced inspections by a regional project engineer, a licensed operator examiner, a regional office radiation specialist, two emergency preparedness specialists, and two regional office engineering specialists. The significance of issues is indicated by their color (green, white, yellow, or red) and was determined by the Significance Determination Process in NRC Inspection Manual Chapter 0609.

Cornerstone: Initiating Events

- Green. A non-cited violation was identified for an inadequate procedure required by Technical Specification 5.4.1 to monitor the performance of the safety related 2A, 2C, and 2D service water pump motors to ensure they had adequate bearing lubrication. As a result, the 2C service water pump motor failed and caused a small fire. This issue was evaluated as a transient initiator contributor and also contributed to the potential for internal flooding from sprinkler header discharge which had notable risk implications in the Farley Probabilistic Risk Analysis (PRA).

However, this issue was of very low safety significance because the increase in risk from the PRA was minimal. Also, the impact of the failure and fire was contained to the 2C pump and the sprinklers only pressurized but did not discharge due to insufficient heat to open the sprinkler heads. No actual flooding existed. The licensee also entered and fully addressed the problem in their corrective action system (Section 4OA3).

Report Details

Summary of Plant Status

Unit 1 operated at 100% rated thermal power (RTP) for the inspection period except for two power reductions to 60% on August 29 and 30, to repair cooling tower leaks.

Unit 2 operated at 100% RTP for the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather

a. Inspection Scope

The inspectors evaluated the implementation of the adverse weather preparation procedure, FNP-0-AP-21.0, Severe Weather, and compensatory measures for the affected conditions before the onset of and during adverse weather conditions caused by 2 tropical storms. The inspectors verified Turbine Building, Containment Building, and Auxiliary Building doors were shut, and that sump drainage systems were operable. Additionally, the grounds were inspected for loose material that could cause damage in sustained high winds and the licensee's actions to reduce risk significant work were reviewed. Lineups for selected systems were verified to ensure equipment was available for emergency use.

b. Issues and Findings

No findings were identified.

1R04 Equipment Alignment

a. Inspection Scope

The inspectors performed a detailed system walk down and review of the Unit 1 and 2 component cooling water (CCW) systems, and partial system walk down and review of the following systems to ensure that they were properly aligned when redundant systems or trains were out of service. The walk down included a review of system documentation, control room and infield checks of valves, switches, components, electrical power, support equipment, and instrumentation.

- Unit 1 and 2 auxiliary feedwater (AFW)
- Unit 1, 2, and common emergency AC power
- Unit 1 and 2 residual heat removal (RHR) system.
- Unit 2 service water (SW) system

b. Issues and Findings

No findings were identified.

1R05 Fire Protectiona. Inspection Scope

The inspectors conducted a walk down of the Unit 1 and 2 Auxiliary Buildings to verify the licensee's implementation of fire protection activities. The inspectors reviewed the requirements in the Updated Final Safety Analysis Report (UFSAR), Appendix 9B, Fire Protection Program and compared the licensee's implementation of the program to the requirements. The inspectors verified the licensee's control of transient combustibles; the operational readiness of the fire suppression system; and, the material condition and status of fire dampers, doors and barriers. The inspectors also verified that adequate compensatory measures, including fire watches, were in place for degraded fire barriers.

b. Issues and Findings

No findings were identified.

1R06 Flood Protection Measuresb. Inspection Scope

The inspectors conducted a walkdown inspection of plant areas to verify that plant equipment was not damaged by internal flooding. These areas included the CCW heat exchanger room, Emergency Diesel Generator (EDG) Building, SW Building, Turbine Building, Main Steam Valve room, and RHR pump and heat exchanger rooms. The inspectors reviewed the following documents:

- FNP-0-AOP 10.0, Loss of Service Water
- FNP-0-AOP 7.0, Loss of Turbine Building Service Water
- Southern Company Services Calculation Number BM-99-1932-001, Internal Flooding Assessment
- Functional System Description A-181000, Component Cooling Water
- Functional System Description A-181000, Service Water System
- FNP-1-ARP-1.1
- FNP-2-ARP-1.1
- Drawing D-350800, Aux. Bldg. Conc-Penetration Seals Key Plan @ El. 83'-0" (Unit 1)
- Drawing D-356035, Aux. Bldg. Conc-Penetration Seals Key Plan @ El. 83'-0" (Unit 2)
- UFSAR Chapter 4, Site Characteristics
- UFSAR Chapter 15, Accident Analysis

