



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

Report No.: 50-400/86-46

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

Docket No.: 50-400

License No.: CPPR-158

Facility Name: Harris Unit 1

Inspection Conducted: May 20 - June 20, 1986

Inspectors:	<u>J.S. Mell</u>	<u>7/8/86</u>
FOR G. F. Maxwell		Date Signed
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FOR P. G. Humphrey		Date Signed
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FOR P. E. Fredrickson, Section Chief		Date Signed
Division of Reactor Projects		

SUMMARY

Scope: This routine, announced inspection involved inspection in the areas of Licensee Action on Previous Enforcement Matters and Inspector Follow-up Items; Plant Procedures; Safety Committee Activity; Comparison of As-Built Plant to FSAR Description; Preoperational Test Program Implementation Verification; Testing of Pipe Support and Restraint Systems; and Other Activities.

Results: One violation was identified - "Housekeeping Procedures" - paragraph 7. One deviation was identified - "Failure to Review Shift Notes" - paragraph 4.

## REPORT DETAILS

### 1. Licensee Employees Contacted

J. M. Collins, Manager, Operations  
G. L. Forehand, Director, QA/QC  
J. L. Harness, Assistant Plant General Manager, Operations  
C. S. Hinnant, Manager, Start-up  
L. I. Loflin, Manager, Harris Plant Engineering Support  
C. L. McKenzie, Acting Director, Operations QA/QC  
G. A. Myer, General Manager, Milestone Completion  
M. Thompson, Jr., Manager, Engineering Management  
D. L. Tibbitts, Director, Regulatory Compliance  
B. Van Metre, Manager, Harris Plant Maintenance  
C. C. Wagoner, Project General Manager, Construction  
R. A. Watson, Vice President, Harris Nuclear Project  
J. L. Willis, Plant General Manager, Operations

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

### 2. Exit Interview

The inspection scope and findings were summarized on June 24, 1986, 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 violation identified in this report has been discussed in detail with the licensee. The licensee provided no dissenting information at the exit meeting.

### 3. Licensee Action on Previous Enforcement Matters and Inspector Follow-up Items (92701 and 92702)

- a. (Closed) Violation 400/83-29-01, "Failure to Control Fastening Material". The inspectors reviewed CP&L's corrective actions to the problem of safety-related items which were found to not be verified as "Q", and those fasteners which could not be confirmed to be the specified material type and grade. CP&L issued procedure AP-XII-04, "Purchasing Bolting Materials", which provided a mechanism by which the licensee's receipt inspection personnel could identify all safety-related fasteners as to "Q" versus "Non-Q" material type and grade, and provided a basis for accepting or rejecting these items. Additionally, the licensee instituted a fastener review program which

required all disciplines to perform an investigation for acceptability of all previously installed fasteners and corrective action, and if necessary, correct and document any identified problems. The inspectors reviewed all pertinent documentation and discussed these findings with the original identifying NRC inspector. The originator of this item concurred that the licensee has taken the proper corrective action and satisfactorily resolved his concerns. This item is closed.

- b. (Closed) Inspector Follow-up Item 400/84-24-05 "Certifications for Plant General Manager". The inspectors reviewed the qualification and training records for the Plant General Manager. As a result, the inspectors determined that the Plant General Manager has been certified at the Harris Plant simulator. This certification, along with previous experience and training, provides sufficient proof that he satisfies the requirements of ANS-3.1 draft copy, dated September 1979 revision, Section 4.2.1. This item is closed.
- c. (Closed) Inspector Follow-up Item 400/85-16-12, TMI Action Item II.D.3 "Relief and Safety Valve Indication". This item was opened, and the status was addressed, in IE Report 400/85-16. At that time, installation of the hardware had not been completed for the pressure-operated relief and safety valve indicators. The licensee informed the inspectors that work had been completed and that the item is ready for inspection. The inspectors reviewed the FSAR, page 29 of the TMI Appendix; Section 7.5.2.2 of the the Safety Evaluation Report; and NUREG 0737, Section II.D.3. The inspectors then conducted a field inspection and verified the following:
- The primary system code safety relief valves (SRV) had limit switches installed which provided safety grade position indication that was displayed on the emergency response facility information system CRT located on the main control board.
  - The primary system code safety relief valves had resistance temperature detectors (RTD) installed upstream of the SRVs as a backup indication for valve seat leakage.
  - Both methods of detection for the SRVs provided an alarm signal input to an annunciator on the main control board.
  - The power operated relief valves (PORV) had valve stem limit switches installed which were powered from a high-reliability power source with battery backup and provided position indication at the control switch on the main control board.

