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

Report No.: 50-400/92-04

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

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

Facility Name: Harris 1

Inspection Conducted: February 15 - March 20, 1992

Inspectors: M M Glasman 4/10/92
for J. Tedrow, Senior Resident Inspector Date Signed

M M Glasman 4/10/92
for M. Shannon, Resident Inspector Date Signed

Approved by: H. Christensen 4/10/92
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, safety system walkdown, review of PNSC activities, review of spent fuel handling activities, design changes and modifications and review of licensee event reports. Numerous facility tours were conducted and facility operations observed. Some of these tours and observations were conducted on backshifts.

Results:

Two violations were identified: Failure to properly identify and correct deficiencies as required by 10 CFR 50, Appendix B, Criterion XVI, paragraphs 2.a.(1) and 9.b; Failure to use a qualified person for the performance of independent verifications, paragraph 3.a.

Housekeeping improvement was needed in several plant areas, paragraph 2.b.(3).

ALARA planning for the outage work and Reactor Coolant Pump (RCP) oil addition was considered to be a strength, paragraph 2.b.(4).

The RAB area radiation levels have increased significantly due to Residual Heat Removal (RHR) shutdown cooling operation, paragraph 2.b.(4).

Detailed planning and use of mockups for maintenance activities was considered to be a strength, paragraph 4.a.

Personnel training regarding the use of freeze plugs was considered thorough, paragraph 4.c.

Licensee management has reevaluated spent fuel crud cleanup efforts and decided to leave the crud on the bottom of the pools, paragraph 7.

The conservative decision to shutdown the plant and repair boric acid leakage reflected management's support for the control of boric acid corrosion, paragraph 8.

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
R. Richey, Vice President, Harris Nuclear Project
*H. Smith, Manager, Radwaste Operation
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

NRC Personnel

*D. Roberts, Resident Inspector, Intern

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

2. Review of Plant Operations (71707)

The plant began this inspection period in power operation (Mode 1). On March 7 a power reduction was commenced and oil was added to the A and B reactor coolant pumps. The unit was then taken off-line at 4:18 a.m. to perform repairs to valve 1RC-22, RTD bypass manifold isolation valve (see paragraph 8 for more details on the plant outage). The 271 days of continuous plant operation on line set a new plant record. Following completion of valve repairs, a plant heatup was commenced and the plant was taken to hot standby (Mode 3) at 7:38 a.m. on March 11. A reactor startup was performed on March 12 and the reactor was taken critical at 12:20 p.m. The plant was returned to power operation at 7:24 p.m. on March 12 where it remained 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; Outage Shift Manager'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 generally provided sufficient information on plant status and events. Clearance tagouts were found to be properly implemented.

(1) During control room observations on February 20, 1992, the inspectors noticed that the control room HVAC system was aligned for emergency recirculation. This situation occurred as a result of a control room isolation signal from a failed radiation monitor. The inspectors noticed, however, that alarms were lit on the control board indicating that the required positive pressure in the control room was not being maintained by this system. TS 4.7.6.d.3 requires a 1/8 inch water gauge of positive pressure. This matter was reported to operating personnel who indicated that efforts were currently in progress to investigate the cause for the inadequate positive pressure.

The following day the inspectors were informed of the results of the investigation. An access door to the ventilation recirculation fan unit R-2B was found partially open which allowed enough air leakage from the unit to prevent adequate pressurization of the control room. The inspectors were further informed that it was a routine practice for auxiliary operators to open these access doors during rounds to check the condition inside the ventilation unit. Apparently the door was not properly closed following the last inspection. The inspectors determined that no control room log entries or ACRs had been generated. Procedure PLP-002, Corrective Action Program, section 5.2, requires an ACR or other sub-program document be initiated for identified deficiencies. The inspector considered the documentation of the problem to be inadequate for determining appropriate operability and potential corrective actions. Upon notification of this finding, licensee personnel initiated an ACR to document the ventilation problem. On March 2 the door for control room ventilation unit R-2A was also found to be inadequately shut. The door was resecured and a log entry made in the shift foreman's log.

In NRC Inspection Report 50-400/92-02, the failure of operators to properly identify deficiencies for appropriate corrective action was identified and a non-cited violation (NCV 400/92-02-01) was issued. The occurrence of the inadequate operation of the control room ventilation system deficiency indicates that additional licensee management attention is needed in this area. The failure to properly document the deficiency in the control

room emergency ventilation system is contrary to the requirements of 10 CFR 50, Appendix B, Criterion XVI and is considered to be a violation.