The internal flooding analysis and plant design features described in the UFSAR were used as criteria for this inspection. The inspectors also reviewed site procedures that would provide guidance for mitigation of internal flooding.

b. Findings

No findings were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors selected three risk important heat exchangers (HX) for evaluation. These were the Unit 1 1A charging pump room cooler, the Unit 1 1C CCW HX, and the 1C EDG jacket water HX. The inspectors verified: selected heat exchanger test methodology was consistent with accepted industry practices, or equivalent; test conditions were appropriately considered; test criteria were appropriate and met; test results appropriately considered differences between testing conditions and design conditions; test frequency was appropriate; and, test results considered test instrument inaccuracies and differences. The inspectors reviewed both a one time performance test (completed in 1997) and routine inspection/cleaning data for the CCW HX selected.

For CCW HX inspection/cleaning, the inspectors reviewed the methods and results of heat exchanger/sink performance inspections. The inspectors verified the following: the visual and eddy current methods used to inspect heat exchangers were consistent with expected degradation; established acceptance criteria were consistent with accepted industry standards, or equivalent (Generic Letter 89-13, Service Water System Problems Affecting Safety-Related Equipment); and as-found results were appropriately dispositioned such that the final condition was acceptable.

The inspectors reviewed portions of the licensee's effort to control corrosion of the service water piping that provides safety related cooling to the plant. The inspectors verified: that chemical treatments, tube leak monitoring, and methods used to control biotic fouling corrosion (such as shells and microbiological induced corrosion) were sufficient to ensure required CCW heat exchanger performance; that tube plugging was consistent with design assumptions; and, that the licensee had entered heat exchanger/sink performance problems into their corrective action program and effective corrective action had been taken. The inspectors reviewed the reports on the Ultimate Heat Sink (UHS) dam inspections and reviewed the volumetric survey of the UHS pond. The inspectors reviewed potential common cause problems such as CCW flow control valves and instrument air availability. The inspectors reviewed the operational occurrences, and audit and self assessment reports available on the above HX and systems. Documents reviewed during the inspection are listed in Attachment 2 of this report.

b. Issues and Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Resident Reviews

a. Inspection Scope

The inspectors observed portions of the licensed operator training and testing program during the quarter. The inspector observed scenarios for a steam generator tube rupture and a small break loss of coolant accident. High risk operator actions were also evaluated. The inspectors assessed overall performance, self-critiques, training feedback, and management oversight.

b. Issues and Findings

No findings were identified.

.2 Regional Inspector Biennial Review of Licensed Operator Requalification Program

a. Inspection Scope

The inspector reviewed a segment of the licensee's biennial written examination and evaluated its effectiveness in providing a basis for evaluating operator knowledge of subjects covered in the requalification program. Examination quality, licensee effectiveness in incorporating plant and industry feedback into the training program, and examination development methodology were evaluated for compliance with guidelines contained in procedure FNP-0-TCP-17.3, License Retraining Program Administration.

The inspector observed the annual dynamic simulator examination for one shift of operators to evaluate the adequacy of licensee training on high risk operator actions. During these observations, the inspectors assessed licensee evaluator effectiveness in identifying operator performance deficiencies requiring supplemental training and for compliance with the guidelines contained in procedure FNP-0-TCP-17.6, Simulator Training Evaluation / Documentation.

The inspector assessed the effectiveness of the licensee's program for providing feedback to revise and maintain the licensed operator continuing training program up to date. The inspector reviewed and evaluated the licensee's remedial training program for selected operator deficiencies identified during the previous requalification cycle. The inspector also reviewed procedure FNP-0-TCP-17.5, License Administration, and a sample of on-shift licensed operator qualification records to ensure compliance with 10 CFR 55.59, Requalification and 10 CFR 55.53, Conditions of License, respectively.

b. Issues and Findings

No findings were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors reviewed licensee documentation and performance associated with problems on the equipment listed below. Items reviewed included licensee evaluation of functional failures, maintenance preventable functional failures, repetitive failures, availability and reliability monitoring, and system specialist involvement. Items were evaluated for compliance with 10 CFR 50.65 and the licensee's internal procedures.

- Turbine Driven Auxiliary feedwater (AFW) pump
- SW pumps
- Cooling Towers
- Service Air Compressors
- CCW pumps
- Electrical Breakers

b. Issues and Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors evaluated the effectiveness of the risk assessments performed prior to conducting planned maintenance on the following systems and components to assess the licensee's actions to plan and control the work activities. The inspectors also verified the licensee had adequately identified and resolved risk assessments for emergent work and other problems.

