



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

Report No.: 50-400/87-26

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: June 20 - July 20, 1987

Inspectors:	<u>S. J. Vias</u>	<u>8/3/87</u>
	G. F. Maxwell	Date Signed
	<u>S. J. Vias</u>	<u>8/3/87</u>
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Accompanying Personnel: P. B. Moore
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Approved by:	<u>P. E. Fredrickson</u>	<u>8/3/87</u>
	P. E. Fredrickson, Section Chief	Date Signed
	Division of Reactor Projects	

SUMMARY

Scope: This routine, announced inspection involved inspection in the areas of Inspector Follow-up Items, Follow-up on Items of Noncompliance, On-Site Follow-up of Events and Bulletins, Monthly Surveillance Observations, Operational Safety Verification, Monthly Maintenance Observations, and Other Activities.

Results: Two violations were identified - "Low Pressure Safety Injection During Plant Cooldown" - Paragraph 6, and "Improper Electrical Clearance" - Paragraph 7.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

G. G. Campbell, Manager of Maintenance
J. M. Collins, Manager, Operations
G. L. Forehand, Director, QA/QC
J. L. Harness, Assistant Plant General Manager, Operations
L. I. Loflin, Manager, Harris Plant Engineering Support
G. A. Myer, General Manager, Milestone Completion
D. L. Tibbitts, Director, Regulatory Compliance
R. B. Van Metre, Manager, Harris Plant Technical Support
R. A. Watson, Vice President, Harris Nuclear Project
J. L. Willis, Plant General Manager, Operations

Other licensee employees contacted included technicians, operators, mechanics, security force members, engineering personnel and office personnel.

2. Exit Interview

The inspection scope and findings were summarized on June 21, 1987, with the Plant General Manager, Operations. No written material was provided to the licensee by the resident inspectors during this reporting period. The licensee did not identify as proprietary any of the materials provided to or reviewed by the resident inspectors during this inspection. The violations identified in this report have been discussed in detail with the licensee. The licensee provided no dissenting information at the exit meeting.

3. Licensee Action on Inspector Follow-up Items (92701)

a. (Closed) Inspector Follow-up Item 50-400/86-48-01 "No Criteria Established in MP Procedure for Repair of Weld Data". The inspector reviewed the licensee's General Welding Procedures (GWP). GWP-010 Rev. 1, Repair of Base Materials and Weldments, details the criteria for which a Repair Weld Data Report is required. The procedure was specific and referenced the proper ASME codes. The inspector also reviewed the following procedures related to welding practices:

- GWP-007, Rev. 1, General Welding Procedure for Stainless Steel, Nickel Base, and Non-Ferrous Pressure, and Non-Structural Components.
- GWP-006, Rev. 1, General Welding Procedure for Carbon and Alloy Steel.

- GWP-008, Rev. 1, General Welding Procedure for Structural Steel (Seismic, Nonseismic) and Hangers.

Each of these procedures referenced GWP-010 under sections titled Repairs to Base Materials and Welds. Also, under sections titled Inspection and NDE, the procedures referenced Site Specification 034. The inspector reviewed Rev. 16 of Site Specification 034, Nondestructive Examination, Visual Inspection, and Testing Requirements. This document was thorough in its detail of NDE and testing requirements for the field fabrication and installation of ASME Code Class 1, 2, 3, and MC piping systems and components; ASME Code Class 2 and 3 Storage Tanks; Radwaste, Fire Protection, and Balance of Plant Piping; Nuclear and Nonnuclear Seismic Class 1 and Nonseismic Structures. Based on the establishment of the GWPs and their references to appropriate source documents, this item is closed.

- b. (Closed) Inspector Follow-up Item 50-400/86-48-02 "Procedural Change to Include a Limit on Number of Signatures to be Given in One Day". The licensee has issued a memorandum concerning operators receiving too many signatures in a single day on their qualification cards. The memorandum directs the technical aids in the training department to review completed qualification cards for the number of signatures, however, no limit is specified. The memorandum further states that the proper use of qualification cards will be discussed in lesson plan OJT-LP-7.0, Orientation. The licensee feels that this practice will be sufficient to correct the stated problem.