- The PORVs also had an RTD installed downstream in a common header as a backup to indicate seat leakage. This method of detection was also an alarm signal input to an annunciator on the main control board.
- All valve position devices were seismically and environmentally qualified.
- Output from the valve position devices was provided to the safety parameter display system (SPDS).
- Operator response associated with these displays was integrated into procedure and was consistent with emergency operating instructions.

Based on the review of the preceding areas, the inspectors consider that all actions necessary to close this item are complete. This item is closed.

- d. (Closed) Inspector Follow-up Item 400/85-16-13, TMI Action Item II.E.1.2, "Auxiliary Feedwater System Initiation and Flow". The subject item was identified and status provided in IE Report 400/85-16. At that time the indicators and control circuits had not been installed. The licensee informed the inspectors that work to close this item had been completed. The inspectors reviewed the FSAR TMI Appendix, page 31; FSAR Sections 7.2.2, 7.3.1, 7.3.2, 7.5, and 10.4.9; Section 7.3.3.1 of the SER; and NUREG 0737, Section II.E.1.2. The inspectors then conducted a review of applicable logic and flow diagrams and determined that:
- The design provides for the automatic initiation of the AFWS.
  - The automatic initiation signals and circuits are designed so that a single failure will not result in the loss of AFWS function.
  - Testability of the initiating signals and circuits were included in the design.
  - The initiating signals and circuits are powered from the emergency buses.
  - Manual capability to initiate the AFWS from the control room is retained and is implemented so that a single failure in the manual circuits will not result in the loss of system function.
  - The ac motor-driven pumps and valves in the AFWS are included in the automatic actuation (simultaneous and/or sequential) of the loads onto the emergency buses.

- The automatic initiating signals and circuits are designed so that their failure will not result in the loss of manual capability to initiate the AFWs from the control room.
- Safety grade flow indication from one auxiliary feedwater flowrate indicator and safety-grade level indication from one wide range steam generator level indicator for each steam generator is provided.

The inspectors then conducted a field inspection and verified that:

- Instrumentation as required above is installed and the displays in the control room are safety-grade.
- Flow and level instrumentation provide input to SPDS which is available for display on demand.
- Operator response associated with these displays were integrated into procedure and are consistent with emergency operating instructions.

Based on the review of the preceding areas, the inspectors consider that all actions necessary to close this item are complete. This item is closed.

- e. (Closed) Unresolved Item 400/85-37-03 "Plant Organization Chart for Operations". This item involved the identification and responsibilities of the Assistant Plant General Manager. The inspectors obtained and reviewed CP&L's response to this item, which included changes to the Final Safety Analysis Report, Plant Administrative Procedures, and proposed Technical Specifications, in order to verify that the Assistant Plant General Manager's duties and responsibilities have been clearly addressed and identified. This item is closed.
- f. (Closed) Inspector Follow-up Item 400/86-16-01 "Teflon Tape in the RHR System". An inspection of the residual heat removal system (RHR) to compare the as-built plant to the FSAR description identified Teflon Tape on two vent plugs on flow transmitter FT-605A. The use of Teflon Tape is forbidden for in-plant use at the Harris Plant, per Administrative Procedure AP-501. The following steps were taken by CP&L to remove the tape and prohibit its use in the future on in-plant systems:
  - Surveillance Report 86-018-01 was issued by the Quality Assurance Department to document the condition. Surveillance reports remain open and are carried on an open items listing until all conditions have been satisfied.
  - Walkdown inspections were performed by the QA Department to identify any other in-plant areas where Teflon was used. This inspection revealed 13 additional areas. Work requests were issued for its removal.

