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

JUL 09 1986

Report No.: 50-400/86-45

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

Docket No.: 50-400 License No.: CPPR-158

Facility Name: Harris 1

Inspection Conducted: June 16-20, 1986

Inspectors: A. E. Tabaka 7/8/86
A. E. Tabaka Date Signed

J. R. Decker for 7/8/86
A. Gooden Date Signed

Approved by: J. R. Decker 7/8/86
T. R. Decker, Section Chief Date Signed
Emergency Preparedness Section
Division of Radiation Safety and Safeguards

SUMMARY

Scope: The purpose of this special, announced inspection was to evaluate the applicant's responses and corrective actions with respect to the improvement items, incomplete items, and other remaining inspector follow-up items identified during the emergency preparedness appraisal conducted March 4-15, 1985, and the follow-up inspection conducted November 18-22, 1985.

Results: Of the 31 items inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

J. L. Willis, Plant General Manager
*C. R. Gibson, Assistant to the Plant Manager
*J. L. Harness, Assistant to the Plant Manager
*R. G. Black, Manager, Emergency Preparedness
*D. Tibbitts, Regulatory Compliance
*M. G. Wallace, Specialist, Regulatory Compliance
*A. W. Powell, Training Director
*A. Howe, Regulatory Compliance
*A. L. Garrou, Senior Specialist, Emergency Preparedness
R. C. Loury, Emergency Preparedness Consultant (NUS)
R. Johnson, Specialist, Emergency Preparedness
*J. M. Collins, Operations Manager
*G. C. Forehand, Director of QA/QC, Construction
*D. C. Whitehead, Operations QA Supervisor
*C. L. McKenzie, Acting Director, QA/QC - Operations
*A. L. Stanley, Project Specialist, Training
*H. R. Goodwin, Senior Specialist, Emergency Preparedness
*B. D. McFeaters, Corporate Emergency Preparedness
G. V. Meyer, Regulatory Compliance (NUS)
D. L. Simerly, Start-up Engineer
G. M. Stokes, Senior Specialist, Fire Protection
D. R. Mijanovich, Start-up Engineer
T. C. Dunn, Junior Writer - Public Information
M. S. Harris, Manager of News Services
J. H. Eades, Senior Engineer
H. L. Carter, Shift Foreman
D. G. Batton, Shift Foreman
H. L. Carter, Shift Foreman
D. K. Thornburg, Control Operator
D. H. Corlett, Control Operator
J. D. Davis, Senior Reactor Operator
J. R. Burgess, Auxiliary Operator
J. L. Kneece, Auxiliary Operator
E. D. Harris, Auxiliary Operator
T. L. Priester, Lt. Site Security
W. P. Carter, Computer Specialist
B. O. Sears, Environmental and Chemistry Foreman
E. Willis, Radiation Control Technician
J. B. Henderson, Project Specialist - License Training
D. R. Elkins, Radiation Control Foreman
A. L. Stanley, Project Training Specialist
I. Unrad, Assistant Engineer (VT Technologies)

R. A. Fredrick, Project Engineer (VT Technologies)
D. A. Braund, Site Security Supervisor
G. G. Campbell, Maintenance Manager
J. Bullock, Principal Engineer - Process Computer
B. F. Skaggs, Start-up Engineer
J. M. Stamm, Staff Analyst
E. A. Stafford, Senior Control Operator
W. R. Ponder, Start-up Engineer

NRC Personnel

*T. R. Decker, Chief, Emergency Preparedness Section
*W. M. Sartor, Senior Radiation Specialist
*W. E. Holland, Resident Inspector, Watts Bar
S. Burris, Resident Inspector, Shearon Harris

*Attended exit interview

2. Exit Interview (30703B)

The inspection scope and findings were summarized on June 20, 1986, with those persons indicated in Paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. No objections to the findings were expressed at the exit.

