



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

Report No.: 50-400/92-27

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: October 24 - November 20, 1992

Inspectors:	<u>J. Tedrow, Senior Resident Inspector</u>	<u>12/2/92</u> Date Signed
	<u>M. Shannon, Resident Inspector</u>	<u>12/7/92</u> Date Signed
Approved by:	<u>H. Christensen, Section Chief</u> Division of Reactor Projects	<u>12/8/92</u> Date Signed

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, design changes and modifications, outage activities, refueling activities, safety system walkdown, 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:

One violation with three examples was identified: Failure to properly establish/implement plant procedures, paragraphs 2.c.(2), 3.a, and 3.b.

Two non-cited violations were identified: Failure to obey a radiography posting, paragraph 2.c.(1); and failure to properly move fuel in accordance with fuel transfer data sheets, paragraph 8.b.

A weakness was identified regarding implementation of the equipment clearance program, paragraph 2.a.

A weakness was also identified regarding temporary test procedure adequacy, paragraph 3.c and 5.

Another weakness was identified regarding the reviews performed for the fuel transfer data sheets, paragraph 8.a.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. Collins, Manager, Operations
- *J. Cribb, Manager, Quality Control
- C. Gibson, Manager, Programs and Procedures
- *C. Hinnant, General Manager, Harris Plant
- D. Knepper, Project Engineer, Nuclear Engineering Dept.
- B. Meyer, Manager, Environmental and Radiation Monitoring
- *T. Morton, Manager, Maintenance
- J. Moyer, Manager, Project Assessment
- *J. Nevill, Manager, Technical Support
- C. Olexik, Manager, Regulatory Compliance
- A. Powell, Manager, Harris Training Unit
- *W. Seyler, Manager, Outages and Modifications
- H. Smith, Manager, Radwaste Operation
- *G. Vaughn, Vice President, Harris Nuclear Project
- 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 began this inspection period in the defueled condition. On October 30, 1992, refueling operations (Mode 6) were commenced. The core was reloaded into the reactor vessel at 5:19 a.m. on November 3. At 10:55 p.m. on November 12, the reactor vessel head studs were tensioned and the plant entered the cold shutdown (Mode 5) condition. The plant remained in cold shutdown 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; Outage Shift Manager's Log; Control Operator's Log; Night Order Book; Equipment Inoperable Record; Active Clearance Log; Grounding Device 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.

Licensee personnel identified several deficiencies related to equipment clearances during this refueling outage. Although the deficiencies were all minor, they involved several different aspects of generating and removing equipment clearances including: miscommunication, improper clearance tag installation, improper initial positioning of tagged components, subsequent operation of tagged components, removal of tagged components from a system, and premature clearance removal prior to work completion. Although none of these deficiencies resulted in safety-related equipment damage or personnel injury, they indicated a potential problem which could have serious consequences if not corrected. The inspector identified six different ACR's related to equipment clearance problems and questioned licensee personnel if an adverse trend had been identified. Although an adverse trend had not previously been identified, licensee personnel reviewed the ACR's identified by the inspector and agreed that an adverse trend was indicated.

During the previous refueling outage an adverse trend regarding equipment clearance utilization was also identified. An evaluation of this trend identified a lack of verbatim compliance with the clearance procedure as the root cause. The licensee implemented corrective actions, such as procedural revisions and training, in an effort to reverse the trend. These actions were not sufficient to preclude the events which resulted in the ACR's identified during this assessment period. The licensee has concluded that additional measures are needed to prevent recurrence of these types of problems. The licensee is presently investigating these events to determine appropriate corrective action. The inspector will review the licensee's corrective action regarding equipment clearance problems under violation 400/92-27-02, (paragraph 2.c.(2)).

Since the inspector had to prompt the adverse trend declaration by the licensee, the corrective action trending program was considered to be weak in this case.

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.
- (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 licensee started early boration of the RCS during plant shutdown to lower the PH chemistry. This action was intended to dissolve corrosion products so they could be removed by the purification system. Hydrogen peroxide was then added to aid in corrosion product removal. This process was effective in lowering the dose rate in several RCS pipe locations and resulted in approximately 700 curies of corrosion products being removed.

- (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 material condition of safety related components to be good. The licensee's adherence to radiological controls, security controls, fire protection requirements, and TS requirements in these areas was satisfactory.

c. Review of Nonconformance Reports

Adverse Condition Reports (ACRs) were reviewed to verify the following: TS were complied with, corrective actions and generic items were identified and items were reported as required by 10 CFR 50.73.