- A revision of Section 5.9 of AP-501 was scheduled to require that all new equipment purchased for in-plant use will be free of Teflon Tape.
- A control program has been initiated to discover and remove Teflon Tape from in-plant systems.
- Teflon Tape was removed from the supply stock issue counter.

This item is closed.

- g. (Closed) Inspector Follow-up Item 400/86-22-01 "Motor Driven Valve Operators Procedure 1/2-9000-E-06". The inspectors reviewed the licensee's corrective actions to resolve concerns identified in Region II report 400/86-22. The inspectors obtained copies of the test procedures and data sheets to verify that the nonapplicable references have been removed and that the completed data sheets did not contain any blank signature or data spaces. This item is closed.
- h. (Closed) Violation 400/86-24-01 "Failure to Follow Maintenance Procedural Requirements". The inspectors reviewed CP&L's corrective steps taken, and action to preclude recurrence of this item. The licensee repacked the identified valve under Work Request and Authorization 86-ABDZ1 and returned it to service. The licensee changed procedure MMM-012, Maintenance Work Control Procedure, to provide more specific guidance for documenting the "as left" conditions and any other known discrepancies. The maintenance manager held discussions with his supervisors and foremen to clarify the need for documenting equipment status, and the maintenance manager issued a memorandum summarizing this problem and resolutions necessary to correct all identified deficiencies. In addition, all supervisors and foremen were required to review this item with their subordinates. Start-up personnel also have been reminded of all applicable requirements. This item is closed.
- i. (Closed) Violation 400/86-24-02 "Failure to Follow Clearance Procedure". The inspectors reviewed the licensee's response and corrective actions to a violation of Administrative Procedure AP-020, Clearance Procedure. This review included interviews with start-up, operations and maintenance personnel to verify the following:
  - Working engineers were aware of reemphasized importance of restoration of equipment or systems after a clearance is cancelled;
  - Personnel had reviewed Plant Incident Report 86-20 and Shift Note OP-011-86, as required;
  - Personnel were knowledgeable in the area of clearance procedures;

- Activities working in confined spaces were authorized to be in those spaces.

The inspectors documented that the corrective actions as identified in CP&L response letter HO-860304(0) were complete as stated for this violation. This item is closed.

#### 4. Plant Procedures (42400B)

An inspection was conducted to determine if the scope of management controls involved with the plant procedure system is adequate to control operations within ANSI 18.7-1976. Technical specifications had not been issued at the time of the inspection. The inspection included verification of assignment of responsibilities and adequacy of controls and implementation for issuing new and revised procedures, disposing of outdated procedures, controlling temporary changes, preparing and correcting logs, distributing procedures, preparing standing and special orders and providing for periodic review of procedures. The conduct of operation procedures was inspected to insure incorporation of the following:

- Operators' authority for shutting down the reactor when necessary;
- Responsibility to determine cause and authority to restore operation after a scram or other unplanned power upset;
- Requirement to comply with Technical Specifications;
- Operator instructions to believe instrument indications until proven incorrect;
- Standard of conduct for licensed operators;
- Assignment of supervisory personnel to on-call availability.

The inspection also included verification of the requirement to perform a safety review (50.59) of new and revised procedures. A deviation from commitments was identified in the implementation of shift notes. The inspectors verified that administrative controls were established for the issuance of Shift Notes, implementing the requirements of ANSI N.18.7-1976, Section 5.2.4. The inspector reviewed OMM-009, Rev. 1, Shift Notes, which implements ANSI N.18.7, Section 5.2.4. CP&L has assigned responsibilities and methods for issuance, distribution, review, and updating of shift notes. The inspector, on May 25, 1986, also reviewed the implementation of OMM-009 through a detailed examination of the Shift Note book in the control room. Several problems were identified:

- A "for information only" copy of OMM-009, Rev. 0 was in the front of the Shift Note book. Revision 1 was the current revision.