- Service Air Compressors
- Turbine driven AFW pump
- EDG 1B and 2C
- RHR pump 2A
- SW pumps 1C and 2C
- Unit 2 Containment isolation valve HV 7136
- 2C EDG
- Unit 2 Main Lube Oil Strainers

b. Issues and Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the licensee's operability evaluations on the following systems to ensure that the assessment was properly justified and that the affected component or system remained operable. Items checked included the technical adequacy of the operability evaluation, consideration of degraded conditions and compensatory measures, and a review of the design bases. The licensee's performance and evaluations were compared to the requirements in site procedures.

- Unit 1 and 2 SW through wall piping leak
- Unit 1 AFW
- EDG fuel oil transfer

b. Issues and Findings

No findings were identified.

1R16 Operator Work Arounds

a. Inspection Scope

The inspectors reviewed operator work arounds on the following systems to determine if the functional capability of the system or human performance in responding to an initiating event were affected. Additionally, the prioritization and actions required to address the operator work arounds were evaluated. Inspectors reviewed the cumulative effects of the operator work arounds on the ability of operators to implement abnormal or emergency operating procedures, on the potential to increase an initiating event frequency, and on the potential to affect multiple mitigating systems.

- Unit 2 Power Operated Relief Valve block valves
- 1D containment cooler
- Service Air Compressor trouble alarm

b. Issues and Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors verified that post maintenance test procedures and test activities for the following systems were adequate to verify system operability and functional capability.

- 2A RHR pump
- 1C and 2C SW pumps
- AFW pumps
- 1B EDG
- 2C EDG

b. Issues and Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed the surveillance test procedures (STP) listed below to verify system and component operability and to ensure that the acceptance criteria met Technical Specification (TS) and design requirements. In addition, completed STPs were reviewed to ensure safety significant components were operable.

- FNP-2-STP-22.16, Turbine Driven AFW (TDAFW) Pump Inservice Test (IST)
- FNP-1-STP-22.19, AFW Normal Flowpath Verification
- FNP-2-STP-11.1, 2A RHR Pump Quarterly IST
- FNP-2-STP-11.2, 2B RHR Pump Quarterly IST
- FNP-1-STP-22.1, 1A MDAFW Pump IST
- FNP-2-STP-33.0A, Solid State Protection Train A Operability Test
- FNP-2-STP-22.23, TDAFW Pump Trip & Throttle Valve Indication Operability Test
- FNP-2-STP-21.3, Turbine Driven AFW Pump Steam Supply Valves IST
- FNP-2-STP-4.3, Charging Pump 2C IST
- FNP-1-STP-21.1, Main Steam Line Isolation Valve Operability Test

b. Issues and Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation

a. Inspection Scope

The inspectors reviewed the objectives and scenario for the biennial, full-participation emergency preparedness exercise conducted on September 13 to determine whether they were designed to adequately test major elements of the licensee's emergency plan. The criteria against which the exercise scenario, the licensee's performance, and the licensee's critique were evaluated are contained in Attachment 01 of NRC Inspection Procedure 71114.

The inspectors observed and evaluated the licensee's performance in the exercise, as well as selected activities related to the licensee's conduct and self-assessment of the exercise. Licensee activities inspected during the exercise included those occurring in the Control Room Simulator, Technical Support Center, Operational Support Center, and Emergency Operations Facility. The NRC's evaluation focused on the risk-significant activities of event classification, notification of governmental authorities, onsite protective actions, offsite protective action recommendations, and accident mitigation. The inspectors also evaluated command and control, the transfer of emergency responsibilities between facilities, communications, procedure usage, and

the overall implementation of the emergency plan. The inspectors attended the post-exercise critique to evaluate the licensee's self-assessment process, as well as the presentation of critique results to plant management.

b. Issues and Findings

No findings were identified.

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed a practice emergency drill on July 26, and training evolutions to validate that the licensee was properly identifying classification, making correct notification and protective action recommendations, and conducting self-assessments.

b. Issues and Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety [OS]

2OS2 As Low As Reasonably Achievable (ALARA) Planning and Controls

a. Inspection Scope

The inspectors reviewed the plant collective exposure history, current exposure dose trends, the year 2000 annual site exposure goal, and attended an ALARA briefing to determine if the licensee was implementing ALARA practices as required by 10 CFR 20.1101(b) and licensee procedure FNP-0-AP-90, "ALARA Policy and Implementation." The inspectors also reviewed licensee controls for declared pregnant females to verify compliance with 10 CFR 20.1208.

b. Issues and Findings

No findings were identified.

