

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199



Report No.: 50-400/94-05

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

Docket No.: 50-400

Licensee No.: NPF-63

Facility Name: Harris 1

Inspection Conducted: January 15 - February 18, 1994

Inspectors: J. Pedrow, Senior Resident Inspector

3/3/94
Date Signed

D. Roberts, Resident Inspector

3/3/94
Date Signed

Approved by: H. Christensen, Section Chief
Division of Reactor Projects

3/4/94
Date Signed

SUMMARY

Scope:

This routine inspection was conducted by two resident inspectors in the areas of plant operations, safety system walkdown, cold weather preparations, review of nonconformance reports, followup of onsite events, maintenance observation, surveillance observation, design changes and modifications, system engineering, plant housekeeping, radiological controls, security, fire protection, preparations for refueling, review of licensee event reports, and licensee action on previous inspection items. Numerous facility tours were conducted and facility operations observed. Some of these tours and observations were conducted on backshifts.

Results:

Two violations with multiple examples were identified: Failure to implement procedures properly, paragraph 2.c., 2.d(2) and 4.a(1); Failure to implement corrective actions, paragraphs 2.d(1) and 2.e.

A non-cited licensee identified violation regarding control of locked high radiation areas is discussed in paragraph 5.b.

Several areas of improvement were noted: Operator identification and response to a failed condensate booster pump recirculation valve prevented a potential plant trip, paragraph 2.a(1)(a); The number of operator standing orders was reduced, paragraph 2.a(1)(b); Operator turnover process strengthened by daily meetings with work control/managers, paragraph 3.a(1); The average age of

maintenance backlog tickets has been reduced, paragraph 3.a(2); Assessments of the maintenance functional area were good, paragraph 3.a(3); Preliminary efforts for outage safety-related breaker replacement modifications were beneficial, paragraph 4.a(2); Good technical support was evident during a plant downpower, paragraph 4.b(1); Conduct of testing for the new security perimeter fence was good, paragraph 5.c(1); Fuel receipt inspection activities were found to be very thorough, paragraph 6.a; and scheduling of safety train outages was effective, paragraph 8.a.

Several weaknesses were also identified: classification of emergency work was too general, paragraph 3.a(4); poor initial written safety evaluation for a plant modification, paragraph 4.a(3); superior housekeeping standards were not being maintained in several plant areas, paragraph 5.a; deficiencies were identified in the new security perimeter fence, paragraph 5.c(1); poor escort control of visitors was noted, paragraph 5.c(2); receipt inspection of Siemens fuel indicated quality problems with the manufacturing of new fuel, paragraph 6.a; and improvement was needed in the licensee's safe shutdown analysis, paragraph 8.c.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *D. Batton, Manager, Work Control
- *B. Christiansen, Maintenance Manager
- *J. Collins, Manager, Training
- *M. Hamby, Manager, Regulatory Compliance
- *J. Dobbs, Manager, Outages
- *J. Kiser, Manager, Radiation Control
- *D. McCarthy, Manager, Regulatory Affairs
- J. Moyer, Manager, Site Assessment
- *R. Prunty, Manager, Licensing and Regulatory Programs
- *W. Robinson, Vice President, Harris Plant
- *W. Seyler, Manager, Project Management
- H. Smith, Manager, Radwaste Operation
- *D. Tibbitts, Manager, Operations
- B. White, Manager, Environmental and Radiation Control
- *O. Wilkins, Manager, Spent Fuel
- *L. Woods, Manager, Technical Support
- *M. Worth, Manager, Onsite Engineering

Other licensee employees contacted included office, operations, engineering, maintenance, chemistry/radiation and corporate personnel.

*Attended exit interview

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

2. Operations

a. Operational Safety Verification (71707)

The plant continued in power operation (Mode 1) for the duration of this inspection period.

(1) Shift Logs and Facility Records

The inspector reviewed records and discussed various entries with operations personnel to verify compliance with the Technical Specifications (TS) and the licensee's administrative procedures. The following records were reviewed: shift supervisor's log; control operator's log; night order book; equipment inoperable record; active clearance log; grounding device log; temporary modification log; chemistry daily reports; shift turnover checklist; and selected radwaste logs. In addition, the inspector independently verified clearance order tagouts.



The inspectors found the logs to be readable, to be well organized, and to provided sufficient information on plant status and events. Clearance tagouts were found to be properly implemented.

- (a) On January 24, 1994, at approximately 5:30 a.m., a control room operator noticed that the "B" condensate booster pump recirculation valve (ICE-261) indicated partially open on the main control board. The normal valve position was fully closed. An auxiliary operator was dispatched to isolate the recirculation line manually. The line was isolated before the recirculation valve had completely failed open. The inspector discussed the operator's action with licensee personnel and was informed that no alarms were received prior to the identification of the problem by the operator. If the problem had not been identified by the operator then a plant trip would have occurred when sufficient condensate flow was diverted away from the suction of the main feedwater pumps with resultant low suction pressure pump trips followed by the associated turbine trip/reactor trip. The operator's attentiveness to control board indications was good and prevented a potential plant transient.
- (b) The inspectors reviewed operating standing orders to determine if previously identified deficiencies as noted in NRC Inspection Report 50-400/93-14 had been corrected. Also, the content of the standing orders was discussed with the manager of shift operations. The licensee's policy is to use the standing orders to provide interim guidance until applicable procedures can be revised. Specific deficiencies identified earlier had been corrected by either deletion or by inclusion into appropriate procedures. In addition, the inspector noted that the number of standing orders had been reduced to approximately 10, which was about one-half of the previous number. The licensee had made improvements in the dissemination of this guidance.

No violations or deviations were identified.

(2) Facility Tours and Observations

Throughout the inspection period, facility tours were conducted to observe operations, surveillance, and maintenance activities in progress. Some of these observations were conducted during backshifts. Also, during this inspection period, licensee meetings were attended by the inspectors to observe planning and management

activities. The facility tours and observations encompassed the following areas: security perimeter fence; control room; emergency diesel generator building; reactor auxiliary building (RAB); waste processing building (WPB); turbine building; fuel handling building; emergency service water building; battery rooms; electrical switchgear rooms; and the technical support center.

During these tours, observations were made on monitoring instrumentation which included equipment operating status, area atmospheric and liquid radiation monitors, electrical system lineup, reactor operating parameters, and auxiliary equipment operating parameters. Indicated parameters were verified to be in accordance with the TS for the current operational mode. The inspectors also verified that operating shift staffing was in accordance with TS requirements and that control room operations were being conducted in an orderly and professional manner. In addition, the inspectors observed shift turnovers on various occasions to verify the continuity of plant status, operational problems, and other pertinent plant information during these turnovers. The licensee's performance in this area was satisfactory. No violations or deviations were identified.

b. Safety Systems Walkdown (71710)

The inspectors conducted a walkdown of the Auxiliary Feedwater (AFW) system to verify that the lineup was in accordance with license requirements for system operability and that the system drawing and procedure correctly reflected "as-built" plant conditions.