3. Applicant Action on Emergency Preparedness Improvement Items (25555B)

Applicant action on improvement items identified during the March 1985 appraisal was evaluated. The bracketed numbers at the beginning of the paragraphs correspond to the item numbers used in Appendix B to the letter of April 22, 1985, which transmitted NRC Report No. 50-400/85-09.

a. [14] (Closed) Improvement Item (400/85-09-47): Adding an introduction, names of contact persons for State and local agencies, NRC phone numbers, and page numbers to the various attachments of the emergency phone list. Attachment 2 to the emergency phone list, PSO-85-002, Rev. 7, contained an adequate introduction on the scope and usage of the procedure, the appropriate NRC telephone numbers, and the contacts for the State and local agencies. The State and local entities are multiply listed under name of contact, organization, and position. Attachment 1 also included page numbers for those personnel required to have them.

b. [33] (Closed) Improvement Item (400/85-09-82): Demonstrating the capability to perform staff augmentation within the applicable time frames, and the acquisition of equipment to aid augmentation. The applicant held an augmentation drill on May 21, 1986, during off-normal hours. The results indicated that personnel augmentation could be performed within the limits specified in Section 2.2.2 and Table 2.2-1 of the Emergency Plan. A pager system has been incorporated into the

procedure such that key response personnel may be contacted by a single phone call. Selective paging is also possible.

c. [34] (Closed) Improvement Item (400/85-09-83): Conducting additional communications training for control room personnel, as appropriate. The inspector conducted walkthrough evaluations with control room personnel assigned as emergency communicators to the emergency organization. The walkthrough evaluations involved the procedures for notification of onsite and offsite personnel. Actual notification of State and local agencies was observed using the Automatic Ringdown (ARD) system. Personnel appeared cognizant of their responsibilities and demonstrated their knowledge and ability to use the applicable procedures.

4. Applicant Action on Incomplete Emergency Preparedness Items (25555B)

The inspector evaluated the remaining areas of the applicant's emergency preparedness program that were found to be incomplete after the November 1985 inspection. The bracketed numbers at the beginning of the subparagraphs correspond to the item numbers used in Appendix C to the letter of April 22, 1985, which transmitted NRC Report NO. 50-400/85-09.

a. [3] (Closed) Incomplete Item (400/85-09-06): Completing Emergency Response Facility Information System (ERFIS) training upon completion and start-up of the system. Revision 6 of the Onsite Emergency Organization Chart and the EOF Organization Chart dated May 14, 1986, (contained the names of personnel assigned as ERFIS Console Operators and Accident Assessment Team Members), was compared against the computer records and manual tracking system for training to verify that all operators have received training on ERFIS. Although system software problems still existed, ERFIS training had been provided to control room personnel, TSC staff, and EOF personnel with responsibility as ERFIS operators.

b. [4] (Closed) Incomplete Item (400/85-09-07): Completing training for onsite warning signals, personnel muster/assembly, and training for Assembly Area Leaders. The inspector reviewed training records for 15 of 35 Assembly Area Leaders as listed on the Onsite Emergency Organization Chart (Revision 6, dated 2/5/86). These records indicated that training had been completed in accordance with required training for personnel assigned to the emergency organization.

c. [7] (Closed) Incomplete Item (400/85-09-10): Completing training for augmentation personnel and non-badged site personnel. A review of Procedure TI-302, "Emergency Plan Training," indicated a program is in place for addressing the training of non-badged site personnel and augmentation personnel; however, this training will not be implemented until after security lockdown in July 1986. The inspector reviewed training records and lesson plans for offsite support organizations in addition to reviewing the training records for selected personnel serving as alternates on the emergency organization chart. No

discrepancies were noted. Based on the review process, it appears the applicant's program is in place for addressing training requirements of any individual or organization requiring access at SHNPP during an emergency.

d. [8] (Closed) Incomplete Item (400/85-09-11): Completing GET training for all personnel onsite to be badged to enter the protected area. A review of the applicant's training procedure (TI-302) indicated that all personnel permitted unescorted access at SHNPP shall receive General Employee Training (GET). Additionally, all personnel assigned to the Emergency Response Organization shall receive GET II. Several names were selected from different positions on the Emergency Organization Chart to determine if GET I and/or GET II had been completed. Documentation verified that GET initial and retraining is being provided in accordance with training requirements. A computerized tracking system known as Nuclear Educational Tracking System (NETS) is used in tracking the status of personnel training. A random selection of names (permanent/contractor) from the NETS Employee roster compared against the computer records indicated that GET is being tracked for scheduling, completion, and retraining in accordance with the Nuclear Operations Training Instructions Manual. Although the GET is not complete at this time, a weekly status report is generated for projecting the number of employees remaining to be trained. The inspector was provided a copy of the weekly report for June 13, 1985, that summarized the remaining CP&L and contractor employees requiring training as of that date. According to an applicant representative, all CP&L employees, as of June 30, will have completed GET and badging in anticipation of security lockdown. Contractor personnel training is ongoing and will continue to be tracked and scheduled as necessary.