- Shift Note OP-16-86 required a monthly check of the ACP locker contents with no mechanism to insure performance of the check.
- Several shift notes had no shift foreman initials.
- Shift Note OP-010-86, HHSI Flow Test and Cavity Seal Ring Test, had two yellow "Post It Notes" attached to the note that read: (1) "Caution: insure all cavity drains are closed before filling cavity", and (2) "Prior to admitting flow through any valves in steps 2 and 6 insure LSIP suction is lined up to RWST". The use of a stick-on note to update the shift note is contrary to OMM-009, Section 5.3.7, which requires that updates shall require cancellation of the previous note and issuing a new note. This is a failure to follow procedure.
- Shift Note OP-006-86, Start-up Instructions for NSW, had steps 4 and 8 deleted and step 13 changed through a pen and ink change, an additional example of an incorrect update of a shift note.
- OMM-009, Section 5.2, requires the operations supervisor to initiate reviews of all active shift notes once per 30 days and to document the review by initialing and dating the top page of each note. The shift notes were not reviewed once per 30 days. No operations supervisor review had been documented for shift notes since January 25, 1986.

The last three problems identified above are examples of failure to follow procedure OMM-009, which is required by the FSAR-committed operations QA program 90 days prior to fuel load. This is a deviation from the FSAR commitment, "Failure to Review Shift Notes" 400/86-46-01.

Results of the other implementation audits are summarized below:

- Forty-three procedures in each of the service, administrative and training libraries were compared to the master procedure in document control. No discrepancies were found in the service library. The administrative library had two procedures with six expired temporary changes (#1522, 829, 1178, 826, 827 and 856) still attached and one procedure missing. The training library had two procedures with three expired temporary changes (#858, 854 and 739). All these temporary changes had expired at least three months earlier. All of the procedure revisions were current.
- Eight procedures in the control room were verified to be the correct revision and had changes incorporated correctly.
- One individual was interviewed to determine if he had been notified of advanced changes issued to three procedures (LP-P-2001A, B and C) which had been temporarily distributed to him when Revision 2 was the latest revision. He was unaware of the changes. Notification of those possessing temporary controlled copies when a change is made to them is required per procedure RMP-002, paragraph 7.3.2. The advance change

was issued May 5, 1986. The inspectors made this observation on May 22, 1986.

- Plant Emergency Procedure (PEP) Form Files were audited in the administrative library, the technical support library and emergency preparedness storage cabinet (the latter is not a controlled copy). Form PEP-341-1-2, Manual Dose Projection Record Sheet, in procedure PEP-341 was later than the one in the administrative library. Form PEP-362-1-4, Isotope Release Worksheet, and Form PEP-302-1-2, Plant Parameter Information Form, in the technical support library were later than that contained in the associated procedures.
- The list of approved safety reviewers for procedure review was verified to be updated when new people are authorized and deletions are made when reviewers have not been requalified at the interval specified in AP-014, Criteria for Qualified Safety Reviews. No discrepancies were noted.
- The list of temporary changes was audited to verify that they receive a safety review and final approval within proposed technical specification time frame, e.g. two weeks. This is incorporated into AP-07, Temporary and Advance Changes to Plant Procedures. Seven (#s 2970, 2830, 2829, 2824, 2823, 2964, 2951) were found with times exceeding two weeks. All seven were associated with the maintenance department. On March 5, 1986, nonconformance report NCR OP-86-0003 was issued against maintenance for a similar finding. The NCR was closed on March 25, 1986 with engineering resolution in progress to determine correct action. The above temporary changes were issued on or after April 15, 1986. The inspection was conducted on May 22, 1986. The reviews were 8, 5, 5, 3, 5, 17 and 23 days overdue. At the end of this reporting period, the licensee informed the inspectors that corrective action has been taken and they are in full compliance with this procedural requirement.
- Twenty-five final temporary changes and advanced changes were reviewed to verify safety reviews were performed and filed in document control. No discrepancies were noted.
- Document control reviews were verified to be performed as specified in RMP-002, Document Distribution and Control. The reviews verify availability of latest revision and correct incorporation of changes. The inspectors reviewed results of reviews conducted since October 1985. In November 1985 the training library was found to have a high discrepancy rate. Document control personnel provided special training to the affected personnel to prevent future problems. Conclusions associated with the above procedure controls implementation audits follow.

