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

Report No.: 50-400/94-15

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: July 2 - August 5, 1994

Inspectors: _____ 8/18/94
J. Tedrow, Senior Resident Inspector Date Signed

_____ 8/18/94
D. Roberts, Resident Inspector Date Signed

Approved by: _____ 8/18/94
H. Christensen, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Scope:

This routine inspection was conducted by two resident inspectors in the areas of plant operations, review of nonconformance reports, followup of onsite events, operator training, maintenance observation, surveillance observation, design and installation of modifications, system engineering, plant housekeeping, radiological controls, security, fire protection, emergency preparedness, 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:

No violations or deviations were identified.

The licensee declared an unusual event when both emergency diesel generators became inoperable, paragraph 2.c. Emergency action levels were appropriately declared and clear notifications made for the unusual event, paragraph 5.e.

With the exception of operations supervision, supervisory personnel frequently entered the radiation controlled area, paragraph 2.a(2)(b). Licensee efforts to disseminate an industry event was good, paragraph 2.d. A new multi-discipline work group was formed to expedite planning and repair of emergent

work items, paragraph 3.a(2). An evaluation of a safety injection valve chamber was considered to be thorough, paragraph 4.a(3).

Control room logs covering the actions taken for cooling water flow test discrepancies and for power maneuvers were considered to be incomplete, paragraph 2.a(1). Control room administrative assistance has been reduced, paragraph 2.a(2)(a). The review of data for a surveillance test was considered to be poor, paragraph 3.b(1). Referral to a voltage regulator equipment technical manual for troubleshooting guidance was slow, paragraph 4.c(4). The initial evaluation of cooling water flow to the charging pumps was considered to be deficient since it did not address the system temperature profile, paragraphs 4.b and 4.c(1).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

D. Batton, Manager, Work Control
D. Braund, Manager, Security
*B. Christiansen, Manager, Maintenance
J. Collins, Manager, Training
J. Dobbs, Manager, Outages
*J. Donahue, General Manager, Harris Plant
*R. German, Manager, Plant Support Services
*M. Hamby, Manager, Regulatory Compliance
*M. Hill, Manager, Site Assessment
D. McCarthy, Manager, Regulatory Affairs
J. Nevill, Manager, Technical Support
R. Prunty, Manager, Licensing & Regulatory Programs
*W. Robinson, Vice President, Harris Plant
W. Seyler, Manager, Project Management
H. Smith, Manager, Radwaste Operation
B. White, Manager, Environmental and Radiation Control
*O. Wilkins, Manager, Spent Fuel
*A. Williams, Manager, Shift Operations
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. Plant Operations (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.

In general, the inspectors found the logs to be readable, well organized, and provided sufficient information on plant status and events. However, the inspector found the control room logs to be incomplete regarding the licensee's actions taken for the emergency service water (ESW) cooling water flow tests for the charging/safety injection pumps (CSIPs). The inspector was able to retrieve the necessary information from other sources. Additionally, the shift supervisor's logs regarding actions following two unusual events were incomplete. The logs for July 23 did not contain an entry denoting when a reactor power increase was commenced to bring power from 18 percent at 12:15 a.m. to the 29 percent power level that was noted at shift turnover. The reactor operator logs, however, did contain that information. Clearance tagouts were found to be properly implemented.

No violations or deviations were identified.

(2) Facility Tours and Observations

Throughout the inspection period, facility tours were conducted to observe 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; turbine building; fuel handling building; emergency service water building; battery rooms; electrical switchgear rooms; technical support center, and emergency operations facility.

During these tours, observations were made regarding monitoring instrumentation which included equipment operating status, 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 inspector 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 these areas was satisfactory. No violations or deviations were identified.

As mentioned in NRC Inspection Report 50-400/94-13, excessive seal leakage was evident on the "A" and "B" CSIPs. Licensee personnel completed seal repairs to the pumps and

have returned them to service. The inspectors noted a reduction of seal leakage from both pumps.

(a) The licensee has recently reduced the control room staff by eliminating some of the shift production assistants. These personnel were previously on each shift and provided clerical support to the shift supervisor. Presently only one person provides these services on the regular day shift. The inspectors evaluated the effect of this action on control room personnel. Although some administrative functions were being performed by licensed operators or the shift technical advisor, no significant increase in administrative burden was noticed which would distract the operators from their duties.