Violation (400/92-04-01): Failure to properly identify and correct deficiencies as required by 10 CFR 50, Appendix B, Criterion XVI.

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; reactor containment 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.

The inspectors found plant housekeeping and component material condition to be satisfactory. However, the inspectors noted that cleanliness in certain plant areas had deteriorated. Specifically, the charging/safety injection pumps continuously exhibit oil leakage even after repeated maintenance. Two motor operated valves (1CS-217 and 1CS-291) also exhibited oil leakage from the valve actuator. Fittings on two sodium hydroxide addition tank level transmitters (LT-1CT-7150A and LT-1CT-7166B) also showed signs of leakage. The containment spray pump and

RHR pump rooms have ground water intrusion problems and water has been observed to collect at low points on the floor. Although these problems were identified by licensee personnel, and appropriate work tickets were written to correct these problems, corrective maintenance has not yet been performed.

(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.

The inspector attended the pre-job ALARA briefing for the A and B reactor coolant pump motor oil addition job and reviewed the RWP and previous radiation surveys for the areas inside the containment building where the work was to be performed. This was the second time a containment entry had to be made to add oil to a reactor coolant pump. Previously in October 1991, an entry was made to add oil to the "B" reactor coolant pump motor. Again licensee management utilized mockup training on a spare motor stored in the spare parts warehouse. Lessons learned from the previous entry were utilized to refine the techniques for the current oil addition plan. These efforts were very successful in limiting personnel exposure received by plant personnel.

During the forced outage, the licensee faced a challenge in keeping radiation exposure to a minimum while repairing valves 1RC-22 and 1RC-953. These valves were located near the "C" reactor coolant loop where the radiation exposure rates were high. However, through a combination of effective pre-job planning, optimization of worker stay-time, and coordination of work efforts between different organizations, the licensee kept exposure levels to a minimum. The biggest contributor to the reduced exposure levels was the pre-job planning which included the use of lessons learned from a similar outage in May 1990. The licensee also made use of a videotape of the work area which allowed the licensee to plan the job without having to make repeated entries into the hazardous area. This effective use of ALARA planning was considered a strength.

The plant was faced with another radiological challenge as a result of operations during the outage. Initially, the licensee planned to repair valves 1RC-22 and 1RC-953 while in Mode 5. based on this the licensee planned a chemical cleaning process designed to loosen corrosion products in the RCS. This process would normally be followed by a flushing process (while in Mode 5) to remove these products from the primary system. During the outage, licensee management decided that the valves could be repaired while in Mode 4. Since the flushing could not occur in

Mode 4, the RHR system (while in shutdown cooling) retained a significant amount of the highly radioactive corrosion products. As a result, radioactivity in the RHR system increased significantly when corrosion products settled out in the system following its return to a normal standby status. This condition presents a new challenge to the plant because several areas of the RAB have been upgraded to high radiation areas. The licensee took steps to conspicuously identify/post affected areas. The licensee has no definite plans to reduce the radioactivity in the RHR system before the fall 1992 outage. The inspectors will continue to monitor the licensee's activities in this area.

(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 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 (ACRs) were reviewed to verify the following: TS were complied with, corrective actions as identified in the reports were accomplished or being pursued for completion, generic items were identified and reported, and items were reported as required by the TS.

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-1506 Reactor Coolant System Isolation Valve Leak Test
- MST-I0135 Main Steam Feedwater Flow Loop 1 Operational Test
- MST-I0145 Steam Generator A Narrow Range Level Operational Test
- MST-I0146 Steam Generator B Narrow Range Level Loop Operational Test
- EPT-159 ASME Section XI, Article IWB-5000 102 Percent Hydrostatic Test
- EPT-183 1CS-744 SI Alternate Miniflow Relief Valve Relief Pressure Test
- EPT-184 1CS-755 SI Alternate Miniflow Relief Valve Relief Pressure Test

In general, the performance of these procedures was found to be satisfactory with proper use of test equipment, necessary communications established, proper pre-test briefings performed, and knowledgeable personnel performed the tasks.

a. The inspector observed the system restoration and verification for the charging alternate miniflow relief valve test performed in accordance with section 7.2 of procedures EPT-183 and EPT-184. This section verified that several system drain valves and test connections (1CS-745, 1CS-756, 1CS-753, and 1CS-754) were returned to the normal system lineup. The initial positioning of these valves was performed by plant operating personnel. The independent verification of valve position was performed by the system test engineer. The inspector also observed that the valves had been positioned to the proper positions.