2OS3 Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors reviewed the accuracy, operability, calibration, storage, and in-field source checks of portable survey instruments, portal monitors, and whole body counters to determine if the licensee was implementing site procedures. Documents and procedures reviewed during the inspection are listed in Attachment 2 of this report.

b. Issues and Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 PI Verification - Initiating Events

a. Inspection Scope

The inspectors verified the initiating events PI data for the second quarter of 2000. The data was verified using the reactor operator logs, monthly operating reports, Licensee Event Report (LER) data, NRC Inspection Reports, and other licensee information.

b. Issues and Findings

No findings were identified.

.2 PI Verification - Emergency Response Organization (ERO) Drill/Exercise Performance

a. Inspection Scope

Licensee records were reviewed to determine whether the submitted PI statistics were calculated in accordance with the guidance contained in Section 2.4, Emergency Preparedness Cornerstone, of NEI 99-02, Rev. 0, "Regulatory Assessment Performance Indicator Guideline." The inspectors assessed the accuracy of the PI for ERO drill and exercise performance over the past eight quarters through review of a sample of drill records. Verification of this PI included detailed review and discussion of the April 9, 2000, Notification of Unusual Event declaration and the August 16, 2000, Alert declaration and its subsequent retraction. The inspectors verified the licensee's determinations regarding classification and notification for these events. The retraction for the Alert declaration was determined to be justified in accordance with the guidance of NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 50.73."

b. Issues and Findings

No findings were identified.

.3 PI Verification - ERO Drill Participation

a. Inspection Scope

The inspectors assessed the accuracy of the PI for ERO drill participation during the previous eight quarters by selective review of the training records for the 121 personnel assigned to key positions in the ERO.

b. Issues and Findings

No findings were identified.

.4 PI Verification - Alert and Notification System Reliability

a. Inspection Scope

The inspectors assessed the accuracy of the PI for the alert and notification system reliability through review of the licensee's records of the siren tests for the previous 12 months. The licensee's siren system consisted of three sirens with the remainder of the emergency planning zone notified by tone-alert radios.

b. Issues and Findings

No Findings were Identified

.5 PI Verification - Physical Security

a. Inspection Scope

The inspector reviewed SNC's program for gathering and submitting data for the Fitness-for-Duty, Personnel Screening, and Protected Area Security Performance Indicators. Licensee procedure FNP-0-AP-54, "Preparation and Reporting of NRC Performance Indicator Data," which outlines the criteria contained in NEI 99-02, was evaluated. The review also included SNC's tracking and trending reports and security event reports for the Performance Indicator data submitted from the first quarter 1998 to the first quarter of 2000.

b. Issues and Findings

A discrepancy was noted in that the licensee failed to enter approximately 285 minutes into the total time of the first quarter of 2000 for a compensatory measure that was in place due to degraded protected area equipment. The problem and time were accounted for; however, the time was not totaled correctly. The licensee remained in the green band after the unaccounted time was entered. There were no other findings associated with this inspection activity.

4OA3 Event Follow-up

.1 Unit 2 Fire in the 2C SW pump motor

a. Inspection Scope

The inspectors observed the licensee's actions during and after a fire in the 2C SW pump motor on August 16. These actions included: main control room command and control; the classification of the event as an "Alert;" licensee reporting to local, state, and federal officials; and the subsequent declassification of the event. The system was walked down to assess damage and to review repair and restoration activities. The inspectors reviewed the licensee's probabilistic safety assessment and verified that the event root cause analysis was completed in accordance with site procedures.

b. Issues and Findings

The inspectors reviewed the event root cause analysis which identified that a combination of an inadequate equipment monitoring procedure regarding the log specifications for SW pump motor lower bearing oil sight-glass configuration and inadequate corrective actions associated with a 2C SW pump motor oil leak caused the SW pump motor lower bearing to lose adequate lubrication. These two items caused the lower bearing to fail, thereby causing the fire.

On August 14, the licensee had identified that the 2C SW Pump Motor lower bearing had a slight oil leak of 1 drop every 1 to 1.5 minutes. This was documented on a Deficiency Report (DR) 545862, which was processed as a Work Order that did not require immediate attention. The reviewers did not recognize that, due to the small bearing oil reservoir size, the oil level in the bearing could be too low for adequate lubrication within 2 to 8 days.