- (1) ACR 92-529 reported that two licensee employees had violated the radiological boundaries established for radiography. One employee had intentionally crossed the radiography posting and boundary rope to access a stairwell. The other individual had attempted to warn the first employee to exit the area when they were noticed by health physics personnel. The two individuals were then escorted from the area and an investigation conducted. The investigation determined that the radiography source was retracted during this time frame. This was confirmed by measuring the personnel exposure of the two individuals (less than 20 millirem).

The inspector reviewed the licensee's procedure governing this activity, AP-507, Radiography Guidelines, and the training provided to the two individuals before this event. The inspector determined that appropriate training and administrative controls had been implemented before the event occurred. The inspector also reviewed radiation survey records of the radiography boundary and found it to be satisfactory. The licensee's corrective action following the event included terminating employment of the individual who intentionally violated the radiography boundary and counseling of the second individual. The event was further discussed between the inspector and regional health physics experts. This violation will not be subject to enforcement action because the licensee's efforts in identifying and correcting the violation meet the criteria specified in Section VII.B of the Enforcement Policy.

NCV (400/92-27-01): Failure to obey a radiography posting.

- (2) ACR 92-570 reported that on November 6, 1992, the "A" emergency diesel generator experienced a generator differential trip when it was started following maintenance. The licensee's investigation into this event disclosed that electrical grounding straps were still installed on the generator from previous work. A review of equipment clearances and the grounding device log indicated that the grounding straps had been installed in accordance with procedures AP-024, Grounding Device Control, and AP-020, Clearance Procedures. However, when the equipment clearance was authorized to be removed, the grounding straps had inadvertently been left in place. Procedure AP-020, step 5.7.1, requires that installed ground devices be removed following maintenance. Section 6 of the clearance form had been signed indicating that electrical grounds had been removed on November 6, 1992, even though the grounds were still in place. Failure to properly implement procedure AP-020 is contrary to the requirements of TS 6.8.1.a and is considered to be a violation.

Violation (400/92-27-02): Failure to properly establish\implement plant procedures.

- (3) ACR 92-596 reported that on November 11, 1992, the licensee discovered the tubing between the governor oil booster and the "A" emergency diesel governor was installed incorrectly. The governor oil booster provides oil pressure to fully open the diesel generator fuel racks on a diesel start signal, which helps to decrease the starting time of the diesel. Although the "A" diesel had longer starting times than the "B" diesel, it was still able to meet its maximum starting time of 10 seconds. The tubing was subsequently connected to the correct governor port and the diesel was tested satisfactorily. It appeared that the incorrect tubing connection was made during initial factory installation. A review of starting data indicated that with low starting air flask pressures the diesel may not have been able to meet its 10 second starting time requirement and it appeared that previous slow start valid failures were probably caused by the incorrect tubing connection.

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-1013 1A-SA Emergency Diesel Generator Operability Test Monthly Intervals

- OST-1091 Containment Closure Test Weekly Interval During Core Alterations and Movement of Irradiated Fuel Inside Containment
- OST-1817 Refueling Machine (Manipulator Crane) Operability Modes: 100 Hours Prior to Fuel Movement in Pressure Vessel
- OST-1818 Auxiliary Hoist Operability Modes: All 100 Hours Prior to Drive Rod Movement in Pressure Vessel
- OST-1833T Temporary Procedure for the Completion of OST-1813 (Remote Shutdown System Operability, 18 month) Retest Requirements
- MST-I0072 Train A 18 Month Annual Manual Reactor Trip Solid State Protection System Actuation Logic & Master Relay Test
- MST-I0127 Main Steam Line Pressure, Loop 1 (P-0476) Operational Test
- MST-I0163 Nuclear Instrumentation System Power Range N41 Operational Test
- MST-I0169 Nuclear Instrumentation System Source Range N31 Operational Test
- MST-I0170 Nuclear Instrumentation System Source Range N32 Operational Test
- MST-M0011 Emergency Diesel Generator Crankshaft Web Deflection and Thrust Clearance Check
- MST-M0014 Emergency Diesel Generator Cold Compression and Maximum Firing Pressure Checks
- EST-209 Type B Local Leak Rate Tests
- EPT-032T Component Cooling Water System Pressure Test
- EPT-146 Emergency Diesel Generator Post-Maintenance Operation

The performance of these procedures was found to be satisfactory with proper use of calibrated test equipment, necessary communications established, notification/authorization of control room personnel, and knowledgeable personnel having performed the tasks. The local leak rate tests on the RHR valve chambers were performed following the removal of mud and debris which was found to have clogged the chamber drain lines. The tests were completed satisfactory indicating the drain valves would have provided satisfactory pressure barriers.