(b) The inspectors reviewed a report showing the number of radiological controlled area (RCA) entries made by each supervisor and manager at the site. This report was generated by the environmental and radiological control manager at the request of the plant general manager to help determine the level of supervisory presence in the field. It covered the 3-month period from April 1 to July 1, 1994. Management's presence in the RCA was apparent based on the reviewed data. Key personnel such as the operations and maintenance managers averaged between 8 and 10 entries per month. The 10 maintenance foremen each made between 7 and 52 entries during the 3-month period. The inspectors noted that the I&C and mechanical/electrical maintenance supervisors made 68 and 53 entries during the period. The report indicated that various radiation control supervisors made regular visits to the RCA.

While it was apparent that the above-noted supervisory personnel were getting into the field, the data also indicated that the control room shift supervisors were not as visible in the RCA. According to the report, the eight shift supervisors each made between 2 and 11 entries into the RCA, with only 4 making more than 3 entries during the entire 3-month period. A total of 42 entries were made by all of the shift supervisors. Considering that the report covered a 91-day period and that there were two operating shifts manned per day, the total figure represented an average of less than one RCA visit by a shift supervisor every four shifts. The inspectors considered this figure to be low. Licensee management agreed and the acting manager of shift operations stated that a night order would be issued reminding the shift supervisors of the need to get into the RCA more often.

The inspectors considered the plant general manager's initiative to determine the level of supervisory presence in the field to be appropriate.

b. 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. No violations or deviations were identified.

c. Followup of Onsite Events (93702)

At 5:01 p.m. on July 22, 1994, the licensee declared an unusual event due to both emergency diesel generators (EDGs) being inoperable. The "B" EDG had been declared inoperable the previous day due to DC control power problems. Following maintenance on a loose DC power fuse holder, the "B" EDG was tested at 2:25 p.m. on July 22. This test failed because generator frequency did not stabilize near the acceptance value of 60 hertz. At 4:57 p.m. on July 22 the "A" EDG was tested in accordance with TS 3.8.1.1.b to ensure operability. During this test field amperage, field voltage and MVAR fluctuations occurred. The "A" EDG was declared inoperable at 4:57 p.m. which satisfied the entry requirements of the emergency plan for an unusual event declaration. Troubleshooting efforts for both the EDG problems could not immediately identify the causes. At 9:05 p.m. a power decrease was commenced in accordance with TS 3.8.1.1.f and another unusual event was declared as required by the emergency plan.

Deficiencies (as discussed in paragraph 3.b.(2)) on the "A" EDG were repaired and at 12:25 a.m. on July 23 the "A" EDG was tested satisfactory and declared operable. The plant shutdown was stopped and power stabilized at approximately 20 percent. After plant management reviewed the corrective actions taken, the unusual event was terminated at 2:12 a.m. on July 23.

d. Operator Training (71707)

In response to an April 7, 1994 event at another nuclear plant involving a reactor scram, two safety injections, and water solid conditions, the inspectors held discussions with several operators and operator training personnel. The inspectors observed that written documentation of the event had been routed throughout the operations and training organizations and that operators were aware of the technical aspects of the event. In addition, the inspectors noted that the event was formally incorporated into lesson plans for upcoming initial operator license training classes. Training personnel also incorporated informal discussions and a brief simulator scenario into the current licensed operator requalification cycle. The inspector observed

the simulator scenario and followup operator discussions and concluded that the licensee's efforts to increase operator knowledge and awareness of this key industry event were good.

3. Maintenance

a. Maintenance Observation (62703)

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

- Replace fuse block in the DC control power circuit for the "B" EDG.
- Replace electronic governor for the "B" EDG and post maintenance testing in accordance with EPT-151, Emergency Diesel Generator Response Test.
- Investigate voltage swings and repair linear reactors in the voltage regulator circuit for the "A" EDG.
- Perform calibration check on the frequency transducer for the "B" EDG in accordance with procedure PIC-E026, Scientific Columbus Model 62848 Frequency Transducer and Indicator Calibration Check.
- Replace oil in 1C-NNS starting air compressor for the "B" EDG in accordance with procedure MST-M0031, Emergency Diesel Generator Starting Air Compressor periodic maintenance.
- Troubleshoot spike on reactor coolant system (RCS) temperature loop 2 and perform MST-I0038, Delta T/Tavg Loop (T-0412) Calibration, to verify operation of replacement components.
- Troubleshoot Breaker 106 ("A" EDG output breaker) indicating light problem following a failure of the amber indicating light to illuminate as required after breaker was manually closed.