The above items indicate an occasional oversight in controlling procedures. The procedure reviews conducted by the licensee appear to be effective such that a major breakdown in controls would be detected in a timely manner, if

reviews are conducted at the frequency performed in the recent past. This frequency is not defined in a procedure. The expired temporary changes should not cause a problem if the user reads the change carefully since the expiration condition or date is marked on the change. Two areas of concern need to be addressed by the licensee. There are a large number of procedures currently signed-out on controlled temporary distribution. The inspectors estimate that 10 to 20 percent of all procedures may be involved. The inspectors consider the method currently in effect for notifying users of a change is not capable of being timely or reliable. For example, there is no mechanism for document control to know if the user actually is notified of the change. Timeliness is a problem in that, for the user to be notified, the change must be sent to document control, then document control sends the change to the controlled libraries and then the controlled library which issued the temporary distribution copy must identify the user and mail him a notification form. The primary means to insure the latest revision of a procedure is used appears to be the requirement that the user verify that he has the most up-to-date copy. This is accomplished by checking the computer data base. Performance of this is not required to be documented on the procedure.

Reduction of the number of procedures on temporary distribution may be accomplished when the licensee implements "working" file copies as described later in this report. The licensee committed to review the use of, and timeliness of controlled temporary distributed procedures. The other concern involves the practice of the PEP procedure writers revising a form without revising its associated procedure. By doing this, the ability to verify the availability of the latest revision in the normal method is not possible, i.e. the computer data base has only the procedure listed in it, not the form. Also, this results in document control not being properly notified, such that copies can be properly distributed. The licensee committed to issue the currently changed forms and future changed forms as advanced changes. Conclusions and observations associated with procedure program inspection are listed below:

- No provisions for establishing "working" files of frequently used procedures currently exist. The concept has been approved by management but not yet implemented.
- A computerized procedure distribution list is being developed to replace the informal manual system.
- A computer system for scheduling and tracking compliance with the two-year procedure review requirement per ANSI 18.7 is being developed. Prior to fuel load the licensee intends to have all procedures reviewed or revised within the last two years.
- A procedure cross reference to ANSI 18.7 requirements is being developed.
- Field walkdown of procedures are required per Plant Special Order 85-10, dated March 12, 1986. These are in progress. The licensee

intends to have these walkdowns performed prior to fuel load. However, this is a one-time requirement. Procedures do not require or recommend new procedures or major revisions to procedures to be field verified, simulated or walked down. The licensee does not believe such guidance is necessary.