- a. Following the measurements taken in accordance with procedure MST-M011, the "A" emergency diesel was started. Shortly after startup, licensee personnel discovered that the cylinder petcocks had been left open. The petcocks are generally closed during

diesel operation and opened to check for cooling water inleakage into the cylinders when the engine is barred over. The inspectors noted that the system engineer was assisting the craft in performance of the engine inspection and that steps in procedure MST-M011 required the engine be barred over with a hydraulic device. When licensee maintenance personnel encountered resistance during the engine barring, the system engineer directed the petcocks be opened. The maintenance procedure did not provide specific guidance for barring the engine. Subsequently, the petcocks were not returned to the closed position following the barring. The inspectors noted that operating procedures contained clear guidance on barring the engine which contained independent verification that the petcocks be closed. However, the operating procedure was not implemented since the barring had already been performed by operating personnel within the previous four hours. Furthermore, the inspectors found that the scope of work performed on the diesel engine, while under an equipment clearance, was not discussed between the craft and operating personnel to determine appropriate testing or valve lineups needed to restore the engine to operable status. This event is considered to be another example of the violation discussed in paragraph 2.c.(2) of this report.

- b. On November 8, 1992, during the performance of procedure EST-212 on penetration M-7, CVCS Normal Letdown, approximately 50 gallons of contaminated water was spilled in the reactor auxiliary building. To pressurize the penetration, a local leak rate monitor was connected through drain valves ICS-12 and ICS-13 which were opened. Following the completion of the test, the system was refilled with water by opening the isolation valve. When the isolation valve was opened, licensee personnel discovered that the drain valves had inadvertently been left open. Section 6 of Attachment 1 to procedure EST-212, contains specific steps to restore the penetration to service following testing and requires that the drain valves be shut before opening the isolation valves to refill the system. Failure to properly implement procedure EST-212 is considered to be another example of the violation discussed in paragraph 2.c.(2) of this report.
- c. During the performance of procedure OST-1833T on November 12, 1992, licensee personnel observed several transfer relays to be smoking. This procedure was performed to retest components which had failed during the previous test of the auxiliary control panel. Licensee personnel determined that the cause for the burned relays was an inadequate test procedure in that power supply fuses had not been removed which caused the transfer relays to cycle excessively. The failed relays were subsequently replaced and a revised test procedure performed satisfactory. The inspector considered the procedure generation process to be weak in this case as the mistake to remove all the power supply fuses was not detected during reviews.

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:

- Inspection of valve LCS-751 in accordance with procedure CM-M0198, Kerotest Series 9900 "Y"-Type Globe Valve Disassembly, Inspection, Reconditioning and Reassembly.
- Inspection and non-destructive examination of the "B" emergency diesel generator cylinder block in accordance with procedures MPT-M0030, Emergency Diesel Generator Cylinder Block Inspection, and CM-M0150, Emergency Diesel Generator Cylinder Head Removal, Disassembly, and Reassembly.
- Inspection of the camshaft lobes on the "A" emergency diesel generator in accordance with procedure MPT-M009, Emergency Diesel Generator Camshaft Lobe/Bearing and Tappet Assembly Inspection.
- Repair of the static inverters in accordance with procedures CM-E0020, Replace Oil Filled and Electrolytic Capacitors and/or Ferro-Resonant Transformer Assembly in Westinghouse 7.5 KVA Static Inverters and PIC-E051, Class IE 7.5 KVA Westinghouse Inverter.

The performance of work was satisfactory with proper documentation of removed components and independent verification of the reinstallation.