   Since system engineers were not routinely utilized for independent verification functions, the inspector questioned the test engineer to ascertain his qualifications. He stated that it was a common practice for system engineers to perform this task and that he had received appropriate training. Licensee management stated that although system engineers receive some training, they were not qualified to perform independent verification of components returned to service but were allowed to check valve positions inside the test boundaries during the test. In contrast, licensee operating personnel receive specialized training in various techniques of checking valve positions and the special requirements regarding independent verification. The licensee considered the performance of independent verification by the system engineer to be inappropriate.

   The licensee's administrative controls regarding performance of independent verifications are specified in procedure PLP-702,

Independent Verification. Section 5.3.3 of this procedure lists the guidelines to be applied in determining which individuals may perform independent verifications. These guidelines are very general in nature and simply require that only qualified personnel, as designated by their foreman, be allowed to perform independent verification. The utilization of a test engineer for the performance of the independent verifications in section 7.2 of procedures EPT-183 and EPT-184 is contrary to the requirements of procedure PLP-702 and is considered to be a violation of TS 6.8.1.a.

Violation (400/92-04-02): Failure to use a qualified person for the performance of independent verifications.

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 (WR/JO) activities:

- Disable the "B" digital rod position indication cabinet detector encoder card for control rod H-14 in accordance with temporary modification PCR-6264, DRPI Rod H-14 Half Accuracy.

- Troubleshoot failure of electrical distribution breaker 1A-3 to properly close.

- Addition of oil to the "A" and "B" reactor coolant pump motors.

- Replace regulator on air operated auxiliary feedwater valve 1AF-102 in accordance with procedure MPT-I0002, Ralph A. Hiller Model 12SA-A029 Valve Actuator, and post-maintenance testing in accordance with procedure OST-1077, Auxiliary Feedwater Valves Operability Test Quarterly Interval.

- Replace "C" phase main transformer oil coolant pump.

- Replace rotating element for the "A" main feedwater pump in accordance with procedure CM-M0132, Main Feed Pump Disassembly Inspection and Reassembly.

- Rebuild hydraulic operator for main steam power operated relief valve 1MS-58 in accordance with procedures CM-M0186, Paul Monroe Main Steam Power Operated Relief Valve Operator Fill and Bleed Procedure, and CM-M0188, Main Steam Power Operated Relief Valve Operator Disassembly, Maintenance and Reassembly.

In general, the maintenance observed was performed satisfactory. Appropriate procedures were utilized and proper return to service of affected components was independently verified by the craft.

a. The inspector attended the pre-job briefing for the main transformer work. This work was critical because it was performed with the plant on-line and with the transformer remaining energized. The work was performed by the licensee's transmission department. The licensee's pre-planning for this work was thorough and included the following attributes:

- The work activity and outline of steps was discussed and approved by the PNSC.

- Several critical steps in the process were specified to be independently verified.

- Plant auxiliary loads were placed on the start-up transformers in the event of a possible turbine trip.

- The fault pressure relay associated with the transformer coolant pressure was disabled during maintenance thereby avoiding spurious switchyard breaker and generator output breaker trips.

- A fire truck and fire watch were positioned nearby to combat potential electrical fires.

- An operator was assigned to be in constant contact with the control room via radio if a problem should develop.

- Practice dry-runs were performed on the spare transformer prior to performing work on the "C" main transformer.

The licensee's detailed planning and use of mockups were very effective in accomplishing the reactor coolant pump oil addition and transformer repairs without mishap and are considered to be strengths in the maintenance functional area.

b. Circuit breaker 1A-3 (breaker 108) experienced reoccurring closing problems during this inspection period. The breaker supplies power from the unit auxiliary transformer to station unit auxiliary bus 1A. Non-safety related plant loads are supplied from this bus. On a loss of the main turbine/generator, breaker 108 is required to open and auxiliary bus 1A will automatically switch to the startup transformer as a power source via breaker 107. The licensee's troubleshooting of this problem identified a structural problem in the breaker cubicle which allows the breaker secondary disconnects to disengage and prevent breaker closure. A plant modification (PCR-6282, Cubicle 1A-3 Breaker Closing Problem) has been initiated to correct the problem. The inspectors considered this action to be appropriate.

c. In conjunction with the observation of the CCW modification, PCR-5748, the licensee's administrative controls regarding the use of freeze plugs was also performed. The inspectors reviewed the licensee's procedures for installing freeze plugs in piping, training records of personnel trained on the use of freeze plugs, the freeze plug training lesson plan, and visited the hands-on training facility for freeze plug installation. Guidance provided in NRC Inspection Manual, Part 9900 was utilized during this inspection.