e. [10] (Open) Incomplete Item (400/85-09-13): Completing the installation and testing of accident detection and mitigation equipment such as the RMS, ERFIS, and Main Control Boards. The installation and testing of accident detection and mitigation equipment had not been completed. Discussions with applicant representatives and records review indicated equipment installations have been made; however, the system testing was incomplete at this time.

f. [11] (Closed) Incomplete Item (400/85-09-14): Completing the training and qualification for control room personnel upon all equipment used in the detection, classification, notification, and protective action recommendation preparation, and demonstrating the capability to adequately perform same. The inspector conducted interviews with various members of the applicant's training staff, and reviewed training records for operations personnel assigned to the emergency organization. Walkthroughs were conducted with control room personnel in the areas of event detection, classification, notification, and protective action recommendations. No discrepancies were noted during the training records review, and personnel interviewed during the walkthroughs demonstrated familiarity in the areas of assigned responsibility to the emergency organization.

g. [15] (Open) Incomplete Item (400/85-09-19): Completing installation and testing of ERFIS and supporting systems in the TSC. The installation of ERFIS consoles has been completed; however, the system is now in the final stages of problem resolution. This includes design problems associated with both hardware and software. The construction turnover to systems testing was completed in January 1986. The applicant is maintaining a tracking system known as the ERFIS open items list. An applicant representative advised that the vendor is committed to a July 1986 completion date for these ERFIS outstanding items.

h. [16] (Closed) Incomplete Item (400/85-09-20): Completing training and qualification of Technical Support Center personnel upon all equipment used in the classification, notification, and protective action recommendation preparation, and demonstrating the capability to adequately perform same. The inspector reviewed training records of personnel assigned key positions to the TSC emergency response organization. This included personnel assigned to the Accident Assessment Team, Plant Operations Director, Damage Control Coordinator, Site Emergency Coordinator, Dose Projection Team Leader, and other key positions. In addition, the inspector conducted walkthroughs with the Site Emergency Coordinator and a TSC ERFIS Console Operator. No discrepancies were noted during the training records review, and personnel interviewed during walkthroughs demonstrated familiarity in the areas of responsibility and the availability of decisional aids and equipment for use in the TSC during an emergency.

i. [17] (Open) Incomplete Item (400/85-09-25): Installation and testing of ERFIS in the EOF. All ERFIS terminals in the EOF have been installed; however, the system testing has not been completed. An applicant representative demonstrated the operability of the system using two of the four ERFIS consoles in the EOF. The inspector was informed that testing will be completed following the resolution of hardware and software design problems.

j. [18] (Closed) Incomplete Item (400/85-09-27): Equipping the turbine building first aid room, and assembling and distributing the onsite ambulance kit. The inspector conducted a walkthrough of the turbine building and observed that construction was complete within the area identified as the first aid room and decontamination facility. First aid equipment and supplies were available as listed in PEP-391. Also in accordance with PEP-391, supplies that comprise an onsite ambulance kit were stored inside the emergency cabinet located in the security building.

k. [19] (Closed) Incomplete Item (400/85-09-28): Finishing construction of and equipping the turbine building decontamination facility, and equipping the waste processing building and TSC decontamination facilities. Supplies and equipment were available in each of the decontamination facilities in accordance with the inventory listing. Preliminary testing had been done on the laundry and hot shower drain

system into which the shower drainage from the turbine building and TSC decontamination facilities will flow; however, the system had not been turned over from construction to operations. The final placement of certain supplies for the waste processing building decontamination facility awaits construction turnover.

l. [21] (Closed) Incomplete Item (400/85-09-30): Verifying operability and accuracy of inplant capabilities for detecting airborne iodine in the presence of noble gases. The inspector discussed with an applicant representative the screening technique that was used for iodine verification and reviewed the analytical results (applicant report #TDR-EC-001, Rev. 0, titled "I-131 Spiked Charcoal Cartridge") along with the raw data that generated these final results.

m. [24] (Closed) Incomplete Item (400/85-09-33): Reviewing the area of nonradiation process monitors. Based on discussions with applicant representatives during a control room walkthrough and a review of system start-up records, the installation of systems used in the emergency classification process has been completed. The readouts and/or alarms for the nonradiation process monitors (including the boric acid tank level) had been installed. The inspector reviewed records to verify final system turnover for the following monitors: incore cooling, reactor coolant, Chemical Volume Control System, containment spray, hydrogen post accident sampling system, main steam system, steam generator system, and the condensate system. The inspector was informed that most systems are now in the preoperational testing stage.

