

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 50-400  
License No: NPF-63

Report No: 50-400/99-07

Licensee: Carolina Power & Light (CP&L)

Facility: Shearon Harris Nuclear Power Plant, Unit 1

Location: 5413 Shearon Harris Road  
New Hill, NC 27562

Dates: October 10 - November 20, 1999

Inspectors: J. Brady, Senior Resident Inspector  
R. Hagar, Resident Inspector  
E. Testa, Senior Radiation Specialist (Sections 2PS2, 2PS3,  
4OA2.1, and 4OA2.2)

Approved by: B. Bonser, Chief  
Reactor Projects Branch 4  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

Shearon Harris Nuclear Power Plant, Unit 1  
NRC Inspection Report 50-400/99-07

The report covers a six-week period of resident inspection. In addition, it includes the results of an announced inspection by a regional radiation specialist.

**No findings were identified during this inspection period.**

## Report Details

The plant operated at 100% of its licensed power level throughout this inspection period, except on November 6, when power was reduced to 80% for approximately 11 hours to enable testing of the main turbine control valves. After those valves were successfully tested, the plant was returned to 100% power.

### 1. REACTOR SAFETY

#### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

#### 1R01 Adverse Weather Preparations

##### a. Inspection Scope

The inspectors reviewed the licensee's preparations for cold weather as described in procedure AP-301, "Adverse Weather," Revision 24, to verify that those preparations limited the risk of weather related initiating events, ensured accessibility to accident mitigation system equipment, and adequately protected accident mitigation systems from adverse weather effects.

##### b. Observations and Findings

No findings were identified and documented through this inspection.

#### 1R03 Emergent Work

##### a. Inspection Scope

The inspectors reviewed the following emergent items, as described in the referenced Work Requests/Job Orders (WR/JOs) and/or Action Requests (ARs), to verify that the licensee had taken the necessary steps to demonstrate that emergent work activities were adequately planned and controlled to avoid initiating events, and to verify that the licensee ensured the functional capability of accident mitigation systems:

| <u>Reference</u> | <u>Title/Description</u>  |
|------------------|---|
| AR 8767          | High suspended particulate matter in the emergency diesel generator fuel-oil day tank |
| 99-AIFM1         | Diesel-driven fire pump lube oil contamination  |

##### b. Observations and Findings

No findings were identified and documented through this inspection.

1R04 Equipment Alignmenta. Inspection Scope

For the main feedwater system, the inspectors reviewed plant documents to determine correct system lineup, and observed equipment to verify that the system was correctly aligned. The inspectors also reviewed related Condition Reports (CRs) to verify that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact mitigating system availability.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R05 Fire Protectiona. Inspection Scope

The inspectors reviewed current ARs, work orders, and impairments associated with the fire suppression system. The inspectors reviewed the status of ongoing surveillance activities to determine whether they were current to support the operability of the fire protection system. In addition, the inspectors observed the fire protection detection and suppression equipment in the A & B switchgear rooms to determine whether any conditions or deficiencies existed which would impair the operability of that equipment.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R09 Inservice Testing of Pumps and Valvesa. Inspection Scope

For the inservice tests listed below, the inspectors reviewed the test procedures to ensure that the procedures were consistent with applicable American Society of Mechanical Engineers (ASME) code requirements. The inspectors also observed performance of the tests and/or reviewed related records, to verify that testing was being conducted in accordance with the procedures. These reviews were completed for the following IST tests:

| <u>Number</u> | <u>Rev.</u> | <u>Title</u>  |
|---------------|-------------|---|
| OST 1018      | 8           | "Main Steam Isolation and Main Feedwater Isolation Valves Operability Test Quarterly Interval Mode 1" |
| EST 229       | 0           | "Remote Position Indication Test for 1SP-62"  |

OST 1214 20 "Emergency Service Water System Operability Train A  
Quarterly Interval Modes 1-2-3-4"

b. Observations and Findings

No findings were identified and documented through this inspection.

1R12 Maintenance Rule Implementation

a. Inspection Scope

For the equipment issues described in the CRs and ARs listed below, the inspectors reviewed the licensee's implementation of the Maintenance Rule (10 CFR 50.65) with respect to the characterization of failures, the appropriateness of the associated a(1) or a(2) classification, and the appropriateness of either the associated a(2) performance criteria or the associated a(1) goals and corrective actions:

| <u>Document</u> | <u>Title/Description</u>   |
|-----------------|--|
| CR 99-01695     | 1-4A1 Feeder Breaker Failure   |
| CR 99-01699     | E-61-A Low Flow Trip   |
| CR 98-02984     | 'A' train Residual Heat Removal Pump inoperability                     |
| AR 4187         | 'A' Preheater Bypass Valve Shuttle Valve Sleeve Assembly               |
| AR 8233         | Containment Ventilation Isolation Radiation Monitor Functional Failure |

b. Observations and Findings

No findings were identified and documented through this inspection.