Freeze plugs were usually installed by the plant services organization. For the CCW modification, several good pre-evolution planning practices were observed, as discussed in NRC Inspection Report 50-400/92-02. However, the procedure utilized for installing the freeze plugs, MMP-012, Hydrostatic and Pneumatic Testing of Piping Systems, lacked several important features including freeze plug temperature monitoring specifics, nitrogen source requirements, and contingency planning. The good pre-planning for this work offset the shortcomings of the procedure.

The licensee's maintenance organization also had a separate procedure for installing freeze plugs. Recently, these procedures were combined into a single procedure for all work groups to use when installing freeze plugs. The new procedure incorporated industry lessons learned from events at other nuclear stations. The inspectors found that the recently revised procedure CM-M0169, Freeze Seal Procedure, specified appropriate steps, precautions, and limitations for installing freeze plugs. The procedure also incorporated most of the guidance provided in NRC Inspection Manual Part 9900. The inspectors noticed that the new procedure did not specifically address communications requirements between the control room and the personnel performing the work. The extent of communication was left up to the desires of the operating shift to specify. The inspector considered a more formal requirement to be appropriate. The new procedure also lacked specific provisions for monitoring nitrogen flow. The licensee considered observation of the gaseous plume and a level indicated in the jacket annulus to be sufficient. The inspector informed the licensee that this might not be sufficient to positively verify nitrogen flow which is necessary to maintain freeze plug integrity. The new procedure specified contingency actions if the seal failed. This action would be specified for each individual seal and would reference the appropriate emergency procedure for the loss of the affected system. The inspector discussed these observations with the licensee who stated that appropriate procedure revisions would be considered.

The licensee has trained one crew of plant services and three plant maintenance crews on the use and installation of freeze seals using the new procedure. The inspectors found this training to be thorough.

No violations or deviations were identified.

5. Safety Systems Walkdown (71710)

The inspector conducted a walkdown of the emergency service water system to verify that the lineup was in accordance with license requirements for system operability and that the system drawing and procedure correctly reflected "as-built" plant conditions.

The general material condition of the system was found to be satisfactory except for some general corrosion found on the yokes of several instrument root and drain valves. Additionally, the inspector noted a discrepancy between the system drawing and the as-built plant conditions in that the drawing reflected only one of two valves in series on a drain line. These findings were referred to the system engineer for corrections. The deficiencies did not affect system operability.

No violations or deviations were identified.

6. Review of Plant Nuclear Safety Committee Activities (40500)

The inspectors attended selected PNSC meetings to observe committee activities and verify TS requirements with respect to committee composition, duties, and responsibilities. Minutes from these meetings were also reviewed to verify accurate documentation. The inspector considered the conduct and documentation of these meetings to be satisfactory. During the PNSC meeting on February 18, maintenance activities to repair a coolant pump for the "C" phase main transformer were discussed. Specific guidelines were presented which described the replacement effort and potential independent verification steps were identified. The committee decided that this work could be performed safely with the plant online. No violations or deviations were identified.

7. Review of Spent Fuel Handling Activities (71707)

As previously mentioned in NRC Inspection Report 50-400/91-22 and 50-400/91-01, the licensee was in the process of cleaning up the spent fuel pools and transfer canals utilizing an underwater filter and vacuum unit. During this reporting period, licensee management met with the inspectors to discuss future plans on fuel shipments and cleanup of the crud located on the bottom of the spent fuel pools.

Due to significant area radiation levels associated with the underwater filters and potentially high personnel exposures when handling/changing out the filters, licensee management has reevaluated the potential nuclear safety and radiological concerns between the crud cleanup and the alternative consequences of leaving the crud on the bottom of the pools, and has decided to leave the crud in the pools. Based on the tendency of the crud to remain on the bottom of the pools unless agitated significantly, and little intersystem communication between the spent fuel and RC systems during refueling operations, the licensee believes the crud

hazard can be administratively controlled until plant decommissioning. This action would allow time for the natural decay of radioactive isotopes before any cleanup effort which would significantly reduce personnel exposure. Licensee personnel have performed an accident analysis assuming a maximum crud loading in the spent fuel pools. The licensee plans to maintain the crud concentration within this analysis and does not plan to process spent fuel system water with the radwaste system thereby minimizing the effect on other plant systems. Furthermore, most work activities which generated the radiological problems in the past for pool draindown, rack installation, and weld repairs, have been completed. Only minor reracking activities are planned in the future.