- FSAR commitment to procedure cross reference has not been updated since Amendment 19. The current amendment is 26. AP-006, Procedure and Approval, contains a note which states the preparer (of a revision request) must consider other sources of information such as...FSAR Commitment List". The licensee committed to clarify its intention with regard to maintaining this document as a viable part of its procedure system.
- Procedures do not address a method for correcting an error in an individual copy when one is discovered. The licensee is revising RMP-002 to incorporate this item.
- AP-007, Temporary and Advanced Changes to Plant Procedures, defines a procedure change as "A change (either temporary or advance) to a procedure which does not change the purpose of the procedure". The proposed technical specifications as well as ANSI 18.7-1976, paragraph 5.2.2 address temporary changes as not changing the intent of an approved procedure. The licensee committed to change AP-007 to reflect the wording "intent" instead of "purpose".
- AP-007 provides examples of items which are not to be covered by a change. Several of these examples allow the change to be made provided the change is "supported by approved documentation". Though examples are provided of that the phrase means, it also includes "etc.". The inspector believes that the phrase needs to be better defined. The licensee is considering a more exacting definition.
- AP-007 does not attempt to distinguish between what items can receive a temporary change and which can receive an advance change. Review of some temporary changes (TC) revealed that (1) TC 1174 (February 5, 1986) changed the setpoint on the auxiliary feedwater pump speed controller while in standby mode, 100 percent changed to 20 percent; (2) TC 1527 (February 13, 1986) added provisions for adding resin to the boron thermal regeneration system; (3) TC 1183 (January 6, 1986) deleted independent verification from procedure OP-108, Boron Thermal Regeneration System; and (4) TC 89 (November 8, 1984, still in effect) provided steps for handling incorrect materials in PMC-002, Material Control Receiving. Items 1-4 are outside the scope of what is normally allowed for non-intent changes. The licensee committed to provide additional guidance of proper use of temporary changes and provide training to appropriate personnel.

The above items which contain the phrase "the licensee committed to" were acknowledged by the licensee and resolution of these will be tracked by the licensee's "CAP" program. These items will be reviewed in a future inspection.

The inspectors performed a review of the electrical lineup of OP-155, Diesel Generator Emergency Power System. Revision 1 was issued on December 19, 1985 and includes three subsequent temporary changes, 1210 issued January 1, 1986, 1214 issued January 3, 1986, and 1524 issued January 30, 1986. Power panel DP 1A11 circuit #8 was not included in the lineup for diesel generator 1A-SA. The circuit powers the local annunciator panel associated with the engine. The inspector also observed that some apparently obvious items such as starting air compressors being numbered differently from that in the field, 480V breakers listed as part of 125V power panels and sign offs with verification were required for steps that required no action had not been identified, even though the procedure had already been performed to support start-up testing. The inspectors discussed this apparent lack of attention, by operations personnel, with CP&L management.

Except as noted, no violations or deviations were identified.

#### 5. Safety Committee Activity (40301B)

The inspectors evaluated the documented program for CP&L's off-site nuclear review group. The group has been designated as the CP&L Corporate Nuclear Safety and Research Department (CNS). The department is broken down further to include an "On-Site Nuclear Safety sub-unit (ONS) and an Off-Site Nuclear Safety Review sub-unit (NSR). The ONS units are located at each of the CP&L nuclear sites to evaluate and review plant activities first hand. Each ONS unit has a director who reports to the manager of CNS; the NSR sub-unit is also headed by a director reporting to the manager of CNS.

The CP&L Corporate Nuclear Safety Instructions and Procedures, CNSI-1 and CNSP-1, define the off-site unit's responsibility for independent review and feedback of company internal events. The inspectors evaluated procedure CNSP-4 and found it to sufficiently address the following:

- The independence of the group members;
- The group does not use the committee concept, thus eliminating the need for designating alternate members;
- The requirements for maintaining and distributing records of the group activities;
- The lines of communications and interface between the on-site and the off-site units;
- The provisions for follow-up action to resolve identified deficiencies.

The inspectors evaluated procedure CNSP-3. The procedure was found to contain requirements to assure that those subjects identified in Section 6 of the Technical Specifications will be reviewed and accessed by the off-site review group.

The inspectors reviewed the documented results of six recent instances where the ONS and the NSR personnel conducted evaluations of site events. The evaluations were made to determine the significance of the events, corrective actions needed, and recommendations for corrective actions to prevent recurrence.

No violations or deviations were identified.

6. Comparison of As-Built Plant to FSAR Description (37301)

- a. The inspectors selected 14 safety-related systems and evaluated the up-to-date status of drawings and documentation utilized in the control room for each. The systems selected were those that had previously been walked down by the inspectors to compare the as-built system status to the latest drawing revision.