1R13 Maintenance Work Prioritization & Control

a. Inspection Scope

The inspectors reviewed the licensee's assessments of the risk impacts of removing from service those components associated with the emergent work items listed in Section 1R03. The inspectors also reviewed the licensee's consideration of the risk significance of work in the fuel handling building.

b. Observations and Findings

The inspectors observed that the licensee's on-line risk-assessment tool was not applicable to activities in the fuel handling building, since it only can be used to assess the risks associated with operating the plant with fuel in the reactor vessel. The inspectors also observed that the shutdown risk-assessment tool was not being used while the reactor was operating. Therefore, the licensee's programs and procedures did not require the licensee to conduct appropriate risk assessments for activities in the fuel handling building. The licensee initiated AR 0008170 to address this observation. No findings were identified and documented through this inspection.

1R15 Operability Evaluations

a. Inspection Scope

For the operability evaluations described in the Engineering Service Requests (ESR) listed below, the inspectors evaluated the technical adequacy of the evaluations, to ensure that operability was properly justified and the subject component or system remained available, such that no unrecognized increase in risk occurred:

| <u>ESR No.</u> | <u>Rev. No.</u> | <u>Title/Description</u>  |
|----------------|-----------------|---|
| 99-0220        | 0               | Reactor Vessel Level Indication System (RVLIS) Train B Plasma Display |
| 99-00437       | 0               | E-88-B Operability Determination                                      |

b. Observations and Findings

No findings were identified and documented through this inspection.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors reviewed the operator work-around titled "Manual fill of the 'C' Reactor Coolant Pump standpipe", to determine whether the functional capability of the related system or human reliability in responding to an initiating event was affected. The inspectors specifically considered whether the workaround affected the operators' ability to implement abnormal or emergency operating procedures.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R19 Post Maintenance Testinga. Inspection Scope

For the post-maintenance tests listed below, the inspectors reviewed the test procedure and either witnessed the testing and/or reviewed test records to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was functional and operable:

| <u>Test Procedure</u> |             |  |                                   |
|-----------------------|-------------|--|-----------------------------------|
| <u>Number</u>         | <u>Rev.</u> | <u>Title</u>   | <u>Related maintenance task</u>   |
| OST-1038              | 10          | "Sampling, Chemical Addition and Main Steam Drain Systems ISI Valve Test Quarterly Interval Modes 1-4" | Repair of Target Rock reed switch |
| FPT-3010              | 8           | "Engine Driven Main Fire Pump Operability Test Weekly Interval Modes: All"                             | Diesel driven fire pump fuel leak |
| OST-1024              | 8           | "On-site Power Distribution Verification Weekly Interval Modes 1-6"                                    | Repair of SII inverter            |

b. Observations and Findings

No findings were identified and documented through this inspection.

1R22 Surveillance Testinga. Inspection Scope

For the surveillance tests listed below, the inspectors examined the test procedure and either witnessed the testing and/or reviewed test records to determine whether the scope of testing adequately demonstrated that the affected equipment was functional and operable:

| <u>Number</u> | <u>Rev.</u> | <u>Title</u>  |
|---------------|-------------|---|
| EST-0221      | 8           | "Type C Local Leak Rate Test of Containment Purge Make-up Penetration (M-57)" |
| OST 1045      | 14          | "ESFAS Train B Slave Relay Test Quarterly Interval Modes 1-4"                 |
| MST- 10143    | 6           | "Steam Generator A Narrow Range Level Loop (L-0474) Operational"              |

|          |    |  |
|----------|----|--|
| OST-1111 | 12 | "Auxiliary Feedwater Pump 1X-SAB Operability Test Monthly Interval Modes 1-3"                                  |
| OST-1122 | 2  | "Train A 6.9 KV Emergency Bus Undervoltage Trip Actuating Device Operational Test and Contact Check Modes 1-6" |

b. Observations and Findings

No findings were identified and documented through this inspection.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the temporary plant modification described in ESR-00378, Revision 0, Temporary Disable of Annunciators ALB-8/5-5A and 5-5B, to determine whether its implementation had adversely affected the operability and/or availability of the affected system. (The disabled annunciators are associated with a standpipe associated with seal leakoff flow from the reactor coolant pump pressure seals.)

b. Observations and Findings

No findings were identified and documented through this inspection.

**Cornerstone: Emergency Preparedness**

1EP1 Drill, Exercise, and Actual Events

a. Inspection Scope

The inspectors observed an emergency response training drill conducted on October 14, to verify licensee self-assessment of classification, notification, and protective-action-recommendation development.

b. Observations and Findings

No findings were identified and documented through this inspection.



## 2. RADIATION SAFETY

### Cornerstones: Public Radiation Safety

#### 2PS2 Radioactive Material Shipping

##### a. Inspection Scope

The inspectors reviewed and observed the licensee's performance in the radioactive material shipping area. Spent fuel handling and shipping records were reviewed to ensure that doses to the public associated with fuel shipments and onsite storage were minimized.

##### b. Observations and Findings

No findings were identified and documented through this inspection.

#### 2PS3 Radiological Environmental Monitoring Program

##### a. Inspection Scope

The inspectors reviewed the licensee's performance in implementing the Radiological Environmental Monitoring Program, as required by Technical Specifications and the Offsite Dose Calculation Manual.