The inspector reviewed several training records of individuals in the current reactor operator class to determine if the problem was being corrected. The inspector found no instances of excessive signatures in the selected records and, therefore, concluded that the problem appears to have been corrected.

- c. (Closed) Inspector Follow-up Item 50-400/86-48-03 "Valve Number System". The inspector reviewed and compared control board labeling, simulator labeling, procedural texts, and facility drawings in order to determine if one valve numbering system was used consistently at the facility. The inspector found consistent use of a numbering system developed by the licensee on all of the above listed items and, therefore, considers this item closed.
- d. (Closed) Inspector Follow-up Item 50-400/86-48-04 "Conduct Additional Simulator Training for Group One". Due to further discussions with the NRC, the licensee provided an additional five weeks of simulator training for individuals in the Group One category. The inspector reviewed the training records of the operators in Group One and concurred that these individuals did receive the additional training, thereby fulfilling the corrective action associated with this item. This item is closed.

- e. (Closed) Inspector Follow-up Item 50-400/86-48-05 "Conduct Additional Interviews With Non-Licensed Operators". The inspector conducted interviews with non-licensed operators on the subjects of normal and emergency service water systems. During walkdowns of the systems, the operators demonstrated clear knowledge of system component locations, flowpaths, and associated interlocks. The inspector also reviewed non-licensed operator lesson plans associated with the service water systems and found them to be adequate. This item is closed.
- f. (Closed) Inspector Follow-up Item 50-400/86-48-06 "Proceduralize Plant Specific Training Requirements." The inspector reviewed Maintenance Management Manual (MMM) 001, Maintenance Conduct of Operations, Rev. 2. Advance Change 2/7 added a list of required training for maintenance personnel. This change was incorporated into the procedure in Section 5.18, Training. This section now lists the training for each department that the craft personnel should complete within the first six months of their employment at the facility. The inspector interviewed personnel in the maintenance training department to assess the controls employed to assure that the maintenance department personnel received this training. The inspector was informed that QA performs audits on the hard copy files periodically and, in addition, the training department keeps an informal computer-based tracking system to facilitate its training schedules. The inspector determined that this list was adequate and with the inclusion of it in the procedure, this item is closed.
- g. (Closed) Inspector Follow-up Item 50-400/86-48-07 "Retraining in Mitigating Core Damage". The licensee submitted a letter to NRR on April 21, 1986 stating that only licensed operators would receive retraining in Mitigating Core Damage and that managers and technicians in Instrument and Control, Health Physics and Chemistry Sections would not. NRR issued NUREG 1038 Supplement 4 in October 1986 which indicated in Paragraph 13.2.1 that the licensee's response contained in the April letter was acceptable. Since the issue of mitigating core damage training for managers and technicians has been resolved, this item is closed.
- h. (Closed) Inspector Follow-up Item 50-400/86-76-02 "Further Review of Licensee's Verification and Validation Program". As a result of NRC Headquarter's inspections conducted on July 10 and 11, 1986 of the facility's Emergency Operating Procedures (EOP), the licensee committed to validate EOPs by December 12, 1987. This commitment is documented by letter from the licensee to the NRC dated August 29, 1986. On April 14, 1987, the licensee also submitted a revised Procedure Generation Package (PGP) to the NRC for approval, which includes the formal verification and validation program. Because the validation and verification program and its associated commitments will be extensively reviewed by Region II after the final approval of the facility's PGP, this item is no longer needed for inspection tracking purposes and is, therefore, closed.

