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

Report No.: 50-400/92-07

Licensee: Carolina Power and Light Company
P. O. Box 1551
Raleigh, NC 27602

Docket No.: 50-400 Licensee No.: NPF-63

Facility Name: Harris 1

Inspection Conducted: March 21 - April 17, 1992

Inspectors: _____ 4/21/92
J. Tedrow, Senior Resident Inspector Date Signed

_____ 4/21/92
M. Shannon, Resident Inspector Date Signed

Approved by: _____ 4/22/92
H. Christensen, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Scope:

This routine inspection was conducted by two resident inspectors in the areas of plant operations, radiological controls, security, fire protection, surveillance observation, maintenance observation, followup of onsite events, licensee event reports and licensee action on previous inspection items. Numerous facility tours were conducted and facility operations observed. Some of these tours and observations were conducted on backshifts.

Results:

No violations or deviations were identified.

The licensee declared an Unusual Event due to the failure of the plant process computer, paragraph 5.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*J. Collins, Manager, Operations
*C. Gibson, Manager, Programs and Procedures
*C. Hinnant, General Manager, Harris Plant
*B. Meyer, Manager, Environmental and Radiation Monitoring
*T. Morton, Manager, Maintenance
J. Nevill, Manager, Technical Support
*C. Olexik, Manager, Regulatory Compliance
A. Powell, Manager, Harris Training Unit
H. Smith, Manager, Radwaste Operation
G. Vaughn, Vice President, Harris Nuclear Project
E. Willett, Manager, Outages and Modifications
*W. Wilson, Manager, Spent Nuclear Fuel

Other licensee employees contacted included office, operations, engineering, maintenance, chemistry/radiation and corporate personnel.

*Attended exit interview

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

2. Review of Plant Operations (71707)

The plant continued in power operation (Mode 1) for the duration of this inspection period.

a. Shift Logs and Facility Records

The inspector reviewed records and discussed various entries with operations personnel to verify compliance with the Technical Specifications (TS) and the licensee's administrative procedures. The following records were reviewed: Shift Supervisor's Log; Control Operator's Log; Night Order Book; Equipment Inoperable Record; Active Clearance Log; Jumper and Wire Removal Log; Temporary Modification Log; Chemistry Daily Reports; Shift Turnover Checklist; and selected Radwaste Logs. In addition, the inspector independently verified clearance order tagouts.

The inspectors found the logs to be readable, well organized, and provided sufficient information on plant status and events. Clearance tagouts were found to be properly implemented. No violations or deviations were identified.

b. Facility Tours and Observations

Throughout the inspection period, facility tours were conducted to observe operations, surveillance, and maintenance activities in progress. Some of these observations were conducted during backshifts. Also, during this inspection period, licensee meetings were attended by the inspectors to observe planning and management activities. The facility tours and observations encompassed the following areas: security perimeter fence; control room; emergency diesel generator building; reactor auxiliary building; waste processing building; turbine building; fuel handling building; emergency service water building; battery rooms; electrical switchgear rooms; and the technical support center.

During these tours, the following observations were made:

(1) Monitoring Instrumentation - Equipment operating status, area atmospheric and liquid radiation monitors, electrical system lineup, reactor operating parameters, and auxiliary equipment operating parameters were observed to verify that indicated parameters were in accordance with the TS for the current operational mode.

(2) Shift Staffing - The inspectors verified that operating shift staffing was in accordance with TS requirements and that control room operations were being conducted in an orderly and professional manner. In addition, the inspector observed shift turnovers on various occasions to verify the continuity of plant status, operational problems, and other pertinent plant information during these turnovers.

(3) Plant Housekeeping Conditions - Storage of material and components, and cleanliness conditions of various areas throughout the facility were observed to determine whether safety and/or fire hazards existed.

(4) Radiological Protection Program - Radiation protection control activities were observed

routinely to verify that these activities were in conformance with the facility policies and procedures, and in compliance with regulatory requirements. The inspectors also reviewed selected radiation work permits to verify that controls were adequate.

(5) Security Control - The performance of various shifts of the security force was observed in the conduct of daily activities which included: protected and vital area access controls; searching of personnel, packages, and vehicles; badge issuance and retrieval; escorting of visitors; patrols; and compensatory posts. In addition, the inspector observed the operational status of closed circuit television monitors, the intrusion detection system in the central and secondary alarm stations, protected area lighting, protected and vital area barrier integrity, and the security organization interface with operations and maintenance.