n. [25] (Closed) Incomplete Item (400/85-09-36): Deploying Scott Air Packs and extra air bottles as found in onsite emergency facility inventory list, and completing the refill-storage area on the 261 level of the turbine building. The inspector inventoried each facility and found that the Scott Air Packs and extra air bottles were in accordance with the facility inventory sheet. The equipment for refilling the Scott Air Packs was installed, but not operational. Based on this finding, a new item is opened. Inspector Follow-up Item (400/86-45-01): Completion of the installation and testing of the air tank refilling equipment located at the 261 level of the turbine building.

o. [28] (Open) Incomplete Item (400/85-09-39): Completing full functional testing of the onsite PA system. The inspector reviewed documentation (Test #1-6030-P-01) of the PA functional tests for zones A and C (control block). These tests were performed during the period February/March 1986 in conjunction with hot functionals. All problems encountered were documented and corrected. Further PA system testing for the remaining zones (including the Diesel Generator Building, Security Building, and perimeter areas) is scheduled to begin June 23, 1986.

p. [38] (Closed) Incomplete Item (400/85-09-64): Completing of training on evacuation alarms and procedures for all permanent employees. Training on evacuation alarms and procedures is part of the applicant's General Employee Training (GET) program. The inspector reviewed lesson plans and GET records for those employees who are or will be badged for unescorted plant entry. Although the training of all such employees is incomplete, a review of the documentation indicated that the program is in place and the personnel are being trained (including evacuation alarms). Training for all personnel should be completed prior to security lockdown scheduled for July 21, 1986. Discussions with applicant representatives also indicated that a test of the various emergency alarms was conducted each Friday morning. The inspector observed such a test. Each alarm was identified and sounded, including the fire, area evacuation and the site evacuation alarms.

q. [39] (Closed) Incomplete Item (400/85-09-65): Reviewing personnel accountability procedures. The inspector reviewed the procedures used for accountability of personnel during an emergency. These procedures rely on the use of the card reader access system to determine which employees are onsite. In an emergency, an accountability printout would be obtained listing all onsite employees according to assembly area. Each listing would then be distributed for use. The inspector reviewed such a printout, it appeared adequate. Currently, the central card readers are being used by approximately one-third of the site employees. All employees should be badged and entered into the system pending completion of GET by security lockdown in July. The inspector also reviewed the operability of the other card readers onsite which may be used for sector accountability in the event that further accountability is needed. These systems have been tested and are operational; however, final site acceptability tests have not been performed.

r. [40] (Closed) Incomplete Item (400/85-09-66): Reviewing the security program during emergencies. This item was reviewed against 10 CFR 73, Appendix C by W. J. Tobin during an inspection conducted March 10-13, 1986. This item is closed per NRC Report No. 50-400/86-13.

s. [47] (Closed) Incomplete Item (400/85-09-76): Completing the placement of public notices for transients. The inspector discussed the various aspects of the public information program with representatives from the corporate news department. They indicated this program area had been fully implemented. The inspector verified that the public information signs had been placed around Harris Lake, that the public telephones within the ten-mile EPZ had information stickers placed on them, and that information brochures had been placed at the appropriate motel (only one within the ten-mile EPZ). Other distribution points include local law enforcement agencies, the Apex and Fuquay libraries, and Apex Rescue Squad. The parties also discussed other on-going public awareness programs, including: the second issuance of the information brochures to permanent residents and school children, the distribution

of a newsletter dealing with current nuclear issues, and open-forum public meetings being held.

t. [48] (Closed) Incomplete Item (400/85-09-77): Reviewing program implementation. The applicant has implemented the annual exercise program with the first exercise completed in May 1985. The next exercise is tentatively scheduled for September 1986. The inspector reviewed drill and practice exercise records which indicated that this program area is also being implemented. These records showed that critiques were being held following the drills, the results of which are provided to plant management, and appropriate corrective actions are being taken. In addition, the applicant has included EP commitments and drill requirements in PLP-103 "Surveillance and Periodic Test Program," for tracking and scheduling purposes.

u. [49] (Closed) Incomplete Item (400/85-09-84): Reviewing of dose calculations and protective action decisionmaking. The inspector conducted interviews and walkthrough evaluations with three Shift Foremen and a limited number of his watch organization. The Shift Foreman had available to him one Control Operator (performs dose assessment) and one Auxiliary Operator (becomes emergency communicator). The operators were presented with several accident scenarios and asked to classify them, recommend protective actions, as necessary, and perform notifications and dose projections upon request by the Shift Foreman. Each of the three groups understood their roles in the organization and were familiar with the procedures assigned for their positions. The dose assessment was manually performed in an accurate and timely manner, and the notification to the State and local agencies was made in accordance with the procedure (as discussed previously). The Shift Foremen made timely classifications and recommendations for offsite protective actions. They understood that recommendations could be changed subject to adverse conditions such as weather. They were also familiar with the various offsite groups that were available for assistance, and the various types of onsite notifications that might be necessary.