- i. (Closed) Inspector Follow-up Item 50-400/86-76-04 "Review Licensee Efforts to Incorporate EOP Material into Quality Assurance Document Control System". The inspector has evaluated the licensee's actions in fulfilling its commitment to incorporate the Emergency Response Guidelines Manuals, the Emergency Operating Procedures Setpoint Study, and the Plant General Procedures, including the step deviation document and the verification and validation documentation, into its document control system. The inspector verified that the ERG Manuals were successfully incorporated into the document control system. Provisions have also been established to incorporate the remaining documents into the document control system upon finalization of these documents. This item is closed.
- j. (Closed) Inspector Follow-up Item 50-400/86-76-09 "Licensee to Develop Procedure to Perform Task of Switching Charging/Safety Injection Pump (CSIP) Trains". The licensee has written the following procedures to address this issue:
 - CM-E0012, Rev. 0, Electrical Power Feed Switchover for Charging/Safety Injection Pump 1C-SAB.
 - CM-E0013, Rev. 0, Electrical Power Feed Switchover for Component Cooling Water Pump 1C-SAB.

The inspector reviewed these two procedures and found them to satisfactorily address the task of switching the "swing" pumps from one train to the other. The inspector was concerned that there was no provision in the procedure for demonstrating that the switchover was indeed successful. The inspector was informed that switching the pumps requires Operations personnel to enter a Limiting Condition for Operation (LCO); exiting the LCO requires them to demonstrate the operability of the new pump and thus satisfies the inspector's concern. This item is closed.
- k. (Closed) Inspector Follow-up Item 50-400/86-76-18 "Licensee to Reevaluate Shift Turnover Controls to Insure that Minimum Equipment List is Provided For". The inspector reviewed the Minimum Equipment List (MEL) that is being developed by the licensee and found that the list to be a significant improvement over the old MEL. The licensee stated that the new MEL was currently being revised to make it more manageable and that it will be incorporated in the Shift Turnover Controls in the near future. This item is closed.
- l. (Closed) Inspector Follow-up Item 50-400/86-76-19 "Review Qualifications of Technical and Safety Evaluation Reviewers to Ensure They Have Proper Qualifications". Technical Specification 6.5.1 and Administrative Procedure AP-14, Criteria For Qualified Safety Reviewers, delineates the licensee's qualification requirements for qualified safety reviewers. AP-14 has been appropriately revised to explicitly require that qualified safety reviewers have two years of

related work experience in addition to the "degree or equivalent" experience requirement. The licensee demonstrated that a review of the qualified safety reviewers list is conducted at least quarterly. The inspector's evaluations of selected reviewers on the current reviewer's list indicated that the reviewers held the proper qualifications.

The inspector reviewed AP-006, Procedure Review and Approval, and determined that the procedure specified the minimum qualifications for qualified technical reviewers. The inspector also confirmed that a qualified technical reviewers list has been established to formally identify the qualified reviewers. This item is closed.

- m. (Closed) Inspector Follow-up Item 50-400/87-04-01 "Commitment to Complete Revisions of EOP Step Deviation Document and Cross-Referencing of EOP Flowpaths to Flowpath Guides". The inspector reviewed the step deviation documents for several emergency procedures. These documents were appropriately revised, meeting the commitment date of January 31, 1987. The licensee had not originally intended to seek management approval of the revised deviation documents. During interviews with the inspector, the licensee stated that approval of the step deviation documents by the Manager of Operations will be obtained, consistent with other Emergency Operating Procedures (EOP) documentation.

The inspector also verified that the revisions to the cross-referencing of EOP flowpaths to flowpath guides were completed for paths 1 and 2. The revised cross-referencings were approved by the licensee on March 5, 1987.

The scope of the inspection did not include an evaluation of the technical adequacy of the aforementioned documents. This type of inspection will be conducted by Region II at a later date. This item is closed.

- n. (Closed) Inspector Follow-up Item 50-400/87-04-02 "Provide Training for Non-Licensed Operators on Reset of Tripped Emergency Diesel Generators". The inspector reviewed the lesson plan used in the retraining of non-licensed operators on the emergency diesel generator (EDG) and found the inclusion of resetting of the manual overspeed trip. This was covered in the classroom and was also covered in the field training conducted at the EDG. This item is closed.
- o. (Closed) Inspector Follow-up Item 50-400/87-04-03 "Commitment to Evaluate Need for Additional EOP Training and to Implement Training". The inspector reviewed the documentation for the licensee's EOP requalification program that was conducted in the second quarter of this year. The inspector reviewed the lesson plans that were used during the training and determined that all the operators appeared to have received the required training. This item is closed.