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

(1) An automatic reactor trip was avoided on July 11, 1994, when a loop 2 delta T/Tavg channel spiked high causing several alarms and trip bistables to actuate. Three minutes earlier, licensee personnel had just completed a surveillance test procedure which placed the loop 3

Overtemperature Delta T (OTΔT) bistable in the tripped condition. The loop 2 spike was only high enough to trip the OTΔT and Overpower Delta T (OPΔT) rod-stop and turbine runback bistables, and the OPΔT Reactor Trip bistable. Had the spike occurred 3 minutes earlier and had it been high enough to trip the OTΔT trip bistable, the 2/3 reactor protection system logic would have been satisfied to generate a reactor trip signal.

Licensee personnel investigated the loop 2 perturbation using procedure MST-I0038, Delta T/Tavg Loop (T-0422) Calibration. Maintenance I&C technicians took as-found output voltage readings for several cards in the ΔT/Tavg loop after applying steady-state voltage inputs. The technicians determined that one card's output voltage fluctuated in response to the steady-state input and another card had a faulty gain potentiometer. These cards were replaced and the procedure was completed satisfactorily. The inspectors observed the troubleshooting and maintenance efforts conducted on the RCS temperature loop and identified no discrepancies.

(2) The licensee recently began a new "fix it now" multi-discipline work process in an effort to reduce the maintenance backlog. This new process was described in procedure MMM-036, Multi-Discipline Work Team Process. The team created by this procedure consists of representatives from various work groups including operations; health physics; electrical, mechanical, and I&C maintenance disciplines, work management/planners; and a component engineer. The team's charter was to review work requests generated the previous day to determine which of these can bypass the normally lengthy planning and scheduling process, and be worked more efficiently by the team. Any tickets that did not involve plant modifications, safety system outages, master or lengthy clearances, special radiation work permits, or repairs on code equipment are within the scope of work that could be performed by the team. In the absence of a sufficient work load from the previous day's tickets, the team was allowed to review the existing backlog to find work.

The procedure outlined pre-work activities which included an abbreviated planning process. Planning would involve a health physics review, post-maintenance testing determination, and engineering assistance as necessary. At the end of this inspection period, a total of 192 tickets had been dispositioned by the multi-discipline team. Some of these tickets were determined to be outside of the scope of the team and were deferred to the normal work management process, but the majority were field completed by the new team. The inspectors considered this initiative to be a

good effort to help reduce the maintenance backlog at the plant.

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-1013 1A-SA Emergency Diesel Generator Operability Test
- OST-1073 1B-SB Emergency Diesel Generator Operability Test
- OST-1214 Emergency Service Water Operability Train A
- OST-1215 Emergency Service Water Operability Train B
- MST-I0038 Delta T/Tavg Loop (T-0422) Calibration

In general, 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.

(1) The inspector compared the data collected in procedures OST-1214 performed on July 3 and OST-1215 performed on July 2 to declare the CSIPs operable. During the "A" train test, licensee personnel measured a Charging/Safety Injection Pump (CSIP) oil cooler inlet pressure of 29.5 PSIG and a cooler outlet pressure of 23.5 PSIG. These same parameters were also recorded on the "B" train test as 63 PSIG and 31 PSIG, respectively. The corresponding cooler flowrate calculated under these conditions was 83 gpm for the "A" train and 75 gpm for the "B" train. Considering the similar construction and design of the coolers, the inspector did not understand how a differential pressure of 6 PSI for the "A" cooler equated to the same approximate flow as 32 PSI for the "B" cooler. This discrepancy was discussed with licensee engineering personnel and the "A" train test was reperformed on July 6, 1994. The inspector observed the performance of the July 6 test and noted a differential pressure across the cooler of approximately 40 psi. The cooler differential pressure was not utilized in the procedures for measuring flow. However, since these procedures were performed to declare the CSIPs operable, the inspector considered the review of the data collected to be weak in that a potential deficient condition was not detected or investigated.

(2) The inspectors reviewed the licensee's testing and troubleshooting efforts for the EDG's. Test results were reviewed as were EDG operating logs. Portions of EDG testing and troubleshooting were also observed.