5. Applicant Action on Other Inspector Follow-up Items and TMI Action Items (25555B)

The inspector evaluated the applicant's action on the items identified during the November 1985 and May 1985 inspections, and on the TMI action items remaining in the area of emergency preparedness.

a. (Closed) Inspector Follow-up Item (400/85-46-01): Modifying the Unusual Event Matrix in PEP-101 to include any event causing rapid depressurization of the secondary side. Figure 4.1-1 of PEP-101, dated February 1986, includes the general initiating condition "rapid depressurization of the secondary side." The matrix now encompasses any event causing this condition instead of just the particular events specified previously.

b. (Closed) Inspector Follow-up Item (400/85-46-02): Verifying TSC positive pressure specification. The inspector reviewed the TSC ventilation preoperational test #1-8565-T-01 conducted on June 3, 1986. The test confirmed that a positive air pressure of 0.125 inches of water could be maintained in the TSC. During the initial stages of the functional test, the door seals had to be adjusted in order to maintain the necessary pressure. Due to the frequent use of the doors into the TSC, it was suggested that a periodic check be made to ensure that the sealing material remains in place so proper functioning can always be assured. The applicant committed to such a maintenance program in a letter to C. Gibson dated June 19, 1986. The particulars of the program are still being developed. The inspector did observe the operation of this system and verified that the pressure could indeed be maintained at the required level.

c. (Closed) Inspector Follow-up Item (500/85-20-01): Developing procedures for aerial monitoring. The applicant has developed Procedure RC-EM-9, "Helicopter Operation in Support of Emergency Environmental Surveillance." This procedure describes the minimum equipment required on board the helicopter and provides for exterior contamination surveys. Use of the helicopter is intended only to qualitatively define the plume boundaries. The procedure does not specify a contamination survey of the pilot (non-CP&L personnel) prior to releasing him, nor does the survey require any special attention to the helicopter air intakes. Although not reviewed, maps for use in the helicopter have been developed and coordinated with the pilot and the Environmental Coordinator. A new radio had been installed in the EOF to be used for communication with the helicopter. Broadcast will be in the clear vise in scrabble mode as is the practice with the ground field teams. The radio communication was not demonstrated during this inspection.

d. (Closed) IE Bulletin 79-18: Reviewing the audibility of evacuation alarms in high noise areas. The applicant is addressing this item in conjunction with its PA system testing program. All PA checks are being performed under operational noise conditions (i.e., during hot functionals); thus, the consideration being given to this item is adequate. As discussed previously, the PA testing is incomplete, and specifically one high noise area has yet to be evaluated, the diesel generator building. Based on these findings, a new item is opened. Inspector Follow-up Item (50-400/86-45-02): Completion of alarm audibility testing in high noise areas.

e. (Open) TMI Action Item III.A.1.2. (400/85-16-25): Upgrade Emergency Support Facilities. The Shearon Harris emergency response facilities have been previously evaluated during the March 1985 appraisal and the May 1985 emergency exercise. The results of these inspections are documented in NRC Report Nos. 50-400/85-09 and 50-400/85-20, respectively. Upon reevaluation of the identified items, the applicant's action in this area appears complete with the exception of ERFIS. As discussed previously in this report, this system is not yet

fully operational due to software and hardware problems. The items include (but are not limited to): (1) completing the data link to the Radiation Monitoring System, (2) calculating stability class using actual meteorological data, (3) making operational the data link with the met. tower such that 15-minute updates are received, and (4) completing the general operation testing of ERFIS software to ensure the validity of all data points.

f. (Open) TMI Action Item III.A.2 (400/85-16-26): Emergency Preparedness - Long Term. This area has been previously evaluated during the March and May 1985 inspections. The results of which were documented in NRC inspection reports 50-400/85-09 and 50-400/85-20, respectively. Reevaluation of this program area during this inspection indicates that three items remain to be completed, all of which have been previously addressed in this report. These items are completing the PA system functional testing, evaluating the audibility of alarms in high noise areas, and completing final operational testing of ERFIS.