The inspectors found minor drawing discrepancies on drawings 2165-S-0544 and 2165-S-0545 pertaining to normally depicted valve positions and valve labeling. The licensee's valve lineup procedures OP-126 and OP-137 agreed with actual valve labeling in the field. The inspectors also noted several housekeeping deficiencies in the steam tunnel and slight general corrosion on the TDAFW pump trip and throttle valve. The inspectors were informed that an existing PCR (PCR-7088, CPL-2165-S-0544 Drawing Correction for IAF-55) already addressed one of the inspector's comments and that the inspector's other comments would also be incorporated into this PCR. The licensee's system engineer inspected the general corrosion on the trip and throttle valve and determined that this condition was acceptable for a steam admission valve. No violations or deviations were identified.

c. Cold Weather Preparations (71714)

Between January 15 - 20, 1994, the plant experienced extremely cold, ambient air temperatures which affected various plant

equipment and caused several alarms and erroneous indications in the main control room. On January 16, ambient temperatures were recorded to be below 10 degrees F. Several cases of frozen instrument sensing lines for non-safety related components occurred. Examples included the RAB Normal Ventilation supply fans which tripped numerous times due to inadequate heating for the fan units. The high discharge pressure trips for all three of the circulating water pumps had to be disconnected due to frozen pressure channels indicating dangerously close to the pump trip setpoints. Other equipment affected by the record low temperatures (as low as 2 degrees F) included the diesel driven fire pump which auto started due to frozen instrument lines, and condenser pressure indicators on the main control board which began to show a decrease in condenser vacuum. Recognizing that the instruments on the MCB did not provide input to the main turbine trip on low condenser vacuum, operators verified that the instruments providing the trip input were indicating correctly. One safety-related system was also affected by the cold weather. A frozen RWST level transmitter located near the RWST resulted in a high level alarm in the main control room. Eventually the level channel, LT-990, failed high and was declared inoperable placing the plant in a seven day Limiting Condition for Operation (LCO).

Licensee personnel found some of the affected instrument cabinets with permanently installed heaters that were not functioning. In other cases instrument lines were found not to be adequately insulated or heat traced. Work tickets were initiated to correct all of the above deficiencies and other temperature related problems and included such actions as installing heat tracing, insulation, and portable heaters. As a temporary measure for the RWST level channel, a heat-emitting light fixture was installed near the transmitter. As noted in NRC Inspection Report 50-400/93-24, the inspectors observed that the maintenance backlog for heat tracing and temperature maintenance systems had not been reduced. This backlog primarily affected non-safety related equipment. Although none of the above problems posed a threat to the safe operation of the plant, the inspectors concluded that a more aggressive approach by the licensee to address the backlog and identify potential freeze protection deficiencies could have prevented some of the incidents of frozen instrumentation noted above.

During the same cold week in January, the inspector reviewed data sheets for Procedure OST-1021, Daily Surveillance Requirements (DSR). Per this procedure, operators logged various TS required operating parameters, such as tank levels and room temperatures. The inspector noticed that for the DSR dated January 17, 1994, the "B" ESW electrical equipment room temperatures were between 47-49°F for each of the four six-hour surveillance intervals. The other rooms in the ESW intake structure were all indicating above 60°F. The inspector further noted that the "B" ESW electrical equipment room temperature initially dropped below 50°F on

January 15, and dipped as low as 38°F on January 19, 1994. Although only maximum room temperatures for the ESW structure were specified in the TS, the FSAR, Table 9.4.0-1, indicated minimum temperatures of 51°F for the ESW intake structures, specifically the pump rooms and the electrical equipment rooms which house associated safety-related MCCs and air handlers. In the discussion of the design of plant HVAC systems, Section 9.4.0 of the FSAR stated that, in winter, the air is heated by the supply units' electrical heating coils or electrical heating units to assure the minimum design space temperature stated in FSAR Table 9.4.0-1 is maintained. The discrepancy between the statement in the FSAR and the actual temperatures logged for the "B" ESW electrical equipment room was discussed with licensee personnel. It was later noticed by the licensee that the recorded temperatures for the "A" and "B" EDG rooms had also dropped below 51°F. On January 19, 1994, licensee personnel initiated actions to evaluate the intent of the FSAR statement and to correct the low temperature conditions in the ESW structure and the EDG building. Immediate actions included placing air supply fan AH-86B in service so that its heating coil could heat the "B" ESW electrical equipment room intake air. This action brought the room temperature to above 51°F before the fan was removed from service due to frozen fan cooling coils which burst and leaked water into the fan housing and the ESW structure (see paragraph 4.a.(3) of this report). Later, a portable heater was placed in the room to maintain temperatures above the FSAR minimum value. Portable heaters were also placed in the EDG structure in an attempt to raise room temperatures.

During a tour of the ESW intake structure on January 19, the inspector noted that a deficiency tag dated January 12, 1994, had been placed on the permanent space heater installed in the "B" ESW electric equipment room. A tour of the "A" and "B" ESW pump rooms identified several heaters which were also inoperable and had not been tagged. Operators later wrote deficiency tags for the remaining inoperable heaters in both the EDG rooms and the ESW structure.

The inspector noted that administrative Procedure AP-301, Adverse Weather Operations, had been in effect for extended periods over the previous two months when ambient temperatures were below 35°F. The procedure contained guidelines for monitoring, operating and maintaining equipment and instrumentation during periods of severe cold weather. Operator responsibilities were outlined in Procedure AP-301 and included inspecting equipment often to minimize the effects of adverse weather conditions. Step 5.1.1.4.c directed auxiliary operators to verify heaters were operable in all buildings and structures. Many of the deficient heaters in the ESW intake structure had not been identified or corrected until after inspectors questioned the cold temperatures in the "B" electrical equipment room. The failure to implement



Procedure AP-301 adequately to verify heaters were operable in the outlying areas is a violation of the requirements of TS 6.8.1.a.

Violation (400/94-05-01): Failure to implement procedures adequately.

Licensee personnel stated that they considered the FSAR minimum value of 51°F (and other minimum values referenced in Table 9.4.0-1) to be a design standard for the HVAC systems in the ESW structures and other plant areas. Licensee personnel are currently developing an engineering evaluation to determine the minimum temperatures at which safety-related equipment in outlying areas, such as the ESW structure and the EDG buildings, can still perform their intended safety functions.

d. Review of Nonconformance Reports (71707)

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

- (1) ACFR 94-404 documented that on January 28, 1994, an operator discovered that the room temperature for the Boric Acid Transfer Pump (BATP) valve gallery had dropped to 62°F. Operable boron injection flow paths are required to be at least 65°F by TS. The operator discovered that the room was colder because the door leading to the RAB hallway had been left open following maintenance activities on the BATPs. The operator immediately closed the door and secured a cooling fan to raise the room temperature above 65°F.

The inspector reviewed the history of temperature maintenance issues associated with borated water systems and violations documented in NRC Inspection Report 50-400/91-24. Licensee corrective action for the deficiencies identified in that report included increased monitoring of the boration system flowpath temperatures. As a result of the increased awareness of temperature requirements for the boration flowpath, licensee personnel noted difficulties in maintaining the BATP valve gallery above the minimum requirement. Room heaters could not maintain the required temperature when adjacent area cooling units were in operation. Licensee personnel generated a work ticket (WR 92-AALL1) on January 8, 1992, to fabricate a plexiglass door to this room to prevent cooler outside air from entering. Two years later, on February 18, 1994, the inspector noted that a plexiglass cover had still not been fabricated and the deficiency tag was still on the door. Instead licensee personnel had installed a sheet of plastic over the door cage to prevent air flow. Licensee personnel also discovered that the area room heater in the BATP valve

gallery had been inoperable and under clearance since August 1993.