Although licensee management philosophy addressed previous NRC concerns, specific procedural precautions have not been implemented. More formal administrative controls for minimizing the spread of the crud hazard were recommended.

8. Short Duration Outage to Repair RTD Bypass Manifold Isolation Valve (71707)

On February 29, 1992, a power reduction was performed to secure the "A" main feedwater pump. Operating personnel noticed excessive vibrations on the pump balancing flow line. While the plant was at a reduced power level, licensee management decided to initiate repairs to the "C" main transformer and to add oil to "A" and "B" reactor coolant pump motors.

During the oil addition to the reactor coolant pumps, plant personnel noticed evidence of boric acid leakage from valve 1RC-22, inside containment. Licensee management conservatively decided to shutdown the plant and effect repairs even though the leakage was well within TS limits. An additional valve (1RC-953) adjacent to 1RC-22 was also leaking. The plant was taken to hot shutdown (Mode 4) to effect repairs. Both valves were repaired by installing a valve cap over the valve stem. Following this maintenance work, a plant heatup and startup were performed and the plant resumed power operation on March 12. The inspectors witnessed the shutdown, cooldown, heatup, and startup activities and also were present when the reactor was taken critical. Implementation of the following plant procedures was observed:

- GP-002 Normal Plant Heatup from Cold Solid to Hot Subcritical Mode 5 to Mode 3.
- GP-004 Reactor Startup (Mode 3 to Mode 2).
- GP-006 Normal Plant Shutdown from Power Operation to Hot Standby 1 to Mode 3.
- GP-007 Normal Plant Cooldown (Mode 3 to Mode 5).

This shutdown indicated licensee management's support for the control of boric acid corrosion. Prompt repair of the leaking valves, instead of waiting to the next refueling outage, was prudent and prevented unnecessary repairs which could have arisen from the effects of boric acid corrosion. Outage planning was detailed and properly implemented. Operation of the plant to achieve the necessary status was satisfactory. However, a rod position indication problem which occurred during both shutdown and startup operations caused a slight delay in reactor startup activities on March 12. The problem, which affected position indication for control rod B-10 at the 24-step elevation, had originally caused the "RPI Urgent Alarm" to annunciate on March 7 during plant shutdown. At that time, operators did not troubleshoot the occurrence or initiate a work request but continued on with the plant shutdown. When the event reoccurred during the plant startup, a work request was generated as required by Annunciator Panel Procedure, APP-ALB-013, Main Control Board. Such actions on March 7 would have eliminated the delay when the problem recurred during startup.

No violations or deviations were identified.

9. Design Changes and Modifications (37828)

Installation of new or modified systems were reviewed to verify that the changes were reviewed and approved in accordance with 10 CFR 50.59, that the changes were performed in accordance with technically adequate approved procedures, that subsequent testing and test results met acceptance criteria or deviations were resolved in an acceptable manner, and that appropriate drawings and facility procedures were revised as necessary. This review included selected observations of modifications and/or testing in progress. The following modifications/design changes were reviewed:

- PCR-6265 Leak Repair of 1RC-22
- PCR-6273 Leak Repair of 1RC-953
- PCR-5748 CCW Thermal Relief Valve Deletion
- PCR-5741 CCW From SFP Coolers Low Flow Alarm, Excess Letdown Design Pressure Uprate.

Modifications PCR-6265 and PCR-6273 installed valve caps over the valve stems and removed the associated valve operating handles. The valves were verified to be open and then the caps were welded on to prevent leakage. The performance of these modifications was found to be satisfactory.

a. Modification PCR-5741 raised the relief setpoint for the excess letdown heat exchanger relief valve to allow higher CCW system operating pressure. This modification, in conjunction with PCR-5748, was performed to allow normal CCW operation at higher pressures

without lifting system relief valves as described in LER 90-18. Subsequent modeling of the CCW system by licensee design engineers revealed that the completed modifications would still not suffice to allow normal system operations and that additional plant modifications would be necessary. The licensee is presently evaluating design change alternatives. Although these modifications removed several system relief valves which will minimize potential inventory loss from the CCW system during pressure spike transients, the inspectors considered the scope of the modifications to be insufficient to achieve the desired goal which was to return the system to a normal configuration.

b. During a review of control room drawings on February 28, 1992, the inspector noticed that drawings 2165-S-1320 and 2165-S-1322 did not depict the modifications which had been performed on the component cooling water system to replace heat exchanger relief valves with small flow orifices (PCR-5748). Due to the large extent of this modification, the various CCW heat exchangers were modified in stages. The two RHR and BRS heat exchanger CCW modifications were field completed and the system turned over as functional to plant operations on November 20, December 4, and January 16, respectively. Usually plant drawings are updated with modification status by use of red-lines until final drawing revisions are produced. A review of the clearance center drawings revealed similar discrepancies.