The latest revision and Field Change Notices were reviewed for the specified control room drawings and applicable Field Change Requests and compared to the latest revision and Field Changes listed in the drawing control log and the the document control center. This review consisted of 52 drawings and applicable Field Change Requests associated with these systems. Only nine of the 52 drawings had open FCRs. Three of the nine drawings had two open FCRs on each and the remaining six had only one open FCR.

- b. During this inspection period the inspectors, accompanied by the applicable start-up engineer, performed a walkdown of the main feedwater system on June 5, 1986. The purpose of the walkdown was to evaluate system completion and comparison to system flow diagram drawing CP&L 2165-S-0544. The following items were evaluated:
- Proper location, configuration, identification, and damage, if any;
  - Installation in accordance with approved drawings, procedures, and instructions;
  - Attachments properly installed;
  - Fastening material type, identification, and torquing;
  - Interferences identified;
  - Inspection personnel qualifications;
  - Inspection results and nonconformances properly documented.

Results of this inspection include the identification of several minor discrepancies which are being tracked and corrected by the licensee. The inspectors will continue to monitor the licensee's completion of these activities during future inspections. No violations or deviations were identified.

7. Preoperational Test Program Implementation Verification (71302)

- a. The inspectors conducted routine tours of the facility to make an independent assessment of equipment conditions, plant conditions, security, and adherence to regulatory requirements. The tours included a general observation of plant areas to determine if fire hazards existed; observation of activities in progress (e.g., maintenance, preoperational testing, etc.) to determine if they were being conducted in accordance with approved procedures; and observation of activities which could damage installed equipment or instrumentation. The tours also included evaluation of system cleanliness controls and a review of logs maintained by test groups to identify problems that may be appropriate for additional follow-up.
- b. During the week of May 26, 1986 the inspectors witnessed the in-process heat treatment of the two inside rows of steam generator tubes in an effort to relieve potential stress points created when forming the "U" bends. The inspectors reviewed the process procedures and the data collected.

Westinghouse representatives made a presentation to the inspectors during the previous week on the heat treatment proposed for the generator tubes in rows one and two of each of the three steam generators. The treatment was believed to be necessary for only the first two rows, resulting from their radius bends being greater and yielding a potential stress point on the inside of the bend. At this stress point, an outward indication had been identified in other "D" type steam generator tubes. This indication is located in the downstream portion of the bend and was referred to as "the Blairsville bump".

The Harris facility was the first of a series of plants to implement this stress relieving process for the 228 tubes in each of the three generators. Data for the process was obtained from laboratory experience.

The process involved inserting electrical heater rods through the tubes and heating to a temperature of 1340 degrees F for approximately ten minutes with a specified tolerance of plus or minus 100 degrees F. All work was performed by the Westinghouse Company and to the Westinghouse Quality Assurance Program. This stress relieving effort was completed on May 29, 1986.

Eddy current testing was performed by CP&L to evaluate the effect of the heat treatment process on the subject tubes. Test results did show

some difference between the before and after heat treatment process. Evaluation of these results is in progress.

- c. The inspectors performed a follow-up on the "B" diesel engine trip problems encountered during the one hour test run at full load capacity associated with preoperational test 1-5095-PO2. The engine trips resulted from a signal received from the vibration sensor mounted on the left side of the turbo charger and occurred within a 20 minute time period after applying the 6.5 megawatt load to the unit.

The cause was initially diagnosed as being a bad sensor. The sensor was replaced and the problem continued. The problem was again evaluated in more detail and the following areas were identified:

- The replacement vibration switch was determined to be defective.
- The turbo charger was not properly aligned with the air inlet piping.
- Some rust was found on the mounting surface at the point where the turbo charger fastens to the engine, and the engine mating surface did not meet the required flatness.