10 CFR 50, Appendix B, Criteria XVI, requires that measures shall be established to assure that conditions adverse to quality such as failures, malfunctions, deficiencies, deviations, defective equipment and non-conformance, be promptly identified and corrected. The licensee's failure to correct deficiencies associated with the BATP valve gallery door promptly led to the inability to maintain the room above the 65 degree F minimum requirement. This is contrary to the requirements of 10 CFR 50, Appendix B, Criteria XVI, and is considered to be a violation.

Violation (400/94-05-02): Failure to implement adequate corrective actions to prevent recurrence of deficiencies.

- (2) ACFR 94-615 reported that on February 18, 1993, RCS letdown was inadvertently isolated during an RCS filter backflushing evolution. This evolution is controlled by two procedures OP-107, Chemical and Volume Control System, and OP-120.02.39, Fuel Handling and Reactor Auxiliary Building Filter Backflush, and necessitates coordination between Main Control Room (MCR) and radwaste personnel. Radwaste operators had previously experienced problems with the automatic operation of the backflushing system, therefore the local manual mode of backflushing the RC filter was implemented per section 8.5 of Procedure OP-120.02.39. Procedure steps specify that MCR personnel open the RC filter bypass valve ICS-112 and then direct radwaste operators to shut the RC filter inlet and outlet isolation valves (ICS-114, ICS-118). When the evolution is complete, radwaste personnel inform the main control room that the filter is backflushed, isolated, and ready to be placed into service. When directed by MCR personnel, radwaste operators reopen valves ICS-114 and ICS-118 so that valve ICS-112 can be closed. Upon completion of the filter backflush on February 18, MCR personnel closed ICS-112 prior to valves ICS-114 and ICS-118 being opened. This action isolated the letdown system and raised system pressure which potentially challenged a system relief valve. The licensee is presently evaluating the cause for this event. Statements made by the operators involved indicated that MCR personnel were informed that the backflush was finished. MCR personnel assumed that this meant that the filter was also unisolated and ready to be returned to service.

Licensee personnel have experienced previous problems with coordinating filter backflush evolutions. In NRC Inspection Report 50-400/92-15 the licensee was issued a violation (400/92-15-01) for failing to implement procedure OP-107 properly. This violation occurred on August 7, 1992, during

an attempt to backflush the seal water return filter when the associated bypass valve was not opened as required. This event also resulted in a pressure increase and challenge to system relief valves. In response to this event the licensee clarified procedures OP-120.02.39 and OP-107 to identify the action required by the MCR. These actions were completed on October 19, 1992. In addition, NRC Inspection Report 50-400/91-27 contained a non-cited violation (400/91-27-02) for the failure to implement procedure OP-109 properly, Boron Recycle System. This violation also involved the failure to open the recycle evaporator feed filter inlet and outlet valves when the filter was returned to service on December 15, 1991. Procedures were clarified in response to this event. The inspectors reviewed the procedures involved and found them to be clear and concise. However, the failure of licensee personnel to implement procedure OP-107 properly, even after the recurrent problems encountered during this evolution, is contrary to the requirements of TS 6.8.1.a and is considered to be another example of the violation listed in paragraph 2.c of this report (400/94-05-01).

e. Followup of Onsite Events (93702)

At 12:30 p.m. on February 17, 1994, the licensee declared an unusual event due to a plant computer (ERFIS) failure. A licensee system engineer notified the MCR that his display of reactor power had not changed during the previous two days. At 9:55 a.m. it was determined that the SPDS display in the MCR was not updating data as required. The licensee's initial investigation determined that this condition had existed since 11:00 a.m. on February 15. Although the computer failure had been corrected at 9:55 a.m. by restarting the SPDS program, an unusual event was declared and terminated at 12:30 p.m. when the investigation results revealed that the SPDS function had been inoperable for greater than four hours.

The inspectors reviewed the licensee's emergency plan and determined that the event was properly classified and the emergency plan was properly implemented.

The licensee has experienced previous problems with ERFIS. On February 6, 1993, an unusual event was declared upon the complete failure of ERFIS. LER 92-02 reported the failure to properly log containment sump level and calculate leakrate during an ERFIS failure which was unnoticed by operators. The licensee's corrective action for this event included procedure revisions to provide adequate details to ensure proper operation of TS related functions performed by ERFIS. Again in NRC Inspection Report 50-400/93-21, the licensee's action in response to the LER were considered to be weak as a degraded condition of ERFIS to calculate AFD went undetected by operators. In response to this



event, licensee management directed that an event review team be formed to address the computer problems. The corrective action proposed by the event review team and accomplished by the licensee included revising guidance to determine that AFD indications are updating properly prior to declaring the function operable, increasing the numeric AFD display by one additional digit (thousandths), and additional training to operators and computer maintenance personnel.

Since the February 17, 1994, event involved the failure of the SPDS function of ERFIS and was not a TS related function, operators were not periodically checking these parameters to ensure the data was updating. Operators instead simply monitored the computer clock display which was updating correctly for this event. The SPDS function was required by the emergency plan but not included in previous corrective actions.

The failure to take adequate corrective action to provide operators with sufficient guidance to determine the proper operation of ERFIS is contrary to the requirements of 10 CFR 50 Appendix B, Criterion XVI and is considered to be another example of the violation discussed in paragraph 2.d(1) of this report (400/94-05-02).

3. Maintenance

a. Maintenance Observation (62703)

The inspector observed and reviewed maintenance activities to verify that correct equipment clearances were in effect; work requests and fire prevention work permits were issued, and TS requirements were being followed. Maintenance was observed and work packages were reviewed for the following maintenance activities:

- Reset impeller clearance for "A" ESW screen wash pump in accordance with Procedure CM-M0195, Emergency Service Water Screen Wash Pump Disassembly, Inspection and Re-assembly.
- Inspection and cleaning of bus 1A1 in accordance with Procedure PM-E0015, 480 Volt and 6.9 KV Transformer Electrical and Preventive Maintenance Checks.
- Repair sodium hydroxide leakage from level transmitter L-7166.
- Replace B phase overload relay for cooling fan AH-5 (1A-SA) breaker.
- Plug leaking cooling coils for cooling fan AH-86 (1B-SB) in accordance with PCR-7157, Plugging of AH-86B Cooling Coil Tubes.

- Troubleshoot/Replace closing coil on supply breaker 1A1-B2 from emergency bus 1A-SA to emergency bus 1A1.