- p. (Closed) Inspector Follow-up Item 50-400/87-04-04 "Commitment to Resolve Additional EOP Related Deficiencies Identified During Additional EOP Training". The inspector reviewed the programs in place for the transmitting of deficiencies identified through simulator and classroom training. The programs appeared to be adequate, however, there appeared to be a bottleneck in the review process. The inspector discussed this problem with the licensee and was informed that the problem would be corrected. The current program adequately meets the corrective action needed for the resolution of this issue, therefore, this item is considered to be closed.
- q. (Closed) Inspector Follow-up Item 50-400/87-04-06 "Commitment to Increase Administrative Controls over Required Reading Program". The inspector reviewed the administrative controls established over the required reading program. These controls are contained in procedure OMM-015, Operations Required Reading, Rev. 0, dated April 10, 1987. The inspector also reviewed the current index and control forms to ensure the program was currently being conducted in accordance with the procedure. The records indicated that the shifts observed during the inspection had completed the current required reading items contained in the control room files. Based on this review, this item is closed.
- r. (Closed) Inspector Follow-up Item 50-400/87-04-07 "Commitment to Upgrade Controls Over Removal of Cancelled Procedures From Control Room". The inspector reviewed procedures AP-006, Procedure Review and Approval, Rev. 7 and RPM-002, Document Distribution and Control, to determine the licensee's method of procedure control and cancellation. Additionally, the inspector reviewed Document Services' Internal Surveillance Report dated May 14, 1987 which had reviewed all of the Control Room's Controlled Procedures. The Surveillance Report results indicated that control had been established to ensure procedures in use were the current procedures. The inspector selected several procedures in the control room to verify that cancelled procedures had been removed. No discrepancies were noted. Based on the above reviews, this item is closed.
- s. (Closed) Inspector Follow-up Item 50-400/87-04-08 "Resolution of Concerns Over Lack of Identification of Control Room Controls with Control Power Normally Deenergized". The licensee indicated that a review of the Control Room Controls with respect to systems with control power normally removed had been conducted. The review indicated that only two systems were normally involved with the removal of control power and that the operators were cognizant of the conditions of these systems. The inspector reviewed the Control Room Controls and questioned the operators on several shifts during the inspection to verify that they were knowledgeable of the conditions of these systems and the lack of control indication. Based on this review, this item is closed.

- t. (Closed) Inspector Follow-up Item 50-400/87-04-10 "Further Licensee Evaluation and Resolution of Lack of SI Switch Identification as Associated With 12/11/86 Event". The inspector reviewed the licensee's corrective action to prevent the recurrence of an inadvertent Safety Injection (SI) while resetting an SI. The licensee has painted the handles to the SI actuation and reactor trip switches red and has encircled all SI actuation and reactor trip switches in a red striping. These actions correct the immediate concern of a recurrence of the event. The licensee stated that at the present time there are no plans to relocate the SI actuation switches that are located directly above the Phase A and SI trains reset switches. By not moving the SI actuation switches to a new location there is a possibility of a recurrence if the switches for reset are utilized without the operator looking directly at the switches. The relocation of the SI actuation switches was evaluated by the licensee and was determined to be unnecessary with the current changes completed. This item is closed.

4. Follow-up on Items of Noncompliance (92702)

- a. (Closed) Violation 50-400/86-76-17 "Failure to Follow Procedure on Emergency Diesel Generator". The inspector reviewed the following Operational Surveillance Procedures (OST):

NUMBER	NAME	REVISION/DATE
OST-1823	Diesel Generator 18 Month Operability	2 1/23/87
OST-1824	Diesel Generator 18 Month Operability	2 1/23/87
OST-1013	Diesel Generator Operability Test Monthly	2 5/20/87
OST-1073	Diesel Generator Operability Test Monthly	1 5/20/87
OST-1085	Diesel Generator Operability Test Semiannual	0 1/16/87
OST-1086	Diesel Generator Operability Test Semiannual	0 1/16/87

Each of the above procedures has been changed to include steps which direct the operators as to the correct method to secure the diesel generators in case the procedure is halted before completion. Based on these corrective actions this item is closed.