The three areas identified above were corrected and the one hour run with 6.5 MW power load was completed without further interruptions on June 7, 1986. Preoperational test 1-5095-PO2 further required that the engine be started 35 consecutive times without failure and run at greater than 50 percent load for a period of one hour each. This section of the test was successfully completed on June 10, 1986. An uninterrupted 24 hour endurance run at full load must be performed per preoperational test 1-5095-PO4, prior to meeting the full compliment of the testing requirement.

- d. During a routine review of selected Nonconformance Reports (NCRs) generated by the on-site Operations Quality Assurance organization, the inspectors obtained copies of these documents and reviewed them to insure that:
- The NCRs were generated in accordance with the approved procedure (QAP-104);
  - Required responses from the NCR subject organization were received in the required time constraints;
  - QA personnel reviewed and signed the document upon completion of all acceptable corrective actions;
  - QA personnel were trained and knowledgeable in the use procedure QAP-104.

This review identified several minor concerns which the licensee immediately corrected to the satisfaction of the inspectors. Additionally, the inspectors questioned QA management as to the status of the Operations Quality Assurance Procedure (OQA-104) which will replace QAP-104 in the near future. QA management agreed to review OQA-104 to insure it was written in a reliable and usable fashion. The inspectors will evaluate the new OQA-104 during future inspections.

- e. During this inspection period the inspectors conducted tours of the fuel handling building to observe work in progress. The inspectors witnessed operations personnel, operations quality control, operations quality assurance, technical support, and fuel vendor personnel during the performance of fuel movement. This inspection was performed to verify that:
- An approved procedure, used for receipt inspection, fuel movement and fuel storage, was available and in use;
  - A qualified operator was in control of all fuel movement;
  - An approved load path was used for all fuel movement;
  - Changes to the approved procedure were documented and all necessary approvals were obtained prior to implementation of the new procedure;
  - Building security was implemented as required by established procedures;
  - Health physics personnel controlled access to and from all identified radiation control areas, in accordance with established procedures.

The inspectors did not identify any discrepancies which had not been identified and documented previously by the licensee. The inspectors will continue their inspection effort in this area in future report periods.

- f. During tours of the control room, reactor auxiliary building, turbine building, diesel generator building, fuel handling building and other selected site areas, the inspectors identified several problem areas with respect to general plant housekeeping. These areas were identified as level IV construction control areas and areas under control of the operations group. This inspection identified the following discrepancies:
- A soft drink can was discarded in the spent fuel pool (level IV);

- Main control board back panels were littered with cigarette butts, paper, peanut shells, and miscellaneous work debris, i.e. tape, plastic wrappers, and tags.
- Rooms 387A and 384 (level IV) contained numerous cigarette butts, paper trash, and miscellaneous work debris;
- Process instrumentation cabinets contained foreign debris in the bottom of the observed open cabinets, such as nuts, bolts and plastic tie wraps.

Administrative Procedure AP-X-02, Project Housekeeping, requires that personnel restrict activities which would create hazardous conditions for material and equipment protection or for health and fire hazards. Contrary to this requirements, the inspectors have identified numerous discrepancies which are identified as a violation, "Housekeeping Procedures," 400/86-46-02.

Except as noted, no violations or deviations were identified.

8. Testing of Pipe Support and Restraint Systems (70370B)

The inspectors toured areas of the reactor auxiliary and containment buildings. Seven struts, eight spring can supports and eight mechanical snubbers were observed. Visual examinations were conducted to check for deterioration and physical damage of the mechanical snubbers. Visual examinations were also conducted to check proper installation of base support plates, fasteners, locknuts, brackets and clamps for fixed pipe supports.

No violations or deviations were identified.

9. Other Activities (94300B)

On May 22, 1986, the Region II Acting Director for the Division of Reactor Projects and the Harris Site Region II Reactor Projects Section Chief visited the Harris Plant. Their agenda included a briefing by CP&L concerning the status of the project overview, construction, start-up (status of systems, buildings, preoperational testing and procedures), and readiness for plant operations (staffing, training, and procedures). Following the briefing a tour was made throughout the plant site, concluded by a meeting with the resident inspectors.