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

- (1) The inspectors attended several Plan of the Day meetings held among the shift supervisors, work control, and maintenance management personnel. The licensee described the purpose and conduct of this meeting in procedure PLP-710, Work Management Process. These meetings are held each weekday at 7:15 a.m. Emergent items and items requiring rescheduling are discussed at these meetings. Operating personnel review the schedule to develop the necessary equipment clearances to perform the work. The inspector considered this meeting and process to be beneficial as it enhanced the operator turnover process to include craft related work planned during the upcoming shift. In addition, the status of lit main control board annunciators was discussed with necessary action to remove the alarming condition.
- (2) As a followup to the comments contained in NRC Inspection Report 50-400/93-14, the inspectors reviewed the current backlog of uncompleted maintenance work tickets. The present backlog of non-outage work tickets is approximately 1100. Licensee management plans to continue to reduce this number to an established goal of 600. This equates to approximately seven weeks of work. The inspector noted that the average age of work tickets has been reduced to 216 days from a high of approximately 310 days. The licensee attributed this reduction to the new work control center which has concentrated on scheduling the older tickets for work. The inspector considered this aspect of work planning/scheduling to be effective.
- (3) The inspectors reviewed an NAD assessment dated February 11, 1994, performed in the maintenance functional area. This assessment was requested by plant management to determine the effectiveness of the maintenance program. The inspectors considered this pro-active assessment to be good and the assessment findings indicated that a thorough look had been performed of the maintenance organization. Issues identified by NAD included poor initial planning of work packages, poor implementation of work package directions, and poor maintenance practices. In addition, significant problems were identified with maintaining the data base for the PM program which included incorrect classification of safety-related PM's, incorrect classification of environmentally qualified PM components, and inappropriate

extension of overdue PM's. The inspectors considered this assessment to be effective.

Previous NAD assessments were also reviewed. In June 1993 NAD identified deficiencies in maintenance program procedures which defined independent verification requirements. An assessment of the new work management process was performed in December 1993. A strength was identified in the implementation of safety system train outages as well as deficiencies noted in the new work control/scheduling process. The inspectors concluded from these assessments that this effort was effective in identifying areas in need of improvement.

- (4) While reviewing Procedure PLP-710, the inspectors noted that the licensee had established new criteria for establishing work priorities. Attachment 5 to this procedure lists the five new priority classifications. Priority E work was defined as emergency work that would have an immediate and direct impact on the health and safety of the general public or work to prevent the deterioration of plant conditions to unsafe or unstable levels. This type of work could be authorized to begin prior to planning being completed and documented after the fact. The procedure listed three examples of emergency type of work:

- 1) Technical Specification 3.0.3 entry.
- 2) Significant acid or caustic system leaks that directly impact personnel safety or the environment and cannot be isolated.
- 3) Large condenser vacuum leak that results in a continuous load reduction to prevent a unit trip.

The inspector disagreed with the statement that emergency work could be authorized during all TS 3.0.3 entries. In NRC Inspection Report 50-400/93-08 the licensee was issued a deviation (400/93-08-03) for performing non-emergency safety-related maintenance without preplanning. The licensee responded to this deviation by revising the work control procedure to specify that emergency work would only be authorized for those conditions to protect the health and safety of the public, to protect equipment or personnel, or to prevent the deterioration of plant conditions to unsafe or unstable levels. The inspectors closed out this deviation based on these corrective actions being implemented.

The licensee has entered TS 3.0.3 on several occasions in the past. Some of these occasions were documented in LER 93-05, safety-related room cooling units inoperable, LER

93-02, failure to stroke test charging system valves, and LER 92-12, relay failure exceeded out of service time. Since each one of these TS 3.0.3 entries did not jeopardize the ability to safely shutdown the plant, the inspector concluded that not all TS 3.0.3 entries should be classified as emergency situations necessitating alleviation of work planning requirements. The inspector discussed this condition with licensee management personnel who stated that procedure clarifications would be made.

No violations or deviations were identified.

b. Surveillance Observation (61726)

Surveillance tests were observed to verify that approved procedures were being used; qualified personnel were conducting the tests; tests were adequate to verify equipment operability; calibrated equipment was utilized; and TS requirements were followed. The following tests were observed and/or data reviewed:

- OST-1021 Daily Surveillance Requirements Daily Interval
- OST-1026 Reactor Coolant System Leakage Evaluation Daily Interval
- OST-1214 Emergency Service Water System Operability Train A Quarterly Interval.
- OST-1813 Remote Shutdown System Operability 18 Month Interval
- MST-I0183 Containment Spray Additive Tank Level Loop (L-7166) Calibration.
- MST-I0254 Reactor Coolant Loop Cold Leg Temperature Instrument Operational Test.

The performance of these procedures was found to be satisfactory with proper use of calibrated test equipment, necessary communications established, notification/authorization of control room personnel, and knowledgeable personnel having performed the tasks. No violations or deviations were observed.

4. Engineering

a. Design Changes and Modifications (37828)

Plant Change Requests (PCR) involving the installation of new or modified systems were reviewed to verify that the changes were reviewed and approved in accordance with 10 CFR 50.59, that the changes were performed in accordance with technically adequate and approved procedures, that subsequent testing and test results met

approved acceptance criteria or deviations were resolved in an acceptable manner, and that appropriate drawings and facility procedures were revised as necessary. In addition, PCRs documenting engineering evaluations were also reviewed. The following modifications and/or testing in progress were observed:

- PCR-6526, Frequently Cycled LK Breakers
 - PCR-7144, Wires Are Swollen on 3AV-B45B-1002
 - PCR-7157, Plugging of AH-86B Cooling Coil Tubes
- (1) As noted in NRC Inspection Report 50-400/93-25, on January 8, 1994, the B RAB Emergency Exhaust Fan inlet valve (AV-B4) failed to operate satisfactory after the implementation of modification PCR-7144. The inspectors reviewed the modification and implementing work packages (WR 94-AAIE1). The repair replaced swollen wires found inside the motor operated valve in accordance with procedure EM-003, Termination and Testing of Wire and Cable. Attachment 1 to this procedure provides a checklist of the important attributes for conducting the wire terminations and provides for signature blocks to document accomplishment. This attachment also specified that a Quality Verification (QV) signature was required to verify that the cable conductor identification was correct. The licensee's investigation of the valve operating problem revealed that two of the seven cables involved were terminated to the incorrect terminal due to incorrect labeling of the cable conductors.

The inspector discussed this matter with craft and QV personnel. Craft personnel believed that they had terminated the cable conductors correctly. The QV individual involved admitted that he had only verified that three of the seven cable conductors were labeled correctly and that based on this he did not consider verification of the other four necessary to meet this requirement. The QV inspector had nevertheless signed the attachment on January 7, 1994, documenting satisfactory labeling of the cable conductors. The two cable conductors which were incorrectly terminated had not been verified by QV.

The failure to verify correct labeling of the cable conductors properly is contrary to the requirements of Procedure EM-003 and is considered to be a violation. Although this matter was identified by licensee personnel during the post modification testing, it is being cited due to the importance of the breakdown of the independent verification process. This procedural violation is considered to be another example of the violation noted in paragraph 2.c. of this report (400/94-05-01).

- (2) In accordance with modification PCR-6526, the licensee installed a new breaker for the "A" station air compressor in non-safety bus 1A1 to replace the old LK-16 breaker. Licensee personnel decided to install a non-safety breaker before any subsequent safety-related breaker modifications to identify potential problem areas for correction prior to the safety-related bus maintenance presently scheduled for the next refueling outage.

Licensee personnel experienced physical problems with the new Siemens breaker and cradle assembly when inserted into the breaker cubicle. Minor fit-up problems were noted with fuse/terminal block sizes. In addition, licensee personnel found that the new breaker was extremely hard to rack in. Physical alterations were made to install the breaker successfully. Two wiring deficiencies were also identified by licensee personnel during the installation process. The licensee decided that a wire to wire check would be beneficial for future installations. Deficiencies were also identified with the post-modification testing procedure and PM procedure. The licensee plans to revise these procedures accordingly.

The licensee held a post-modification critique meeting to discuss these problems and corrective action. A video of the installation process was made and viewed during this meeting.