- b. (Closed) Violation 50-400/86-93-01 "Failure to Follow Procedures for: 1) Review of RVLIS Surveillance for Clearance Preparations; and 2) Review of Control Room Strip Chart Recorders". The inspector reviewed the following Maintenance Surveillance Test Procedures (MST):

NUMBER	NAME	REVISION/DATE
MST-I0322	Reactor Vessel Level Monitoring Monitoring System Transmitter Calibration	0 7/11/86
MST-I0018	Loop Cal of S/G 2B Stm/Fwtr Flow Protection Set III	0 AC 0/5
MST-I0035	6.9KV Emergency Bus 1A-SA UV Relay Channel Cal.	1 AC 1/3
MST-I0072	Train A 18 Month Manual Reactor Trip SSPS Actuation Logic	1 AC 1/2
MST-I0052	RCP Breaker 1B-SN Integrated Functional Test	2 10/3/86
MST-I0176	SG 2B Low Level Narrow Range Loop Operational Test	0 AC 0/5
MST-I0212	Cal of Pzr PORV Position Indication	0 AC 0/4
MST-I0207	RWST Liquid Level Ch 4 Operational Test	0 AC 0/6
MST-I0189	Power Range N44 Det Plateau Curve Verification	0 AC 0/4

Based on the review of the above MSTs, the inspector determined that the licensee has a program in place to ensure that adequate guidance is given to the operators on the impact of running the procedure. Additionally, the inspector reviewed shift note OP-40-86 which required the placement of a temporary sticker on surveillance-affected indicators.

The inspector also reviewed the control room operators log to ensure that records of the Control Room Strip Chart Recorders were being kept. Based on the above reviews, this item is closed.

- c. (Closed) Violation 50-400/87-04-09 "Failure to Control Tagging and System Configuration in Accordance with Approved Procedures". The inspector reviewed procedure OMM-014, Operations - Operation of the Clearance Center, Rev. 0 and AP-20, Clearance Procedure, Rev. 1, Advanced Change 1/5, to determine the controls the licensee had established over clearances. A review of the last three months of weekly and monthly audit reports was conducted to ensure that the clearance control was effective. Additionally, the inspector selected several active clearance tags during tours of the plant and verified that they were current and properly attached to the correct equipment. Based on the above reviews, this item is closed.

5. On-Site Follow-up of Events and Bulletins (92703, 93702)

The inspectors reviewed and evaluated the following Licensee Event Reports (LERs) to determine if the licensee complied with license requirements, identified the root cause of the events and initiated the appropriate corrective action:

- a. (Closed) LER 87-07 "Technical Specification Cooldown - Essential Services Chilled Water". During Mode 1 operations the plant declared the A train of Essential Services Chilled Water (ESCW) inoperable for maintenance (replacement of the pump seal on the recirculation pump) which placed the plant in a 72 hour Limiting Condition for Operation (LCO) in accordance with Technical specification (TS) 3.7.13. Subsequently the plant experienced problems with the B train of ESCW tripping due to compressor low lube oil pressure. After several attempts to restart the B train the licensee declared the B train inoperable. With both trains of the ESCW inoperable the plant made preparations to be in Mode 3 within 7 hours as required by the action statement of TS 3.0.3. After approximately 20 minutes the B train of ESCW was restored and declared operable.

Later that same evening the B chiller tripped again and the plant was placed back under the action statement of TS 3.0.3. Plant personnel repaired the A chiller and restored the chiller unit to service and terminated TS 3.0.3. Repairs to the B ESCW train were completed and it was returned to service by declaring it operable, which terminated the LCO of TS 3.7.13.