(6) Fire Protection - Fire protection activities, staffing and equipment were observed to verify that fire brigade staffing was appropriate and that fire alarms, extinguishing equipment, actuating controls, fire fighting equipment, emergency equipment, and fire barriers were operable.

The inspectors found plant housekeeping and component material condition to be good. The licensee's adherence to radiological controls, security controls, fire protection requirements, and TS requirements in these areas were satisfactory.

c. Review of Nonconformance Reports

Adverse Condition Reports were reviewed to verify that TS were complied with, corrective actions and generic items were identified, and items were reported as required by 10 CFR 50.72 and 10 CFR 50.73.

No violations or deviations were identified.

3. Surveillance Observation (61726)

Surveillance tests were observed to verify that approved procedures were being used; qualified personnel were conducting the tests; tests were adequate to verify equipment operability; calibrated equipment was utilized; and TS requirements were followed.

The following tests were observed and/or data reviewed:

- OST-1029, Containment Penetration Outside Isolation Valve Verification
- MST-I0127, Main Steam Line Pressure, Loop 1 (P-0476) Operational Test
- MST-I0417, Relay Actuation Logic Test for Containment Area Radiation Monitors
- OST-1092, 1B-SB RHR Pump Operability Quarterly Interval

The performance of these procedures was found to be satisfactory with proper use of test equipment, necessary communications established, notification/authorization of control room personnel, and knowledgeable personnel performed the tasks. The inspectors verified that containment isolation valves located outside of the reactor containment building, which do not automatically close on containment isolation signals, were listed in procedure OST-1029 to be verified monthly in accordance with TS 4.6.1.1.a. The procedure was found to be satisfactory.

No violations or deviations were identified.

4. Maintenance Observation (62703)

The inspector observed/reviewed maintenance activities to verify that correct equipment clearances were in effect; work requests and fire prevention work permits, as required, were issued and being followed; quality control personnel were available for inspection activities as required; and TS requirements were being followed. Maintenance was observed and work packages were reviewed for the following maintenance activities:

- Replacement of damper DG-D4SA-1 actuating device in accordance with procedure PIC-I059, Calibration of ITT Hydromotor Damper Actuator Models NH-92, 94, and 96.
- Replacement of the AMSAC programmer and post maintenance testing in accordance with procedures MPT-I0049, ATWS Mitigation System Actuation Circuitry Functional Tests, and MPT-I0119, Instructions for Reprogramming AMSAC Set Point Constants.
- Replacement of two incore detectors in accordance with procedure CM-I0102, Incore Detector Procedure.
- Troubleshooting indication problems with the "A" and "C" MSIV bypass valves.

- Replacement of bearing inserts for normal control room ventilation unit AH-15-1A.

Good technical support involvement was evident during the AMSAC programmer replacement. The incore detector replacement work occurred inside the containment building. The inspectors reviewed the pre-job ALARA and work briefings for this job and found them to be worthwhile. Replacement of the damper actuators was a long term project and was initially discussed in NRC Inspection Report 50-400/89-34 (IFI 400/89-34-05). The licensee is making progress in the effort to replace the actuators with those refurbished by the manufacturer and has seven more damper actuators to modify. The licensee's progress in this regards has been satisfactory.

No violations or deviations were identified.

5. Followup of Onsite Events (93702)

At 5:19 a.m. on April 14, 1992, the licensee declared an Unusual Event due to the inability of the plant process computer to perform its function for a time period in excess of four hours. At 1:25 a.m. control room operators noticed that the computer time was not updating correctly which indicated that the computer had been inoperable since 1:19 a.m. Computer technicians were called in to troubleshoot the problem but were unable to restore the system to operable status until 8:45 a.m. on April 14. At 5:19 a.m. an Unusual Event was declared in accordance with the licensee's emergency plan.

During the last month several hardware/programming problems have occurred with the plant computer. The computer has been inoperable on six different occasions and only partially operable on other occasions. On April 4, 1992, the computer was restored to operable status just two minutes before an Unusual Event would have been declared. Recently two LERs (LER 91-21 and LER 92-02) have been issued regarding computer problems which led to violations of the licensee's technical specifications.