During the restoration of bus 1A1, the feeder breaker from bus 1A-SA failed to properly close electrically. Licensee personnel replaced the closing coil on the feeder breaker which subsequently operated satisfactorily. This breaker will also be replaced during the refueling outage breaker modification. The inspectors considered the licensee's preliminary efforts for the outage breaker replacement work to be beneficial.

- (3) The inspectors reviewed maintenance activities to replace cooling coils on air handler AH-86 (1B-SB) in the ESW intake structure. The work was done in accordance with PCR-7157. The inspectors reviewed PCR-7157, Revision 0 and Revision 1 to verify that appropriate technical and safety reviews were documented. A safety review package was completed for each revision of the PCR. This activity was required by Procedure AP-011, Safety Reviews, and included an Unreviewed Safety Question Determination as mandated by 10 CFR 50.59. During a review of the safety package for PCR-7157, Revision 0, (completed and approved January 20, 1994) the inspector noted that the same generic written basis appeared in the answers to four different and distinct questions related to the malfunction of equipment and the probability of accidents as evaluated in the Safety Analysis Report.

Specifically, the words "the leaking coils are removed from service via a proven method" were documented as the only written basis for answering "no" to each one of the following questions:

Question 1: May the proposed activity increase the probability of occurrence of an accident evaluated previously in the Safety Analysis Report?

Question 3: May the proposed activity increase the probability of occurrence of a malfunction of equipment important to safety evaluated previously in the Safety Analysis Report?

Question 5: May the proposed activity create the possibility of an accident of a different type than any evaluated previously in the Safety Analysis Report?

Question 6: May the proposed activity create the possibility of a malfunction of equipment important to safety of a different type than any evaluated previously in the Safety Analysis Report?

The answers to the questions were simplistic and lacking in depth to address the specifics of each question. Section 3.2 of procedure AP-011 stated that qualified safety reviewers shall perform safety reviews in accordance with the program manual (Attachment 6). Attachment 6, Rev. 3, Section 8.2, Documentation, stated in part that although the answers in Part IV (Unreviewed Safety Question Determination) are simply "yes" or "no", there must be an accompanying justification. Making a simple statement of conclusion is not sufficient. The inspector noted, however, that the accompanying Safety Analysis for the plugged cooling coils did address the overall safety concern.

The diminished ability of the air handler to cool the intake structure was minimized by the current season and the fact that the coils would be permanently replaced during RFO-5 beginning in March 1994. In addition, Rev. 1 to the PCR had been completed and approved one day later and effectively superseded Rev. 0 to the PCR. Rev. 1 contained a more detailed safety analysis, a better documented technical review, and more detailed answers to all seven of the questions related to the unreviewed safety question determination. The inspectors noted that Rev. 1 had been completed by the licensee before the inspector identified the deficiency in Rev. 0.

While the accompanying safety analysis for Revision 0 was considered to be adequate to address potential safety concerns, the inspectors considered the licensee's answers

to the questions for the unreviewed safety question determination in Revision 0 to be weak. NRC Inspection Report 50-400/93-07 documented a similar example where two separate and distinct modifications contained similar wording as the basis for determining that no unreviewed safety question existed. However, as with the previous example, the inspectors agreed with the safety reviewer's conclusion that an unreviewed safety question did not exist for PCR-7157. The inspector also considered the safety review for PCR-7157, revision 1 to be good.

b. System Engineering

- (1) On January 22, 1994, plant power was reduced to approximately 84 percent to perform main turbine valve testing. The inspectors were previously informed that the reactor engineering group had recently obtained a new computer software system (POWERTRAX) to anticipate/calculate core parameters in three dimensions to assist the operators during the downpower. Appropriate recommendations were suggested to the operating shift on rate of power change, rod bank insertion values, and boration/dilution volume estimates. The inspectors noted that AFD predictions and actual values closely agreed and little problems were noted during the downpower evolution. The inspectors concluded that technical support for this plant evolution was good.
- (2) The inspector discussed a recent industry event involving the failure of an MSIV to operate properly with the responsible system engineer. During the industry event, a 34 inch air-to-open/spring-to-close globe valve manufactured by Atwood and Morrill failed to close following receipt of a main steam isolation signal which resulted in steaming a steam generator dry. The cause for this condition was attributed to valve reassembly and alignment following maintenance at a temperature other than the valve's normal operating temperature.

The system engineer informed the inspector that the plant main steam system design utilizes a similar Y type 32-inch globe valve manufactured by Rockwell for the main steam isolation function. These valves are likewise air-to-open/spring-to-close operated. To aid in disassembly/reassembly, the valves have alignment pins and are marked to ensure satisfactory realignment following maintenance. In addition, the valves are subsequently stroke tested while the plant is in the hot standby (Mode 3) condition following maintenance.

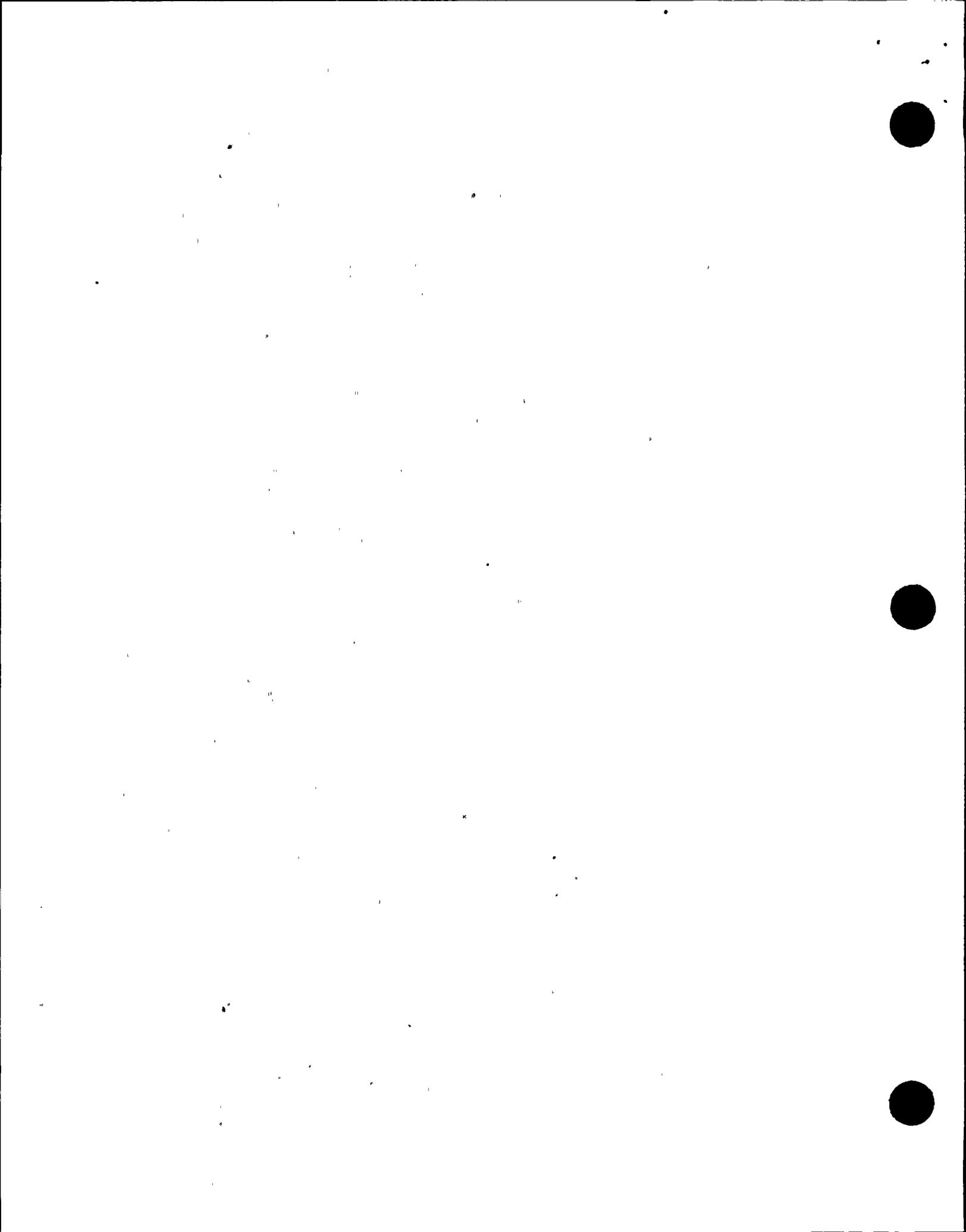
No violations or deviations were identified.