The inspectors reviewed the above LER events, supportive documentation and interviewed the responsible individuals. As a result, the inspectors found that the low loading requirements of the B chiller units were such that the chiller could not continuously operate. The licensee has taken corrective actions which included: training upgrade for the operations personnel on chiller units, procedure revisions for chiller operation, perform evaluation of chiller operation at low load or low temperatures, and review of TS for the ESCW to determine if any changes are warranted. This item is closed.

- b. (Closed) LER 87-10 "Tech Spec Cooldown - Control Room Ventilation". On February 28, 1987, while operating at Mode 3, a spurious signal from a smoke detector isolated the control room. With the control room ventilation isolated the recirculation fan flow was secured and could not be cleared until after the smoke detector was cleaned. A plant cooldown was commenced in accordance with TS 3.0.3; the detector was returned to service and declared operable approximately 4 3/4 hours later.

The inspectors determined that this event was caused by the accumulation of dust and dirt on the detector's sensors. Cleaning of the detector allowed it to be reset and placed back in service, terminating the action statement of TS 3.0.3. This item is closed.

- c. (Closed) Bulletin 86-02 "Static O-Ring Differential Pressure Switches." The inspectors determined that the licensee has satisfactorily resolved the issue dealing with the concerns identified in this Bulletin. The licensee's response to the NRC, dated October 9, 1986, stated that the licensee does not utilize SOR, Inc. Series 102 and 103 differential pressure transmitters in important to safety applications, as defined in 10 CFR 50.49(b). This item is closed.

6. Monthly Surveillance Observation (61726, 61700)

During this inspection period the inspectors reviewed and witnessed portions of Operations Surveillance Tests OST-1044 and OST-1045, Engineered Safety Features Actuation System (ESFAS) Train A and B Slave Relay Test Quarterly (On a Staggered Test Basis) Modes 1, 2, 3 and 4. The tests were performed to meet the surveillance requirements of Technical Specifications 4.3.2.1, Table 4.3-2 for each train. The purpose was to verify that the slave relay portions of the solid state protection circuitry were operable. The inspectors observed that all indicating lamps responded as required, slave relays energized and reset on demand and each device actuated was documented in accordance with procedural requirements. The inspectors observed the test and reviewed the supportive operations procedures, OP-127, Steam Generator Blowdown System, and OP-137, Auxiliary Feedwater System. The inspectors verified that the test personnel were qualified to perform the test, an approved procedure was available, all deficiencies were documented in accordance with approved procedures, and test equipment was calibrated.

The inspectors also witnessed Operations personnel conducting OST-1075, Turbine Mechanical Overspeed Trip Test, Modes 1-2 performed to meet Technical Specification requirement 4.3.4.2.b and the channel calibration requirements of the turbine overspeed protection system. The inspectors reviewed the supporting documentation for the test to verify that: qualified Operations personnel were performing the test, procedures in use were properly approved prior to use, calibration of equipment used was current, special tools or equipment necessary for task completion

were available, test prerequisites were met prior to commencing test, and the shift foreman's permission was obtained prior to beginning the test. The turbine overspeed trip was tested, and it tripped when the turbine reached 1975 rpms, which was within the required tolerances of the OST (1980 +/- 18 rpms).

On July 16, 1987 the licensee commenced a short outage by electrically disconnecting the plant from the grid, taking the reactor subcritical and starting a plant cooldown to mode 4. The outage was required to conduct planned repairs to a leaking blow down valve (1-BD-46) for the "C" steam generator. In addition to this work activity, other planned work activities included: cleanness inspections in the condenser hotwell, inspections of the cooling tower cooling plates, and inspecting the condenser tubes inside the east and west water boxes.

The inspectors witnessed Operations personnel perform portions of the plant shutdown and cooldown to verify that: the procedures used were approved and available in the control room, operations personnel were using the procedures to bring the plant to mode 4 in a controlled manner, operations personnel were aware of plant status, and routine maintenance activities did not interfere with operations personnel's conduct of business. All evolutions witnessed were performed in a safe and controlled manner except as noted below.