The oil level criteria specified in the operator logs was "oil visible in the sight glass." However, this was inadequate to ensure oil on the bearing for the failed 2C SW pump motor. This concern was also applicable to the 2A and 2D SW pump motors. Following the event, it was noted that the 2C SW Pump Motor oil sight-glass level was low, but still within the log limits.

The inadequate corrective action for the oil leak and the inadequate equipment monitoring procedure were considered a finding which was reviewed as a transient initiator contributor and as a flood protection degradation. When the fire occurred, the fire detection system caused the SW Intake Structure (SWIS) pre-action fire suppression system to pressurize the main fire header. This caused the fire suppression headers over Unit 1 and 2, 'A' and 'B' train SW Pumps to be pressurized with fire main water. This condition increased the risk of transients to both plants due to a pipe break or system actuation flooding the pumps. Flooding of the pumps had a high safety significance in the Farley Probabilistic Safety Assessment. The header remained pressurized for approximately 25 hours after the event.

Risk Evaluation: By pressurizing the fire protection header the probability of a reactor trip/transient increased. A detector malfunction or a fire protection pipe break could spray two of the Service Water pumps, causing them to trip with an ensuing reactor trip. This condition existed for 25 hours. Conservatively, assuming that a reactor trip would

have been caused by the pipe pressurization and subsequent spraying of the pumps sometime during the 25 hours, the reactor trip initiating frequency would increase by one. Using the NRC's simplified plant analysis risk model (page 8-1) Rev. 2QA, the initiating event frequency would change from 3.14E-4 trips/hr to 4.28E-4 trips/hr. The subsequent CDF increase would be:

$$\begin{aligned} &4.28\text{E-}4 \text{ [new IE frequency]} / 3.14\text{E-}4 \text{ [baseline IE frequency]} = X \text{ [new CDF]} / \\ &1.818\text{E-}11 \text{ [baseline CDF]} \\ &X = 4.28\text{E-}4 / 3.14\text{E-}4 * 1.818\text{E-}11 \\ &X = 2.47\text{E-}11/\text{hr} \end{aligned}$$

Therefore, the CDF change would be $2.47\text{E-}11[\text{new CDF}] - 1.818\text{E-}11[\text{baseline CDF}] = 6.52\text{E-}12/\text{hr}$ or, $6.52\text{E-}12 * 8760 \text{ hrs} = 5.7\text{E-}8/\text{yr}$ change in CDF. This is less than $1\text{E-}6$ and the performance deficiency would be GREEN.

Technical Specifications (TS) 5.4.1.a requires that written procedures be established, implemented, and maintained for activities recommended in NRC Regulatory Guide (RG) 1.33, Rev. 2, Appendix A. The RG requires procedures for controlling, operating, and monitoring safety related equipment. Plant procedure FNP-0-SOP-0, General Instructions to Operations Personnel, implements operator logging requirements per procedure FNP-0-SOP-0.11, Watch Station Tours and Operator Logs. Procedure SOP-0.11 requires operators to check safety related equipment, including the SW pump motors, for proper lubrication and to ensure the equipment is in a state of readiness. In this case, the procedure monitoring requirement of "oil visible in the sight glass" was not adequate to prevent the failure of the 2C SW pump motor. This was a violation of TS 5.4.1.a. However, this issue was of very low safety significance as discussed above. Also, the impact of the pump failure and fire was contained to the 2C pump and the sprinklers only pressurized, but did not discharge, due to insufficient heat to open the sprinkler heads. The licensee also entered and fully addressed the problem in their corrective action program (CR 2000005226). Therefore, this finding is considered a non-cited violation (NCV 50-364/00-04-01: Failure to Adequately Monitor the Performance and Lubrication of the Safety Related 2A, 2B and 2D SW Pump Motors), in accordance with Section VI.A.1 of the NRC Enforcement Policy. [GREEN]

.2 (Closed) LER 50-364/00-03: Pressurizer Pressure Protection Channel Not in Compliance With Technical Specifications

The LER was reviewed and no findings of significance were identified. This LER constituted a violation of minor significance that is not subject to enforcement action in accordance with section IV of the NRC Enforcement Policy. The basis for being minor was that the other two redundant pressurizer pressure reactor trip channels were in calibration and within TS compliance. Only two of the pressure channels are required to actuate a reactor trip. Further, the safety injection low pressurizer pressure trip function was not affected, and it provides a backup to the reactor trip function at a slightly lower pressure (1750 psig versus 1765 psig). This issue is in the licensee's corrective action program as CR 2000005208.