5. Plant Support

- a. Plant Housekeeping Conditions (71707) - Storage of material and components, and cleanliness conditions of various areas throughout the facility were observed to determine whether safety and/or fire hazards existed. As noted in paragraph 2.b the general housekeeping in the steam tunnel was considered to be poor. Also during plant tours, the inspectors noted poor housekeeping in the boric acid transfer pump room (loose insulation canning, cotton gloves discarded on floor) and in the 286 foot elevation of the RAB by MCC 1A31-SA (discarded tie-wraps and tape). In addition, the inspectors noted the general poor cleanliness condition of the MCB. Dirt and dust was observed which indicated that poor housekeeping standards were being maintained in this highly visible area of the plant. The inspector concluded that plant management needed to reenforce high housekeeping standards.
- b. Radiological Protection Program (71707) - Radiation protection control activities were observed routinely to verify that these activities were in conformance with the facility policies and procedures, and in compliance with regulatory requirements. The inspectors also reviewed selected radiation work permits to verify that controls were adequate.

On January 22, 1994, the licensee discovered an unlocked hatch on a cask used to store spent demineralizer filters. The cask was one of two located in the 211 foot elevation of the WPB and was posted as a Locked High Radiation Area (LHRA). The hatch, which is located at the top of the cask and is accessible only with the aid of a ladder, was discovered by technicians performing routine rounds approximately fifteen hours after the last known entry was made.

The hatch covers a 24-inch diameter opening into which technicians routinely deposit highly radioactive spent filters. It is usually secured by a padlock which engages a small U-hook on the cask. The lock was found to be locked, but not engaged in the U-hook to prevent the door from opening. The inspectors discussed the incident with licensee personnel who indicated that the unlocked cask was the result of personnel error and that the involved technician thought the lock was engaged when the key was removed. Upon discovering the unlocked cask, technicians locked it and performed a radiological survey of the area. Surveys indicated radiation levels of 800 mR/hr at the plane of the hatch with it opened and 2.5 R/hr on contact with the filters which were stored inside. The top of the filters inside the cask were at a level of approximately 30 inches below the plane of the hatch. The inspector toured the area and observed that although the cask opening was big enough to allow a person to climb inside, no personnel would routinely access this hatch for reasons other than to drop filters inside. Licensee personnel also indicated that there were no unusually high exposures recorded on the day the



cask was unlocked. The inspector concluded that no personnel over-exposure occurred as a result of this incident. The inspector also discussed the potential for personal overexposure with NRC Regional Specialists who concluded that, given the location and configuration of the filter cask, the potential for excessive exposure was minimal.

The licensee's administrative Procedure AP-504, Administrative Controls for Locked, Restricted and Very High Radiation Areas, specifies in Section 5.1 that LHRAs shall remain locked at all times unless under the direct control of an individual controlling access to the area. The licensee's actions regarding the unlocked filter cask are considered to be a violation of the above requirements. This violation will not be subject to enforcement action because the licensee's efforts in identifying and correcting the violation meet the criteria specified in Section VII.B of the Enforcement Policy.

Non-cited Violation (400/94-05-03): Failure to maintain a LHRA locked.

The licensee's corrective actions for the above violation included counseling the involved individual and other health physics technicians, and revising AP-504 to require an independent verification of LHRAs. The above corrective actions were presented before the PNSC on February 23, 1994.

- c. Security Control (71707) - The performance of various shifts of the security force was observed in the conduct of daily activities which included: protected and vital area access controls; searching of personnel, packages, and vehicles; badge issuance and retrieval; escorting of visitors; patrols; and compensatory posts. In addition, the inspector observed the operational status of Closed Circuit Television (CCTV) monitors, the intrusion detection system in the central and secondary alarm stations, protected area lighting, protected and vital area barrier integrity, and the security organization interface with operations and maintenance.
- (1) During this inspection period the licensee moved the perimeter fence such that the administration building was located outside the protected area. The inspectors walked down the new fence and observed portions of the testing performed on the modified intrusion detection system, CCTV, and lighting systems. Performance of the testing was observed from the central alarm station and in the field. To alleviate distractions, security force personnel routed the majority of communications to the secondary alarm station during performance of the testing. The inspector considered the conduct of the testing to be good with satisfactory results.



During the walkdown of the new perimeter fence, on February 8, 1994, the inspector noted two areas along the fence where gaps existed between the fence material and ground. The inspector measured these gaps and found them to be approximately six inches in depth. The inspector discussed this finding with security personnel and was informed that the fence modification had not yet been accepted as complete. The inspector was informed that a gap size of six inches was the maximum allowed and that barbed wire was to be installed at the bottom of the fence to prevent access through the gap areas. Appropriate action was implemented to correct the fence deficiencies. The licensee continued the use of compensatory guard posts until the deficiencies were corrected.

The inspector also discussed the potential change to the security plan required by this modification with licensee personnel. The inspector was informed that a change was to be submitted within 60 days in accordance with 10 CFR 50.54(p)(2).

- (2) On February 17, 1994, while observing the reinspection effort for the new fuel assemblies, the inspector noticed two vendor representatives were standing nearby with visitors badges. The inspector asked the two individuals who and where their escort was. The visitors indicated that the escort was involved in the fuel inspection activities which were taking place on the other side of the new fuel pool some fifty to sixty feet away. The inspector noted that although the visitors were visible to their escort, the escort was clearly involved in the inspection activities and not in full observation of the visitors. The inspector directed the visitors to proceed to where their escort was located. The inspector later discussed this observation with the security manager. Although the inspector did not consider this incident to be in violation of security requirements, the control of visitors in this case could be strengthened. The inspector reviewed the Security Plan and verified that no requirements regarding the escorting of visitors were violated.

- d. Fire Protection (71707) - Fire protection activities, staffing and equipment were observed to verify that fire brigade staffing was appropriate and that fire alarms, extinguishing equipment, actuating controls, fire fighting equipment, emergency equipment, and fire barriers were operable.

Except as noted above, the inspectors found plant housekeeping and material condition of components to be satisfactory. The licensee's adherence to radiological controls, security controls, fire protection requirements, and TS requirements in these areas was satisfactory.