- a. A routine preventative maintenance (PM) task to replace the gate and synchronization board and the gate driver assembly in all four vital inverters was performed during this refueling outage. Following the component replacements, inverters I and II began experiencing problems. Inverter II tripped off line after operating several days and inverter I experienced a loss of output following reenergization. The output SCRs in both inverters were found faulted and the SCR supply fuses were blown. The licensee replaced the damaged SCRs and fuses, removed the new gateing and synchronization board, and reinstalled the old boards. The inverters were subsequently placed back into operation with no further problems. There appeared to be a problem with the replacement boards received from the spare parts warehouse. The licensee is evaluating the cause of the board failures with the manufacturer and will take appropriate actions.
- b. The "A" emergency diesel generator camshaft inspection was performed following identification of spalling and wear on the "B" emergency diesel generator camshaft discussed in NRC Inspection

Report 50-400/92-23. Very minor surface spots were noted which indicated the potential beginning of spalling. The indications were not serious enough to require camshaft replacement, however. The camshaft will be reinspected during the next scheduled diesel inspection in refueling outage number six.

5. Design Changes and Modifications (37828)

Installation of new or modified systems were reviewed to verify that the changes were approved in accordance with 10 CFR 50.59, that the changes were performed in accordance with technically adequate and 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.

- PCR-2512 Service Air Regulators to Chiller Expansion Tank
- PCR-5534 ESCWS Expansion Tank Improvements
- PCR-6547 Alternate Mini-Flow Redesign
- PCR-6575 Reactor Vessel Stuck Stud
- PCR-6584 EDG Starting Air/Control Air Contamination
- PCR-6605 Pre-Heater Bypass Line Replacement
- PCR-6630 Containment Closure for AFW Pipe Replacement

While performing the post modification testing for PCR-6547, on November 6, 1992, an SSPS logic relay actuated which satisfied the initiation signal for an automatic swapover of the RHR and CT suction valves to the containment sump. The valves did not reposition and dump the RWST to containment because the shift supervisor had conservatively turned off the breaker power supply earlier. Although this event did not actually cause a spill in containment, the procedural controls were considered to be weak.

During the removal of reactor vessel closure studs in preparation of core offload, one stud was found to be stuck in its reactor vessel flange hole. The licensee performed an engineering evaluation to leave the stud in place during refueling activities. The stuck stud did not interfere with the fuel manipulator. The evaluation concluded that the stuck stud could still be tensioned normally along with the other closure studs and not have to be removed until ASME Section XI examinations were required. The inspector considered the licensee's actions to be appropriate.

Modification PCR-6630 was implemented to allow core alterations during auxiliary feedwater pipe replacement. This temporary modification

installed and removed blank flanges on the AFW piping for containment closure requirements. The inspector was satisfied that containment closure requirements were met during refueling activities.

Modification PCR-6605 replaced the pre-heater bypass piping from the main feedwater system to the auxiliary feedwater system. This piping showed evidence of accelerated erosion rates when tested ultrasonically for pipe wall thinning. The new piping was fabricated from chrome-moly material which should be less susceptible to erosion. The inspectors reviewed the post-modification testing for this maintenance and the maintenance on the auxiliary feedwater piping which was replaced in containment. Radiography was performed on the weld repairs and a system inservice pressure test performed. The inspector checked the testing performed to the requirements contained in ASME Section XI and found it to be acceptable.

6. Safety Systems Walkdown (71710)

The inspector conducted a walkdown of various safety systems in containment to verify that the lineups were in accordance with license requirements for system operability and that the system drawings and procedures correctly reflected "as-built" plant conditions.

No violations or deviations were identified.

7. Outage Activities (71707)

Major activities performed during this scheduled refueling outage included a 20 percent eddy current inspection on the three steam generators, inspection of service water piping and components, testing of motor operated valves, teardown/overhaul of the "B" emergency diesel generator and reconstitution of fuel rods. Also, feedwater pipe erosion inspections prompted significant pipe replacement/modifications in the auxiliary feedwater/pre-heater bypass system.

The results of the steam generator eddy current inspection revealed no indications that steam generator tubes needed to be plugged.

The inspector reviewed the licensee's risk assessments for emergent work activities during the outage. The licensee recently implemented a revision to procedure PLP-700, Outage Management, which required that all outage activity additions receive an initial risk assessment to determine if the activity potentially affected key safety functions or the planned defense-in-depth. Specifically schedule changes involving the removal of the "B" SFP normal power supply and the repair of the "A" EDG during continuing maintenance on the "B" ESCWS were reviewed to verify appropriate evaluations had been made or PNSC approval obtained. The inspector considered the process to be effective.