.3 (Closed) Unresolved Item (URI) 50-348, 364/96-09-08: Adequacy of Kaowool Qualification Tests to Scope Installed Configurations

This issue was previously closed in NRC Inspection Report 50-348, 364/99-06, but the basis for closure was not fully discussed. In consideration of recent industry issues with Kaowool, the staff had concluded that the original Kaowool qualification testing did not provide a complete technical basis to demonstrate that Kaowool fire barriers could fulfill design requirements. This was communicated to the licensee in a letter dated August 26, 1999. The licensee had responded in a letter dated September 23, 1999 and noted that Kaowool was part of the Farley licensing basis and exemptions from 10 CFR 50 Appendix R one-hour fire wrap requirements had been previously granted by the NRC. Subsequently, a meeting was held between the staff and all licensees employing the Kaowool fire barrier on December 8, 1999, to discuss conditions at each plant and possible methods to compensate for Kaowool deficiencies. The licensee had implemented a one-hour fire watch as an interim compensatory action and commenced a review to develop a specific long term plan to address the usage of Kaowool at Farley. As delineated in a letter dated May 1, 2000, the licensee initiated action to perform a rigorous Appendix R analysis by the end of the year which would be followed by a detailed plan to eliminate reliance on Kaowool. The NRC acknowledged that letter and the licensee's plan in a letter dated September 21, 2000. The NRC stated that the staff did not have any concerns about the licensee's intended approach and requested a meeting after completion of the evaluation to discuss the results and the resultant detailed plan. The staff considers the licensee is effectively addressing the technical concerns with the use of Kaowool. Based on the licensee's implementation of the one-hour fire watch compensatory measure, ongoing action to address the matter, and the Agency's apparent acceptance of the barriers by inaction on Generic Letter 86-10, no violations of NRC requirements were identified. This constitutes the basis for closure of the URI.

4OA6 Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mike Stinson, Plant General Manager, and other members of licensee management at the conclusion of the inspection on October 6. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. V. Badham, Safety Audit Engineering Review Supervisor
 C. L. Buck, Technical Manager
 R. M. Coleman, Outage and Modification Manager
 C. D. Collins, Operations Manager
 K. C. Dyar, Security Manager
 S. Fulmer, Plant Training and Emergency Preparedness Manager
 J. S. Gates, Administration Manager
 D. E. Grisette, Assistant General Manager - Operations
 J. G. Horn, Outage Planning Supervisor
 J. R. Johnson, Maintenance Manager
 R. R. Martin, Engineering Support Manager
 C. D. Nesbitt, Assistant General Manager - Plant Support
 L. M. Stinson, Plant General Manager - FNP
 R. J. Vanderbye, Emergency Preparedness Coordinator

ITEMS OPENED AND CLOSED

Opened and Closed

50-364/00-04-01	NCV	Failure to Adequately Monitor the Performance and Lubrication of the Safety Related 2A, 2B and 2D SW Pump Motors (Section 4OA3.1)
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Closed

50-364/00-03	LER	Pressurizer Pressure Protection Channel Not in Compliance with Technical Specifications (Section 4OA3.2)
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Discussed

50-348,364/96-09-08	URI	Adequacy of Kaowool Qualification Tests to Scope Installed Configurations (Section 4OA3.3)
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Attachments: 1. NRC's Revised Reactor Oversight Process
 2. Procedures and Documents Reviewed

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events ● Mitigating Systems ● Barrier Integrity ● Emergency Preparedness	● Occupational ● Public	● Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

PROCEDURES AND DOCUMENTS REVIEWED

Documents reviewed during the Heat Sink Performance Inspection (Report Section 1R07) conducted during the report period.