As discussed in paragraph 2.c, deficiencies were indicated with both EDG's. Troubleshooting of the "A" EDG by licensee personnel revealed loose through-bolts on the linear reactors for the voltage regulator. The generator output voltage sensing circuit utilized power transformers in series with the linear reactors to provide the input to the voltage regulator. Licensee personnel believed that the loose bolts caused faulty inputs to be provided to the voltage regulator which responded with fluctuations of field voltage and current. The bolts were tightened and at 12:25 a.m. on July 23 the "A" EDG was tested satisfactory. Problems with the "B" EDG included the initial DC control power loose fuse block, loose through-bolts on the linear reactor for the voltage regulator found following identification of the same problem on "A" EDG, improper frequency stabilization following restart from the fuse block replacement, and load fluctuations observed while running the "B" EDG following the fuse block replacement. The inspector was present at the EDG when a load fluctuation occurred from 6.2 MW to 2 MW.

Following the correction of the loose through-bolts on the linear reactors, the "B" EDG was tested satisfactory. However, licensee personnel could not correlate the load fluctuation symptoms, which indicated a governor control problem, with the deficiencies found on the voltage regulatory circuits. Therefore the licensee decided to replace the electronic governor for the "B" EDG. The "B" EDG was tested satisfactory following the electronic governor replacement (see paragraph 4.b(4) for more discussion on EDG problem resolution). On July 25 the "A" EDG was tested again to verify proper operation. Minor fluctuations (30 volts) were still observed in field voltage and amperage. These fluctuations were not severe enough to consider the EDG inoperable but did indicate that a slight deficiency still existed. On July 28 the "A" EDG was started for troubleshooting with test equipment installed on the voltage regulator circuits. No abnormal operating characteristics were observed during this subsequent run.

No violations or deviations were observed.

4. Engineering

a. Design/Installation/Testing of Modifications (37551)

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, PCR's documenting engineering evaluations were also reviewed. The following modifications and/or testing in progress was observed.

- PCR 6905 2166-B-041 Drawing Revision, Thermal Overload Relay Header Sizes and Valve Tag Numbers
- PCR-7291 Operation at Reduced Power with Inoperable MSSVs
- PCR-7324 Control Board Annunciator Alarms
- PCR-7367 Safety Injection Valve Chamber Entry
- PCR-7368 VC-3 Penetration Conductors
- PCR-7360 ESW Operability With Strainer Backwash Isolated

(1) As discussed in NRC Inspection Report 50-400/94-10, the licensee had implemented conservative actions for operation with an inoperable Main Steam Safety Valve (MSSV). Engineering evaluation PCR-7291 was performed to establish new setpoints for Table 3.7-1 of TS 3.7.1.1.a in accordance with the vendor advisory letter. The licensee issued a TS interpretation (TSI 94-002) to implement the new setpoints until a formal TS change request could be submitted and approved. The inspector verified the licensee's calculations and considered the interim actions taken to be appropriate.

(2) Temporary modification PCR-7324 was initiated to defeat faulty main control board annunciator alarms which receive bad inputs. Selected alarm inputs were disabled to eliminate operator distractions and to prevent masking other valid alarm conditions. This modification was written generically to replace the independent temporary modifications for each annunciator. Presently the licensee has two alarm inputs disabled: steam generator backleakage thermocouple TE-2006C1, and primary reactor support temperature element TE-7922. These inputs were providing false signals to the alarms and were disabled to allow the remaining temperature inputs to provide alarm annunciation.

The safety evaluation for this modification was also written generically so that any additions could be added by a field change to the modification and appropriate changes to the safety evaluation incorporated. The inspector reviewed the safety evaluation and the criteria used in the determination of which alarms could be disabled. The inspector concluded that the alarms presently defeated would not adversely affect plant operation.