8. Refueling Activities (60710)

The inspectors witnessed several shifts of fuel handling operations and verified that the refueling was being performed in accordance with TS requirements and approved procedures. Areas inspected included containment integrity, housekeeping in the refueling area, shift staffing during refueling, surveillance testing, and periodic monitoring of plant status during refueling operations. In addition, the following procedures were reviewed:

- PLP-616 Fuel Handling Operations
- FHP-010 Core Mapping Following Fuel Loading
- FHP-014 Fuel and Insert Shuffle Sequence
- FHP-020 Fuel Handling Operations
- OST-1091 Containment Closure Test Weekly Interval During Core Alterations and Movement of Irradiated Fuel Inside Containment
- OST-1817 Refueling Machine (Manipulator Crane) Operability
- OST-1818 Auxiliary Hoist Operability
- MST-I0169 Nuclear Instrumentation System Source Range N31 Operational Test
- MST-I0170 Nuclear Instrumentation System Source Range N32 Operational Test

The inspectors found procedure implementation to be satisfactory. The water clarity and lighting in the refueling cavity was excellent.

- a. During the core offload on October 2, 1992, operators received several manipulator crane underload interlock actuations while moving fuel assemblies. Although the interlock actuation temporarily halted crane movement, fuel movement was possible in-between actuations. During the first nine assemblies moved, operators encountered four underload interlock conditions. The manipulator crane has four load switch settings for selection depending on the weight of the fuel assembly and insert. The fuel transfer data sheets specified which switch setting to select. The purpose of the underload interlock is to prevent lowering an assembly which comes in contact with an adjacent assembly and "hangs-up". In this case the load settings specified in the fuel transfer data sheets were in error, but conservative, causing premature interlock actuation.

Licensee personnel compared the load settings specified on the fuel transfer sheets with original calculations of assembly weight

and found that most of the switch positions specified were incorrect. Fuel movement was halted until the transfer sheets could be revised with correct load settings. The licensee's investigation of this event revealed that the transfer sheet data was incorrectly transposed from the fuel assembly weight calculations. Since the fuel transfer data sheets receive several different independent reviews prior to implementation, the inspector considered this effort to be weak for not previously identifying this error.

- b. During fuel reload on October 30, 1992, licensee personnel discovered that a fuel assembly had been moved out of sequence. The first step of the fuel transfer data sheets specified the first assembly for reload to be from spent fuel rack location A-B2C4. The refueling operator mistakenly latched and moved the fuel assembly located in the adjacent rack location A-A2C4. The incorrect fuel assembly was placed in the upender and transferred to the containment refueling cavity. This error was noticed by licensee personnel during the next step in the fuel transfer data sheet when the refueling operator was noticed by another operator to be over the incorrect rack location. Fuel movement was then stopped and the first fuel assembly was transferred back from containment to the spent fuel rack location. Refueling operations were suspended until shift briefings were conducted which reinforced attention to detail principles. Future fuel movement proceeded without incident indicating that the licensee's corrective action was appropriate. This violation will not be subject to enforcement action because the licensee's efforts in identifying and correcting the violation meet the criteria specified in Section VII.B of the Enforcement Policy.

NCV (400/92-27-03): Failure to properly move fuel in accordance with fuel transfer data sheets.

9. 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. (Closed) LER 90-03: This LER reported that a train of essential services chilled water was inoperable due to air intrusion into the system. This item was previously discussed in NRC Inspection Report 50-400/92-02. During this outage the licensee has completed modifications to improve system cleanliness and provided new regulators for expansion tank pressure control.
- b. (Closed) LER 91-08: This LER reported that the high head safety injection system was inoperable due to a failure of the system's alternate miniflow lines. This event was previously discussed in

NRC Inspection Report 50-400/92-17. The licensee issued a supplement to the LER dated October 13, 1992, which documented additional testing performed on the system and system modifications to prevent recurrence of the event. During this outage the licensee implemented modification PCR-6547 to remove the relief valves and install flow orifices to regulate recirculation flow.