6. Preparations for Refueling (60705)

The inspectors reviewed several aspects of the licensee's activities associated with the upcoming refueling outage (RFO-5) which was scheduled to begin March 19, 1994. This inspection was performed to ascertain the adequacy of the licensee's procedures for the conduct of refueling operations, and to determine the adequacy of the licensee's administrative requirements and implementation of controls for refueling operations and plant conditions during refueling. The inspection was accomplished by reviewing procedures, observing new fuel handling activities, and interviewing various key licensee and contractor personnel. In addition, the inspectors reviewed the licensee's outage schedules and the licensee's independent pre-outage shutdown risk assessment, dated January 21, 1994.

a. New Fuel Receipt

The inspectors reviewed procedures and observed activities associated with receiving, inspecting, and storing new fuel assemblies. Procedures included FHP-003, Unpacking and Handling of New Fuel Assemblies and New Fuel Shipping; FHP-004, New fuel Handling Tool Operation; and FMP-106, New Fuel Receipt Inspection. The licensee received 52 new fuel assemblies from Siemens Power Corporation during January and February, 1994. The inspector observed that licensee personnel were moving the new fuel in accordance with Procedure FHP-003. However during the first day of inspections, the inspector noted several unapproved pencil changes written into the working copy of the procedure. The pencil changes were primarily due to technical terminology differences between the licensee's current and previous fuel vendors and did not alter the scope of the fuel movement activities. The type of procedure problems identified by the pencil changes should have been identified, and appropriate procedure clarifications implemented, prior to the first day of fuel movement. After the inspector identified this matter to licensee personnel, a temporary change to Procedure FHP-003 was subsequently initiated and an advance change was implemented on February 16, 1994.

The inspector reviewed training certifications for six fuel inspectors and observed fuel inspection activities done at the Harris site in accordance with Procedure FMP-006. The inspector observed that the licensee was especially sensitive to foreign material exclusion requirements. The inspector also observed that qualified fuel inspectors, as well as a quality control representative from the fuel vendor, were present to oversee fuel assembly inspections. The fuel inspectors did not restrict their focus to those inspection objectives called upon in Procedure FMP-006. This resulted in the identification of discrepancies in the fuel assemblies which resulted in three defective assemblies being returned to the vendor. Licensee inspection findings included the following:



- Approximately five fuel bundles were found with bent tabs on grid spacers. In one case, the tabs were found bent away from the center instrument thimble and touching two adjacent fuel rodlets. Some of the bent tabs were able to be field corrected. Three assemblies were sent back to the vendor for reworking.
- A locking lug was found in the non-locked position on an upper tie plate of one of the assemblies. The locking lug was immediately placed in the locked position and an ACFR was generated.
- A washer (approximately 3/8 inches outside diameter) was found lying on the lower tie plate of an assembly. Following this discovery, licensee personnel conducted reinspections of all 30 of the assemblies that had been previously inspected in order to find the mating screw. The washer and screw were believed to have been dismantled from a lifting tool back at the vendor's manufacturing facility. The missing screw was not found during the subsequent inspections.
- A small metal tab, about the size of a fingernail, broke off of a feeler gauge used to measure separation between fuel rodlets. The measuring tool had been supplied to the licensee by the vendor. The tab, which had been spot welded to the instrument, was later retrieved from a fuel assembly that had been previously inspected. The licensee's efforts in identifying the broken tool and finding the missing piece was particularly good.
- During packaging at the manufacturer's facility, each assembly had been placed in a polyethylene sleeve prior to being loaded into a steel container for shipping. During onsite inspections, some of the steel containers were found to have dust and dirt located inside. The fuel assemblies were protected from this foreign material by their polyethylene covers. However, one of the polyethylene sleeves was found with moisture inside. The moisture was attributed to the washing/drying process back at the manufacturing point and was determined not to be a threat to the future performance of the fuel assembly.

In addition to the above, licensee personnel also inspected each new assembly for rod perpendicularity, rod integrity, rod separation, and potential bowing of rods. ACFRs were generated for all of the noted discrepancies and were in the process of being resolved by the licensee's corporate office at the close of this inspection period. Overall, the licensee's fuel receipt inspection activities were very thorough in identifying and addressing the deficiencies noted above.

Since the above fuel receipt inspections indicated a potential vendor quality control problem, the resident inspectors interviewed several key vendor and licensee personnel who had been involved in the licensee's corporate oversight of the fuel fabrication process. The licensee's corporate oversight program had been implemented as a result of fabrication problems identified previously for the Robinson plant. The vendor representative acknowledged that corrective actions had only been implemented related to the design and fabrication of the assemblies, and for the exclusion of foreign material at the fuel services side of the vendor's operation. Foreign material exclusion had not been rigorously addressed from a manufacturing perspective, which could have contributed to the washer intrusion problem. Vendor representatives stated that they were in the process of developing corrective actions to address the licensee's findings.

The resident inspectors reviewed licensee inspection and trip reports documenting the results of the corporate oversight efforts conducted prior to the fuel being shipped to Harris. The inspectors noted that characteristics for some of the findings noted above (bent tabs, unlocked locking lug) were documented in the reports as having been inspected. No deficiencies were identified. However, licensee personnel indicated that the inspection effort was not a 100 percent effort in that, while portions of the fabrication process had been inspected for all of the assemblies, only a few assemblies were completely inspected during the entire manufacturing process.

b. Administrative Controls for Refueling Operations

The inspector reviewed the licensee's administrative controls for refueling operations as established in Procedure PLP-700, Outage Management. This procedure defined lines of supervision within the outage organization and listed responsibilities for all key personnel including the outage manager, shift outage managers, and work activity coordinators. The inspector noted that key positions had already been appointed and, through interviews, concluded that the incumbents were cognizant of their outage responsibilities.

The inspector also interviewed NAD personnel to determine what QA/QC activities would be completed during the upcoming outage. Licensee personnel indicated that both an outage assessment and a vendor assessment would be performed during RFO-5. The vendor assessment would consist of daily surveillance observations from QV personnel in the NAD organization. The surveillances would be performed by approximately fifteen QV inspectors for several of the major outage activities in which contractor personnel would be primarily involved. These activities include steam generator eddy current testing, LK-16 breaker replacement, RTD bypass removal, auxiliary feedwater pipe replacement, and refueling. The

inspector reviewed the surveillance plan for the RTD bypass removal job and noted that the other plans were currently under development at the close of this inspection period.

As required by Procedure PLP-700, Step 5.2.2.2.7, the licensee completed a pre-outage risk assessment, dated January 21, 1994. The assessment was performed using PGO-060, Outage Risk Management Policy and Principles and PLP-700, Attachment 11, Outage Risk Management Scheduling and Assessment Guidelines. No mid-loop or reduced inventory conditions with fuel in the vessel are planned for RFO-5. However, the licensee's risk assessment did identify five issues and several recommendations concerning the outage schedule and related procedures. The issues included the lack of a comprehensive plan for containment closure prior to core boiling, the untimely scheduling of tasks that affect RCS makeup capability while fuel is in the reactor vessel, procedure conflicts, and personnel training issues. The issues were required to be addressed prior to RFO 5.