(3) Engineering Evaluation PCR-7367 was initiated to evaluate whether or not opening the safety injection valve chamber for access to an "A" residual heat removal pump suction valve, 1SI-300, constituted a primary containment breach. The evaluation concluded that opening the valve chamber did not constitute a breach of primary containment and therefore, actions required by TS 3.6.1.1, were not required. Specifically, the evaluation addressed the design features of the valve chamber, and considered a leak-tight concentric guard pipe that enclosed the safety injection piping penetrating containment. The licensee's evaluation also included a risk analysis to determine the probability of a large release from containment through the valve packing on valve 1SI-300 with the valve chamber open. The risk analysis concluded that the probability of such an occurrence was five orders of magnitude less than the probability of release per year from all accident scenarios. Since the valve chamber was included in the plant Final Safety Analysis Report (FSAR) as a specific exception to 10 CFR 50, Appendix A, Criterion 56, Primary Containment Isolation, the licensee's evaluation included a safety analysis and an unreviewed safety question determination in accordance with 10 CFR 50.59. These analyses concluded that in the event of a passive failure such as an unisolable 1SI-300 packing leak, the RAB emergency exhaust system would compensate for the leak and keep any related release within the bounds of FSAR Chapter 15 accident analysis. The inspectors concluded that this engineering evaluation was thorough in justifying opening the valve chamber to allow access to valve 1SI-300.

No violations or deviations were identified.

b. Licensee Action on Previously Identified Engineering Inspection Findings (92903)

(Open) Inspector Followup Item 400/94-13-05: Examine the licensee's design review of the ESW system cooling water supply to the CSIP oil coolers and development of a better test method.

After licensee personnel separated the cooling water return headers from the CSIP oil coolers, surveillance procedures were revised for the new valve lineups and testing was performed. The

results of these tests showed that flow through the coolers (greater than 75 gpm) was substantially greater than the minimum required (30 gpm). Following the performance of the test on the "A" train the "A" CSIP was declared operable on July 3 and the "C" CSIP was returned to the standby lineup.

The licensee performed calculations to determine the minimum flowrate necessary for the CSIP oil coolers. Based upon a service water supply temperature of 95 degrees F, this flowrate was re-analyzed to be only 15 gpm instead of the vendor recommended 30 gpm. In addition, licensee personnel analyzed the effect that a single failure of an auxiliary reservoir discharge isolation valve would have on CSIP cooling water flow. Although initial engineering calculations, using a system flow model, indicated sufficient cooling to the CSIP oil coolers, on July 18 it was determined that the temperature of this supplied cooling water would be elevated due to possible heat removal from other ESW system loads and inadequate cooling of the CSIPs could result. This potential condition which could have prevented mitigation of the consequences of an accident was verbally reported to the NRC Operations Center at 6:18 p.m. on July 18, 1994.

Licensee personnel are presently performing a more detailed thermodynamic analysis of the ESW system to determine if sufficient cooling water would be available to the CSIPs under this failure scenario. The nuclear steam system supplier was contacted by the licensee to provide independent verification of the licensee's calculations and methodologies. In the interim the licensee has changed the cooling water valve alignment to the CSIPs such that the CSIP cooling water supplies, as well as the cooler returns, are from separate headers.

The inspectors reviewed the engineering calculations produced thus far and the flow model results. Also, the cooling water valve lineup was independently checked in the field. Although incomplete, the licensee's calculations were considered to be satisfactory. The licensee's initial engineering analysis was considered to be deficient as it did not address thermodynamic aspects of the cooling water flow which resulted in a delay of the more thorough analysis.

Since the licensee has not yet completed the thermodynamic analysis, this item will remain open pending further NRC review of the analysis.

c. System Engineering (37551)

(1) The inspectors reviewed an operability determination conducted in accordance with procedure TMM-408, Operability Determination, for the degraded condition of seat leakage past the normal service water supply valve (1SW-39) to the "A" ESW supply header. As mentioned in NRC Inspection

Report 50-400/94-13, this leakage was suspected to be causing high backpressures in the idle ESW header during surveillance testing. The operability determination concluded that the seat leakage would not adversely effect emergency operation of the ESW system since valve design would tend to seat the valve if higher ESW system pressure was present. If the normal service water header was under higher pressure, leakage into the ESW system was considered to be beneficial. The licensee's subsequent evaluation of ESW flow utilizing the flow model revealed that ESW inleakage could be detrimental if header pressure was maintained high. The inspector considered the evaluation to be deficient in the examination of the potential effects of inleakage.

(2) During a plant tour the inspector noted that motion restraint bolts associated with the expansion joints for piping downstream of the ESW pumps were loose. The expansion joints had recently been replaced during the refueling outage. This observation was discussed with the system engineer. The inspector was informed that the component vendor was contacted and reported that these tie rods were for installation purposes and not required for structural integrity. The inspector also reviewed plant drawings which contained a note stating that the bolts were not to be used for restraining pressure thrust. Therefore system operability was not affected. The inspector considered the maintenance of these restraints to be satisfactory.