Due to a lack of confidence in the system which arose as a result of the previous system failures, operators were already performing manual calculations/monitoring of the parameters measured by the plant computer which included: control rod position checks, axial flux difference calculations, meteorological instrument checks, pressurizer safety valve position checks, reactor cavity sump leakage calculations, and subcooling margin calculations. As part of the corrective action associated with LER 92-02, the

licensee has been working with the computer system vendor to improve system reliability. Plans currently include upgrading the system disk drives and the installation of an on-line calorimetric program. Due to the frequency of the computer problems, licensee management was encouraged to expedite the computer reliability improvements.

No violations or deviations were identified.

6. Review of Licensee Event Reports (92700)

The following LER was reviewed for potential generic impact, to detect trends, and to determine whether corrective actions appeared appropriate. Events that were reported immediately were reviewed as they occurred to determine if the TS were satisfied. The LER was reviewed in accordance with the current NRC Enforcement Policy.

(Open) LER 91-16: This LER reported the lifting of several component cooling water relief valves during a pump start. This event was previously discussed in NRC Inspection Report 50-400/91-21. The CCW system is presently being operated with cooling water flow initiated through an RHR heat exchanger thereby maintaining system pressure at approximately 95 psig. Although this operation does not conflict with that described in the FSAR, plant operations prefers to operate this system with cooling water isolated to the RHR heat exchangers. If system flow is decreased, then system pressure increases and the pressure surge which occurs during a second CCW pump start could exceed the setpoint on the relief valves currently installed in the system with potential system inventory loss. To maintain system pressure at 95 psig with the RHR heat exchangers isolated, flow would have to be increased by increasing the flow through the spent fuel pool heat exchangers. Unfortunately, this system alignment would create potential pump runout conditions such as those described in LER 90-19.

The system modifications discussed in NRC Inspection Report 50-400/92-04 to raise the setpoint for the excess letdown heat exchanger relief valve and deletion of several other system relief valves with flow orifices did not return the system to the preferred operating lineup. The licensee is pursuing additional system modifications.

7. Licensee Action on Previously Identified Inspection Findings (92702 & 92701)

(Closed) Violation 400/91-27-01: Failure to properly implement an alarm response procedure.

The inspectors reviewed and verified completion of the corrective actions listed in the licensee's response letter dated February 24, 1992. The licensee has reviewed this violation with operating personnel stressing the importance of operator attentiveness during control room shift turnovers. Important switches on the main control board were also marked to clearly indicate switch position to facilitate verification.

(Closed) Violation 400/91-27-03: Failure to perform TS required audits at the required intervals.

The inspectors reviewed and verified completion of the corrective actions listed in the licensee's response letter dated February 24, 1992. The four missed audits have been completed as required. The Nuclear Assessment Department has also initiated a new policy requiring audits be completed, including briefings, with no extensions applied.

(Closed) Violation 400/91-18-02: Failure to approve and forward TS required audits within 30 days.

The inspectors reviewed and verified completion of the corrective actions listed in the licensee's response letter dated October 2, 1992. Four recently performed audits were tracked and it was found that the audits were approved and forwarded to corporate management within 30 days as required.

(Closed) URI 400/91-24-05: Failure to maintain heat trace systems on various TS monitors.

The inspectors reviewed the licensee's evaluation for heat trace on TS monitors RM-3502A, RM-3509, and the containment hydrogen monitors. The evaluation concluded that heat trace was not required for these monitors and therefore this item is considered to be closed.

8. Exit Interview (30703)

The inspectors met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on April 20, 1992. During this meeting, the inspectors summarized the scope and findings of the inspection as they are detailed in this report. The licensee representatives acknowledged the inspector's comments and did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. Dissenting comments were not received from the licensee.

9. Acronyms and Initialisms

ALARA	-	As Low As Reasonably Achievable
AMSAC	-	ATWS Mitigation System Actuation Circuitry
ATWS	-	Anticipated Transient Without Scram
CCW	-	Component Cooling Water
CFR	-	Code of Federal Regulations
FSAR	-	Final Safety Analysis Report
IFI	-	Inspector Follow-up Item
LER	-	Licensee Event Report
MSIV	-	Main Steam Isolation Valve
NRC	-	Nuclear Regulatory Commission
PSIG	-	Pounds per Square Inch Gage
RHR	-	Residual Heat Removal
TS	-	Technical Specification