The risk assessment also verified the availability and control over key plant safety and support systems throughout the outage. For example, at least one source of offsite electrical power and one EDG were verified to be available by schedule throughout the RFO 5 schedule. Two RHR trains were verified by the licensee's assessment to be available while fuel was in the reactor vessel with the upper internals installed. The assessment also verified that the ESW and CCW systems were available to support RHR operability requirements per TS 3.9.8.2.

The risk assessment also verified that procedural requirements for LTOP operability and other RCS pressure control provisions were in place. Containment integrity was verified to be in place for operating modes 1 through 4. The assessment also verified that procedural requirements existed for communications between the control room and personnel on the refueling floor. The inspectors will independently verify selected assessment attributes during future routine inspection activities.

The licensee's pre-outage risk assessment was thorough and for the areas reviewed above, the licensee's administrative controls were adequate for establishing control of plant conditions during RFO-5.

7. Review of LERs (92700)

(Open) LER 93-04: This LER reported that the required surveillance testing interval for the control room HVAC system had been exceeded on four occasions. This matter was previously discussed in NRC Inspection Report 50-400/93-10. The licensee has completed real-time training on this event for operators and has revised the inservice testing program to enhance the review process. In addition PCR-7014, Correct EBASCO Valve and Damper Nomenclature on Control Room Switches, has been

initiated to correct the dual labeling systems presently employed for this system. The LER will remain open pending completion of the PCR.

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

- a. (Closed) Inspector Followup Item 400/92-08-01: Follow the licensee's activities to improve the work scheduling system.

The inspectors reviewed a system outage for the TDAFW pump which was planned and scheduled January 12, 1994. This outage was completed successfully and resulted in many PMs and corrective maintenance activities being accomplished in a relatively short time frame. The coordination of these activities minimized equipment out of service time for these components. The inspectors considered the reduction in safety-related equipment unavailability time to be beneficial to the safe operation of the plant.

The inspectors also noted that work was scheduled on the RAB emergency exhaust system on two separate occasions within a two week period, however. The RAB emergency exhaust fan (E-6B) was removed from service on January 4, 1994, for preventive maintenance on the fan's inlet and exhaust dampers. The system was returned to service and tested on January 8. In the following week, on January 13, the fan was again removed from service for preventive maintenance on another system damper. The fan was again retested and returned to service on January 14. Since both scheduled activities required entering an equipment LCO, the inspector considered the scheduling of the activities to be deficient as they resulted in redundant equipment testing and unnecessary equipment out of service time.

The licensee has experienced previous problems with scheduling HVAC type of work. As discussed in NRC Inspection Report 50-400/93-21, the scheduling of control room HVAC maintenance was deficient. The inspector discussed the corrective action taken for the previous problem with licensee work control personnel to determine if additional action was required to properly schedule these activities. The inspector was informed that the previous action properly identified the work but personnel error resulted in the poor scheduling of the RAB ventilation system work.

Again in this instance no TS equipment out of service times were exceeded by the licensee. Although the inspectors considered the new scheduling/work control system to be satisfactory with the planning concept of system outages to be a strength, the coordination of HVAC system outages was considered to be weak.

- b. (Closed) Inspector Followup Item 400/93-08-05: Follow the licensee's activities to increase ESCWS reliability.

Upon further review of PCR-6493, ESCWS Chiller Low Flow/Temperature Trip Alarm, by the PNSC, licensee management decided to cancel the PCR. This decision was based on the reliable history of operation of the chillers since July 1992. The inspector considered the licensee's action for this matter to be satisfactory.

- c. (Closed) Unresolved Item 400/93-21-01: Testing of control circuits required for safe shutdown.

The inspector reviewed analysis E-5523, revision 1, Instrumentation, Control and Transfer Switches for Components Credited in the Event of a Fire Requiring Control Room Evacuation, which the licensee initiated to clearly state which components were required to perform the functions necessary to achieve safe shutdown. The inspector determined that procedure OST-1813, Remote Shutdown System Operability 18 Month Interval, was properly implementing the requirements of TS 4.3.3.5.2. The licensee has incorporated this analysis by reference in the safe shutdown analysis.

The licensee had corrected previous comments on inaccurate references to non-existent tables and an inaccurate table of contents for the safe shutdown analysis. However, the inspector noted that even with the new reference to analysis E-5523 the safe shutdown analysis still contained no clear statement of the "B" train components fulfilling the functions specified by TS 4.3.3.5.2. In addition, the inspector found two component numbers in analysis E-5523 which were incorrect. Although the inspector considered the licensee's action to be sufficient to close this item, the safe shutdown analysis could be further clarified and improved.

9. Exit Interview (30703)

The inspectors met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on February 22, 1994. During this meeting, the inspectors summarized the scope and findings of the inspection as they are detailed in this report, with particular emphasis on the Violations addressed below. The licensee representatives acknowledged the inspector's comments and did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. No dissenting comments from the licensee were received.

<u>Item Number</u>	<u>Description and Reference</u>
400/94-05-01	Violation: Failure to implement procedures properly, paragraphs 2.c, 2.d(2), and 4.a(1).
400/94-05-02	Violation: Failure to implement corrective action to preclude recurrence, paragraphs 2.d(1) and 2.e.
400/94-05-03	Non-Cited Violation: Failure to control a locked high radiation area, paragraph 5.b.

10. Acronyms and Initialisms

ACFR	-	Adverse Condition Feedback Report
AFD	-	Axial Flux Difference
AFW	-	Auxiliary Feedwater
BATP	-	Boric Acid Transfer Pump
CCTV	-	Closed Circuit Television
CCW	-	Component Cooling Water
CFR	-	Code of Federal Regulations
CSIP	-	Charging Safety Injection Pump
DSR	-	Daily Surveillance Requirement
EDG	-	Emergency Diesel Generator
ESCWS	-	Essential Services Chilled Water System
ESW	-	Emergency Service Water
FASR	-	Final Safety Analysis Report
HVAC	-	Heating Ventillation Air Conditioning
LCO	-	Limiting Condition for Operation
LER	-	Licensee Event Report
LHRA	-	Locked High Radiation Area
LTOP	-	Low Temperature Overpressure Protection
MCB	-	Main Control Board
MCC	-	Motor Control Center
MCR	-	Main Control Room
MSIV	-	Main Steam Isolation Valve
NAD	-	Nuclear Assessment Department
NRC	-	Nuclear Regulatory Commission
PCR	-	Plant Change Request
PM	-	Preventive Maintenance
PNSC	-	Plant Nuclear Safety Committee
QA/QC	-	Quality Assurance/Quality Control
QV	-	Quality Verification
RAB	-	Reactor Auxiliary Building
RCS	-	Reactor Coolant System
RFO	-	Refueling Outage
RHR	-	Residual Heat Removal
RTD	-	Resistance Temperature Detector
RWST	-	Refueling Water Storage Tank

<u>Item Number</u>	<u>Description and Reference</u>
400/94-05-01	Violation: Failure to properly implement procedures, paragraphs 2.c, 2.d(2), and 4.a(1).
400/94-05-02	Violation: Failure to implement corrective action to preclude recurrence, paragraphs 2.d(1) and 2.e.
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RHR	-	Residual Heat Removal
RTD	-	Resistance Temperature Detector
RWST	-	Refueling Water Storage Tank

TDAFW - Turbine Driven Auxiliary Feedwater
TS - Technical Specification
WPB - Waste Processing Building
WR - Work Request