When the primary coolant system normal pressure is reduced to less than 900 pounds, a potential exists for the passive safety injection system (SI) to initiate without any operator action. Operators were required by General Procedure GP-007 to isolate the passive system prior to allowing the plant pressure to drop below 900 pounds. During the conduct of GP-007, "Normal Plant Cooldown from Mode 3 to Mode 5", Rev. 2, Operations personnel were maintaining the plant temperature and pressure within the cooldown limits specified on Attachment II of the procedure. At approximately 12:50 p.m. on July 16, 1987, Operations personnel in charge of the plant cooldown allowed the primary plant pressure to drop below the cold leg accumulator pressure (approximately 665 pounds) without having first isolated the SI cold leg accumulator as required in Section 5.29 of the procedure. This failure to follow the requirements of Procedure GP-007 caused the passive accumulator system to inject borated water into the reactor coolant system. Operations personnel took immediate corrective actions to bring the plant to stable operating condition. These corrective actions included securing the cooldown, isolating the SI cold leg accumulators, the use of a charging pump and pressurizer heaters to increase reactor coolant pressure back to that pressure required in the procedure (900-1000 pounds) and verification of the amount of injected water. Reactor coolant chemistry was adjusted to maintain the boron chemistry within limits.

The inspector informed licensee management that the preceding condition is a violation of Technical Specifications 6.8.1.a, and will be identified as "Low Pressure Safety Injection During Plant Cooldown" (400/87-26-01).

One violation was identified in the areas inspected.

7. Operational Safety Verification (71707, 71710, 62703)

a. Plant Tours

The inspectors conducted routine plant tours during this inspection period to verify that the licensee's requirements and commitments were being implemented. These tours were performed to verify that systems, valves and breakers required for safe plant operations were in their correct position; fire protection equipment, spare equipment and materials were being maintained and stored properly; plant operators were aware of the current plant status; plant operations personnel were documenting the status of out of service equipment; security and health physics controls were being implemented as required by procedures; there were no undocumented cases of unusual fluid leaks, piping vibration, abnormal hanger or seismic restraint movements; and all reviewed equipment requiring calibration was current.

Tours of the plant included review of site documentation and interviews with plant personnel. The inspectors reviewed the shift foreman's log, control room operator's log, clearance center tag out logs, system status logs, chemistry and health physics logs, and control status board. During these tours the inspectors noted that the operators appeared to be alert and aware of changing plant conditions.

The inspectors verified that various plant spaces were not in a condition which would degrade the performance capabilities of any required system or component. This inspection included checking the condition of electrical cabinets to ensure that they were free of foreign and loose debris, or material.

Site security was evaluated by observing personnel in the protected and vital areas to ensure that these persons had the proper authorization to be in the respective areas. The security personnel observed appeared to be alert and attentive to their duties and those officers performing personnel and vehicular searches were thorough and systematic. Responses to security alarm conditions appeared to be prompt and adequate.

b. Plant Events

On June 21, 1987 while at 30 percent reactor power the plant received a condensate pump discharge low pressure alarm followed immediately by loss of the "A" condensate pump, "B" condensate booster pump and "B" main feedwater pump. Operations personnel manually tripped the turbine and reactor due to loss of feedwater flow. The auxiliary feedwater system started as required supplying necessary feedwater

flow. The cause for the loss of feedwater was due to a blown fuse in the control circuit of the "B" feedwater pump recirculation valve resulting in excessive flow demand on the condensate and booster pumps. Licensee personnel tested the control circuit and could find no explanation for the fuse failure. The defective fuse was replaced; the control system was satisfactorily tested, and the feedwater systems were returned to normal. The licensee continues to evaluate this condition.