Condition or Occurrence Reports

98-296, 98-378, 98-411, 98-807, 99-231, 99-521, 99-791, 99-3015, 99-3064, 2000-165, 2000-457, 2000-489, 2000-500, 2000-501, and 2000-3008

Audits and Self Assessments

Engineer Support Self Assessment, December 22, 1999

Test Control Audit, November 1999, January 1998, and December 1997

July 2000 Maintenance Rule Monthly Report, August 22, 2000

Work Orders

M-99006128, 2A SGFP Turbine Lower Oil Cooler

M-99006149, 2A SGFP Oil Coolers SW TCV

S-99009823, MCC 2B Room Cooler Test

S-98005390, Service Water Storage Pond Volume Survey Evaluation

Letters

Westinghouse to Southern Nuclear Operating Company, ALA-96-739, dated December 12, 1996, "Evaluation of Increased CCW Temperature on Affected Components"

Bechtel to Southern Nuclear Operating Company, AP-20979, dated December 17, 1993, FNP Units 1 and 2 Component Cooling Water (CCW) Design Basis Loads (ES91-2016)

Coltec Industries to Alabama Power Company, APCO P.O. 95049, ES90-1818, Rev.2, December 1995, Standby Diesel Generators Heat Exchanger Specification Clarification

Calculations

CN-96-0047, Rev. D, Appendix A, RSG - CCW and RHR LOCA Recirculation Mode Performance

CN-96-0047, Rev. D, Component Cooling Water Evaluation - Power Upate and Replacement Steam Generator

Completed Test Procedures

Unit 1 Pre-Operational Test 016-5-003, Component Cooling Pre-Operational Test, Rev. 0, dated April 25, 1977

FNP-1-ETP-4395, Service Water Flow Balance Validation Test, Rev. 2, test review dated October 12, 1994 (Work Authorization (WA) 123956 for Unit 1)

FN-P-0-ETP-4379, Performance Test for Units 1 and 2 Component Cooling Water Heat Exchanger, Rev. 5, test review date April 28, 1997 (WA W00470317, 1C Component Cooling Water Heat Exchanger Performance Test)

FN-P-0-MP-13.1, Emergency Diesel Generators 1C and 2C Refuel Inspection, Rev. 23, test reviewed date March 27, 1999 (WA W00611154, 2C Diesel Generator Shutdown Inspection)

FN-P-0-ETP-4447, Effectiveness Test for FN-P Safety-Related Room Coolers, Rev. 1, test accepted date May 4, 1999 (WA W00611709, 1A Charging Pump Room Cooler Test)

Per FN-P-0-ETP-4447, Temperature Effectiveness Test for FN-P Safety-Related Room Coolers, Rev. 1, test accepted date May 5, 1999 (WA W00611760, 2A Charging Pump Room Cooler Test)

FN-P-0-ETP-4368, Performance Test for Units 1 and 2 Small Diesel Generator Jacket Water Heat Exchangers, Rev. 7, test accepted date 2-12-00 (WA W00635294, 1C Diesel Generator Jacket Water Heat Exchanger)

FN-P-0-ETP-4367, Performance Test for Units 1 and 2 Colt-Pielstick (Large) Diesel Generator Jacket Water Heat Exchangers, Rev. 8

W00639771 1-2A Diesel Generator Jacket Water Heat Exchanger, February 12, 2000

W00642198 2B Diesel Generator Jacket Water Heat Exchanger, July 31, 2000

W00642175 1B Diesel Generator Jacket Water Heat Exchange, July 31, 2000

FN-P-0-ETP-4384, Service Water Pond Deformation Monument Readings, Rev. 1, readings dated May 22, 2000 (WA W00634776)

FN-P-0-STP-24.6, Service Water Buried Pipe Inspection, Rev. 8, inspection dated, October 26, 1999

FHP-0-STP-125, Service Water Pond Seepage Test, Rev. 9, test dated October 19, 1998 (WA W00497970)

FN-P-0-ETP-4389, Service Water Storage Pond Dam Biennial Inspection, Rev. 2, inspection dated June 6, 1998 (WA W00499151) and August 22, 2000 (WA W00635288)

FN-P-0-ETP-4381, Service Water Storage Pond Piezometer Well Readings, Rev. 6, readings dated August 3, 2000 (WA W00643636)

FN-P-0-ETP-4338, Service Water Storage Pond Sounding Survey, Rev. 2, survey dated March 20, 1998 (WA W00497370)

FN-P-0-ETP-1007, Service Water Wet Pit Cleanup, Rev. 7, cleanup dated March 16, 2000 (WA W00631509)

General Inspections and Tests

ENG 15-93-0052, Service Water Radiographic Testing for Unit 2, Performed May 3 - June 4, 1993

ENG 15-94-0429, Service Water Radiographic Testing for Units 1 and 2, performed August 22 - September 1, 1994

Document Number PD04285, Record of Eddy Current Inspection of Component Cooling Water Heat Exchangers 2A, 2B, and 2C for Unit 2, August 1999