##### b. Observations and Findings

No findings were identified and documented through this inspection.

## 4 OTHER ACTIVITIES

#### 40A2 Performance Indicator Verification

##### .1 Occupational Radiation Safety Performance Indicator Verification

##### a. Inspection Scope

The inspectors verified the Occupational Exposure Control Effectiveness performance indicator (PI) for the Occupational Radiation Safety Cornerstone through September 1999. The inspectors reviewed data reported to the NRC and sampled plant records in the corrective action program.

##### b. Observations and Findings

No findings were identified and documented through this inspection.

.2 Public Radiation Safety Performance Indicator Verification

a. Inspection Scope

The inspectors verified the RETS/ODCM Radiological Effluent Occurrence PI for the Public Radiation Safety Cornerstone through September, 1999. The inspectors reviewed data reported to the NRC, plant calculations, and selected independent offsite dose calculations and observations. The inspectors also sampled related plant records in the corrective action program.

b. Observations and Findings

No findings were identified and documented through this inspection.

.3 Reactor Safety Performance Indicator Verification

a. Inspection Scope

The inspectors verified the PIs listed below through September, 1999.

| <u>Cornerstone</u> | <u>Performance Indicator</u>  |
|--------------------|---|
| Mitigating Systems | Safety System Unavailability, Emergency AC Power<br>Safety System Unavailability, High Pressure Safety Injection<br>Safety System Unavailability, Residual Heat Removal<br>Safety System Unavailability, Auxiliary Feedwater<br>Safety System Functional Failures |
| Barrier Integrity  | Reactor Coolant System Specific Activity<br>Reactor Coolant System Leakage<br>Containment Leakage   |

To verify the performance indicator data, the inspectors reviewed Licensee Event Reports, information contained in the licensee's maintenance-rule database, plant chemistry data, operator logs, and containment leak rate test results.

b. Observations and Findings

During the inspection, several minor errors were identified in the PI data for each safety system unavailability performance indicator submitted to the NRC. The licensee documented those errors in Action Request (AR) 008984. The licensee also found some errors in the calculation of the containment leakage performance indicator. The licensee

documented those errors in AR 008908. Correcting the errors did not result in either a change of PI color or a significant change in the PI value. Since these errors were not significant in that no change in the NRC's action would have resulted from this data, and were not willful this is a minor violation not subject to formal enforcement action.

For the other PIs verified through this inspection, no findings were identified and documented.

#### 40A4 Other

(Closed) Escalated Enforcement Item (EEI) 50-400/99-010-01, 99-010-02, 99-010-03, 99-010-04, and 99-010-05: Access authorization apparent violations. By letter EA 99-273 dated November 23, 1999, access authorization EEIs 50-400/99-010-01, 99-010-02, 99-010-03, and 99-010-04 were dispositioned as four examples of a violation associated with a GREEN issue for the Harris facility. This violation is identified as 50-400/01014, failure to comply with the regulations in 10 CFR Part 73 and the provisions of the Harris Physical Security Program related to the Access Authorization Program. EEI 50-400/99-010-05 was dispositioned as a violation of minor significance and was not subject to formal enforcement action.

#### 40A5 Management Meetings

##### .1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management on November 23, 1999. 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**

NRC

B. Bonser, Chief, Reactor Projects Branch 4  
R. Laufer, Harris Project Manager, NRR

Licensee

D. Alexander, Regulatory Affairs Manager  
A. Barbee, Acting Training Manager  
C. Burton, Director of Site Operations  
B. Clark, Harris Plant General Manager  
J. Cook, Outage Manager  
R. Field, Nuclear Assessment Manager  
T. Hobbs, Acting Operations Manager  
J. Holt, Outage and Scheduling Manager  
G. Kline, Harris Engineering Support Services Manager  
J. Scarola, Harris Plant Vice President  
B. Waldrep, Maintenance Manager  
E. Wills, Environmental & Radiation Control Manager

**ITEMS OPENED, CLOSED, AND DISCUSSED**Opened

|              |     |   |
|--------------|-----|---|
| 50-400/01014 | VIO | Failure To Comply With The Regulations In 10 CFR Part 73 And The Provisions Of The Harris Physical Security Program Related To The Access Authorization Program In Four Examples. |
|--------------|-----|---|

Closed

|                  |     |  |
|------------------|-----|--|
| 50-400/99-010-01 | EEI | Failure To Review And Evaluate Background Information For Persons Granted Unescorted Access (Section 40A4).                |
| 50-400/99-010-02 | EEI | Continuation Of The Granting Unescorted Access Authorization (Section 40A4).   |
| 50-400/99-010-03 | EEI | Failure To Maintain Original Data On Which The Licensee Granted Unescorted AA Authorization For Five Years (Section 40A4). |
| 50-400/99-010-04 | EEI | Failure To Log Safeguards Events Within 24 Hours Of Discovery (Section 40A4).  |
| 50-400/99-010-05 | EEI | Failure To Document Individuals' Training In Accordance With Licensee Requirements (Section 40A4).                         |

Discussed

None