On June 22, 1987, with the plant at six percent reactor power, operations personnel attempted to synchronize the turbine generator to the electrical grid. When the operators closed the electrical tie breaker, the turbine generator electrically assumed a sudden increase in electrical grid load. The increase in electrical grid load (approximately 200 MW instantaneously) was sensed by the Digital Electro Hydraulic Control System (DEH) as a demand on the Turbine generator and therefore the DEH system fully opened the throttle valves. When the throttle valves opened fully the steam header pressure dropped rapidly causing a swell in the Steam Generators. Steam Generator "C" met the Hi-Hi level signal which initiated a Turbine Generator trip to protect the Turbine in the event of moisture carryover. In addition to tripping of the turbine generator, the Reactor Protection System (RPS) tripped the reactor. The licensee investigated the DEH system and could not make an absolute determination as to the cause of the event. The inspectors were informed that other utilities have experienced similar problems with the turbine generator DEH system. The inspectors noted that the vendor had been conducting adjustments to the DEH system to, "improve the efficiency of the turbine" just prior to this event. After the occurrence of this event, the vendor determined that making certain adjustment to the system and to the steam admission valves would limit or reduce the possibility of a similar transient occurring again. The adjustments to the DEH system were made, the reactor was returned to power, the turbine was placed back on the electrical grid and subsequently this phenomena has not occurred again.

On July 9, 1987, while operating at 100 percent reactor power, an inadvertent reactor trip occurred. The licensee reported the event to the NRC, as required by 10 CFR 50.72, as being caused by an error in reading an electrical drawing. The inspectors reviewed the associated documentation and interviewed responsible licensee personnel. As a result, the inspectors noted that a Work Request 87-AUUK1 was drafted to authorize work on an electrical solenoid for an ammonia supply valve for "C" steam generator valve 1AF-161. The work required that an electrical clearance be established to ensure that the power for the solenoid could be temporarily removed. In order to accomplish this, the Clearance Request should have required the removal of fuses L5B/1967 and L6B/1967 in ARP-1B(SB)-F1 shown on Control Wiring Diagrams (CWD) 1967. However, the Clearance Request

mistakenly identified the fuses to be removed as L5B and L6B in ARP-1B(SB)-F2. These two fuses supply voltage to the "C" steam generator feedwater regulating valve. Removing the wrong fuses caused the feedwater to be effectively shut off, stopping main feedwater to the steam generator, thus resulting in a low level in the steam generator causing a reactor plant and turbine trip.

The inspectors reviewed the applicable CWDs and were informed that the clearance center personnel, in completing the request, followed the process which they had originally learned. However, the original method of identifying the fuses for the solenoid on 1AF-161 was incorrect due to recent design document changes. These new changes were made to provide more specific information regarding fuse location. Clearance personnel were unaware of how to interpret the new design information. In the above instance, the changes on CWD 1967 were not recognized.

The inspectors informed the licensee that the preceding is a violation of site Administrative Procedure AP-020, "Clearance Procedure" Rev. 1. Step 5.1 of this procedure requires Clearance personnel to specify the appropriate power source (fuses in this case) when electrically isolating a valve. This is a violation "Improper Electrical Clearance" (50-400/87-26-02).

One violation was identified in the areas inspected.

8. Monthly Maintenance Observation (62703, 62700, 37700)

The inspectors reviewed the licensee's maintenance activities during this inspection period to verify the following: maintenance personnel were obtaining the appropriate tag out and clearance approvals prior to commencing work activities, correct documentation was available for all requested parts and material prior to use, procedures were available and adequate for the work being conducted, maintenance personnel performing work activities were qualified to accomplish these tasks, no maintenance activities reviewed were violating any limiting conditions for operation during the specific evolutions, the required QA/QC reviews and QC hold points were implemented, post maintenance testing activities were completed, and equipment was properly returned to service after the completion of work activities.

Maintenance activities were evaluated for the B main feedwater pump. This maintenance was performed to correct problems with a leaking seal connection. The inspectors reviewed the documentation to ensure that it was properly preapproved prior to implementation and identified any amplifying instructions necessary for task completion. The licensee completed work on the main feedwater pump on July 14, 1987, and returned to power operations.

9. Other Activities (94600)

On July 14, 1987 the Federal Emergency Management Agency tested the siren and tone alert system for the Shearon Harris facility. The test was started at approximately 6:05 p.m. and concluded at approximately 6:20 p.m. A telephone survey of the local residents immediately followed the completion of the test. The results of the test will be evaluated by the licensee.