- c. (Closed) 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 50-400/92-07. The licensee has finished modification PCR-5741, CCW to SFP Coolers Low Flow Alarm, which upgraded the design pressures of the excess letdown heat exchanger and reactor coolant drain tank heat exchanger. In conjunction with increasing the relief valve setpoint to 190 psig, this action enabled the restoration of the CCW system to a normal lineup.
- d. (Closed) LER 92-04: This LER reported that a single failure could render the entire radiation monitoring system inoperable. This matter was previously discussed in NRC Inspection Report 50-400/92-08. Operating and test procedures have been revised to reflect the new slide switch positions. A revision to the FSAR has been made and will be submitted in the next FSAR update package.
- e. (Closed) LER 92-09: This LER reported a manual reactor trip which was initiated following the loss of the running main feedwater pump. This event was previously discussed in NRC Inspection Report 50-400/92-15. The licensee has completed real-time training alerting operating personnel on the causes for this event.
- f. (Closed) LER 92-11: This LER reported that the emergency bus undervoltage logic circuitry was inadequately tested. This event was previously discussed in NRC Inspection Report 50-400/92-15. The licensee has revised the permanent test procedures to correct the deficiency.
- g. (Closed) LER 92-13: This LER reported that a TS surveillance requirement to sample the fuel oil day tank was not performed following emergency diesel operation. This event was previously discussed in NRC Inspection Report 50-400/92-17. The licensee has completed training applicable personnel and has revised administrative procedures to clarify procedure step annotations. The individuals involved in this deficiency were counseled.
- h. (Open) LER 92-14: This LER reported pipe wall thinning in the auxiliary feedwater and main feedwater systems caused by flow erosion. This matter was previously discussed in NRC Inspection Report 50-400/92-23. The licensee has replaced those sections of piping which exhibited extensive erosion. The licensee is

presently evaluating the effectiveness of the computerized pipe wall thinning program and is investigating the cause for the accelerated rate of erosion.

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

- a. (Closed) IFI 400/91-26-01: Follow the licensee's activities to increase the charging pump flow margin and evaluation of quarterly pump testing acceptance criteria.

This matter was previously discussed in NRC Inspection Report 50-302/91-27 during which the quarterly pump testing was considered to be satisfactory. The licensee has reanalyzed the minimum safety injection flow limit during a loss of coolant accident and has determined that only 348 gpm is necessary. This value constitutes an additional 30 gpm available for design margin. A change to the TS was subsequently requested and issued on November 10, 1992.

- b. (Closed) Violation 400/92-13-01: Failure to maintain QC inspector certification.

The inspector reviewed and verified completion of the corrective actions listed in the licensee's response letter dated August 28, 1992. The licensee has enhanced the QC inspector recertification system to provide a two week notification prior to expiration dates.

- c. (Closed) IFI 400/92-23-01: Review the licensee's activities to repair preheater bypass and auxiliary feedwater piping due to erosion.

The licensee has issued LER 92-14 describing the corrective actions taken for this event. For record purposes the IFI will be closed and further action tracked by the LER.

11. Exit Interview (30703)

The inspectors met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on November 23, 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 Violation, Non-cited Violations, and Inspector Follow-up Item addressed below. 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. No dissenting comments from the licensee were received.

<u>Item Number</u>	<u>Description and Reference</u>
400/92-27-01	NCV: Failure to obey a radiography posting, paragraph 2.c.(1).
400/92-27-02	VIO: Failure to properly establish/implement plant procedures, paragraph 2.c.(2).
400/92-27-03	NCV: Failure to properly move fuel in accordance with fuel transfer data sheets, paragraph 8.b.

12. Acronyms and Initialisms

ACR	-	Adverse Condition Report
AFW	-	Auxiliary Feedwater
ASME	-	American Society of Mechanical Engineers
CCW	-	Component Cooling Water
CFR	-	Code of Federal Regulations
CT	-	Containment Spray
CVCS	-	Chemical Volume Control System
EDG	-	Emergency Diesel Generator
EPT	-	Engineering Performance Test
ESCWS-		Essential Services Chilled Water System
EST	-	Engineering Surveillance Test
FHP	-	Fuel Handling Procedure
FSAR	-	Final Safety Analysis Report
GPM	-	Gallons Per Minute
IFI	-	Inspector Follow-up Item
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
PM	-	Preventive Maintenance
PNSC	-	Plant Nuclear Safety Committee
PSIG	-	Pounds Per Square Inch Gage
QC	-	Quality Control
RCS/RC-		Reactor Coolant System
RHR	-	Residual Heat Removal
RWST	-	Refueling Water Storage Tank
SCR	-	Silicon Controlled Rectifier
SFP	-	Spent Fuel Pump
SSPS	-	Solid State Protection System
TS	-	Technical Specification
VIO	-	Violation