The discrepancies were discussed with plant operations management personnel. Their investigation revealed that the drawings had been annotated with the correct modification information but subsequent drawing revisions had been produced which replaced the red-lined drawings. Although the replacement drawings included previous plant modifications to the system, the relief valve replacement modification had not yet been included. This detail was overlooked by the operations production assistants when replacing the drawings and the red-line information was not included on the new drawing revisions. Licensee personnel previously recognized the potential for this problem to occur and prepared a procedure revision to require a comparison between old red-lined drawings and new revisions to verify that all red-line information is included on new drawings. As of February 28, the procedure revision had not been implemented.

A previous problem with failure to update plant drawings for modified systems was identified in NRC Inspection Report 50-400/91-09 in May 1991, which resulted in a violation (400/91-09-01). The licensee's corrective action for this violation included detailed procedural guidance for the operations production assistants and an audit process to review the red-lined drawings quarterly and at the completion of major outages. The inspector requested the last audit performed but was informed by the licensee that the audits had not been performed as required. The licensee's corrective actions were considered incomplete and inadequate. Failure to perform comprehensive and complete corrective action is contrary to the

requirements of 10 CFR 50, Appendix B, Criterion XVI, and is considered to be an additional example of the violation discussed in paragraph 2.a.(1) of this report.

When informed of this finding, licensee personnel completed an audit of the drawings and found numerous additional errors.

10. Review of Licensee Event Reports (92700)

The following LERs were 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. LERs were reviewed in accordance with the current NRC Enforcement Policy.

a. (Open) LER 92-02: This LER reported the undetected failure of the plant computer which resulted in a violation of the TS. The licensee has corrected the specific problem with the operation of the computer program and is planning computer upgrades to increase reliability. Also, operating procedures will be enhanced to provide additional details on computer TS related functions. The LER will remain open pending completion of the computer upgrade and procedure enhancements.

b. (Closed) LER 92-03: This LER reported that the hot leg recirculation switchover time specified in plant emergency procedures and the FSAR was incorrect. This matter was identified by the nuclear steam system supplier during the review process for a proposed technical specification change. The licensee has revised the emergency procedures and has approved a revision to the FSAR to reflect the correct time.

11. Exit Interview (30703)

The inspectors met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on March 20, 1992. During this meeting, the inspectors summarized the scope and findings of the inspection as they are detailed in this report, with particular emphasis on the violations. 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.

Item Number	Description and Reference
400/92-04-01	Violation - Failure to properly identify and correct deficiencies a required by 10 CFR 50, Appendix B, Criterion XVI, paragraph 2.a.(1) and 9.b.

400/92-04-02 Violation - Failure to use a qualified person for performance of independent verifications, paragraph 3.a.

12. Acronyms and Initialisms

ACR	-	Adverse Condition Report
AFW	-	Auxiliary Feedwater
ALARA	-	As Low As Reasonably Achievable
ASME	-	American Society of Mechanical Engineers
BRS	-	Boron Recovery System
CCW	-	Component Cooling Water
CFR	-	Code of Federal Regulations
DRPI	-	Digital Rod Position Indication
EPT	-	Engineering Performance Test
FSAR	-	Final Safety Analysis Report
HVAC	-	Heating, Ventilation and Air Conditioning
LER	-	Licensee Event Report
MPT	-	Maintenance Performance Test
MST	-	Maintenance Surveillance Test
NCV	-	Non-Cited Violation
NRC	-	Nuclear Regulatory Commission
OST	-	Operations Surveillance Test
PCR	-	Plant Change Request
PLP	-	Plant Program Procedure
PNSC	-	Plant Nuclear Safety Committee
RAB	-	Reactor Auxiliary Building
RCP	-	Reactor Coolant Pump
RCS/RC	-	Reactor Coolant System
RHR	-	Residual Heat Removal
RTD	-	Resistance Temperature Detector
RWP	-	Radiation Work Permit
SFP	-	Spent Fuel Pool
SI	-	Safety Injection
TS	-	Technical Specification
WR/JO	-	Work Reque@st/Job Order