1994 Service Water Flow Test Measured Flowrates for Units 1 and 2, test performed August 8 - 18, 1994

NMS-99-0179, REA 1999-1975 and IRS 970855 Units 1 and 2 Service Water Piping Inspections, performed August 9 - 26, 1999

System Health Reports for Second Quarter 2000

Systems: Service Water/Service Water Integrity, Component Cooling Water, Containment Coolers (E12)/ CCCLMS (G21), Emergency Diesel Generators, Residual Heat Removal (E11), and Auxiliary Feedwater

Purchase Change Notice

PCN B-90-1-6986, March 28, 1991, Service Water Cooling Coil Data Sheets

Site Procedures

FPN-0-NDE-100.40, Revision 1, Nondestructive Examination Procedure, Manual Ultrasonic Examination of Centrifugal Pump Case

FPN-1-AOP-9.0, Loss of Component Cooling Water, Rev. 11

FPN-1-AOP-10.0, Loss of Service Water, Rev.10

FPN-0-ETP-4447, Temperature Effectiveness Test for FNP Safety-Related Room Coolers, Rev. 2

FPN-0-GMP-40.0, Pressure Testing, Rev. 12

FPN-0-MP-94.2, Component Cooling Water Heat Exchanger Tube Plugging, Rev. 0

FPN-1-STP-1.0, Operations Daily and Shift Surveillance Requirements, Rev. 70

FPN-0-M-82, Service Water Plan, Rev. 5

FPN-0-SYP-9, User's Guide for Safety-Related Service Water Heat Exchangers Thermal Performance, Rev. 2

FPN-0-CCP-708, Chemical Addition/Control of the Service Water System, Rev. 43

Design Change Package

DCP 95-0-8816, Rev. 0, June 1, 1995, Control Room Air Conditioning System

DCP 90-2-6987, Rev. 0, August, 26, 1994, Unit 2 Room Cooler Replacement

Miscellaneous

Service Water Inspection Program for Units 1 and 2, Rev. 4

FNP Daily Chemistry Reports, dated August 16 and 29, 2000

Preventive Maintenance Task TPNS NSP16, task 3, Chlorination of Service Water

Preventive Maintenance Task TPNS Q1P17H, task 4, Eddy Current Inspection of CCW Heat Exchanger

Memorandum to File, NRC Information Notice (IN 97-41) Potentially Undersized Emergency Diesel Generator (EDG) Oil coolers, FNP-99-0110LIC, dated September 30, 1999

Technical Manual - Conoflow Pneumatic Piston Actuators, GB50 - GB55 Series (FCV-3009)

International Water Conference Paper #99-38, "An Evaluation of Multiple Water Treatment Programs for the Plant Farley Service Water System", published in the Proceeding of the International Water Conference, Pittsburgh, PA, October 16, 1999

REA 94-0465, Service Water Minimum Available Flow Evaluation

Documents reviewed during the Radiation Safety Inspection (Report Section 2) conducted during the report period.

Site Procedures

FNP-0-AP-90, "ALARA Policy and Implementation", Rev. 3

FNP-0-DOS-307, "Operation and Standardization of the Canberra Nuclear Stand-Up Whole Body Counters", Rev. 24

FNP-0-RCP-225, "Operation and Calibration of Eberline RO-2/2A Ion Chamber", Rev. 13

FNP-0-RCP-207, "Operation and Calibration of Eberline E-120, and E-140N Count Rate Meter", Rev. 9

FNP-0-RCP-214, "Operation and Calibration of Eberline Analog Smart Portable Model ASP-1" Rev. 14

FNP-0-RCP-264, "Operation and Calibration of Eberline RO-20 Ion Chamber", Rev. 1

FNP-0-RCP-273, "Operation and Calibration of the Xetex Model 330A Telescan", Rev. 2

FNP-0-RCP-287, "Operation and Calibration of the MGP Telepole", Rev. 0

FNP-0-RCP-254, "Operation and Calibration of Eberline Model RM-20 Radiation Monitor", Rev. 6

FNP-0-RCP-78, "Operation and Calibration of the Eberline Portal Monitors PCM-1B, PM-6, and PM-6A", Rev. 18

FNP-0-RCP-260, "Certification and Operation of the CDM-21 Electronic Dosimeter Calibrator and the Calibration of MGP Electronic Dosimeters", Rev. 3

FNP-0-RCP-201, "Calibration and Control of Fixed and Portable Health Physics Instrumentation", Rev. 25