(3) Licensee personnel performed procedure EPT-252T, Temporary Procedure for Emergency Service Water A Train Strainer Differential Pressure Test, to measure the buildup of deposits on the ESW pump discharge strainer when operated without the automatic backflushing system in service. This test was performed to substantiate a decision to declare the ESW system operable with this support system inoperable.

The inspector monitored the performance of this test and independently obtained strainer differential pressure data on two occasions. Licensee personnel collected data at 6-hour intervals over a period of approximately 4 1/2 days. The data indicated no change in strainer differential pressure which supported the licensee's position that the strainer backflush system was not required for immediate ESW system operability. The inspector considered the conduct of this test to be satisfactory.

(4) The inspector reviewed the licensee's action taken in response to the deficiencies found on the EDG's. Control wiring diagrams and the component technical manuals were researched by the inspector and the system operation

discussed with the applicable system engineers. The inspector found that the set-up of the electronic governor on the "B" EDG and associated testing incorporated the recommendations of the technical manual. Procedure EPT-151, which was performed to verify proper governor response, likewise was found to properly implement technical manual recommendations. The licensee contacted vendor representatives as well as other nuclear plants, which experienced similar EDG problems, in order to develop appropriate action plans. The operability determinations for the EDG problems stated the deficiencies observed and the resultant corrective action taken. The inspector found these operability determinations to be satisfactory.

During this review the inspector noted that license personnel had not referenced the generator technical manual to obtain information about the voltage regulator until approximately four days following the event. The inspector was informed that the location of voltage regulator information could not be readily found. The inspector considered the ability to readily access this information to be weak. However, from a review of the technical manual, the inspector determined that appropriate troubleshooting steps had been performed.

(5) While performing the analysis of ESW flow to the CSIP oil coolers mentioned in paragraph 4.b, licensee personnel identified yet another potential discrepancy regarding ESW flow to safety-related equipment. The flow model used by the licensee suggested that flows to the essential services chilled water system (ESCWS) chillers, which provide cooling for various safety-related air handlers, may be inadequate when the ESW system is aligned to the main reservoir at the TS minimum elevation of 205.7 feet. This preliminary analysis suggested that the TS may be inadequate and that an administrative minimum reservoir level of 215 feet should be established until a final analysis was complete. The inspectors did not have an immediate concern because the ESW system is normally aligned to the auxiliary reservoir and the main reservoir level is usually at 219 feet. The new administrative limit of 215 feet for the main reservoir was conveyed to the shift supervisor via a memo dated July 29, 1994 from a cognizant engineer. A night order was issued on August 12, 1994, referencing the new administrative limit for the main reservoir level.

When the final analysis of ESW flow to the ESCWS chillers is completed, a determination can be made as to whether the current TS limit is adequate.

Inspector Followup Item (400/94-15-01): Follow licensee's actions to determine the adequacy of ESW flow to the ESCWS

chillers while aligned to the main reservoir at the minimum TS level.

Except for the deficiencies noted above, engineering support for the ESW and EDG was extensive and appropriate actions were initiated. Vendor support was readily requested to help analyze and troubleshoot the identified problems. 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.

b. Radiological Protection Program (71750) - Radiation protection control activities were observed to verify that these activities were in conformance with the facility policies and procedures, and in compliance with regulatory requirements. The inspectors also verified that selected doors which controlled access to very high radiation areas were appropriately locked. Radiological postings were likewise spot-checked for adequacy.

c. Security Control (71750) - 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 protected area lighting, protected and vital area barrier integrity, and the security organization interface with operations and maintenance.

d. Fire Protection (71750) - 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. During plant tours, areas were inspected to ensure fire hazards did not exist.

e. Emergency Preparedness (71750) - Emergency response facilities were toured to verify availability for emergency operation. Duty rosters were reviewed to verify appropriate staffing levels were maintained. As applicable, emergency preparedness exercises and drills were observed to verify response personnel were adequately trained. The inspector reviewed the event notifications made by licensee personnel to the NRC for the unusual event declarations mentioned in paragraph 2.c. Many of these notifications were conducted in the presence of the inspector. The inspector found the notifications to be clear and concise and that appropriate emergency action levels had been declared for the events.

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, emergency preparedness requirements and TS requirements in these areas was satisfactory. No violations or deviations were identified.

6. Exit Interview (30703)

The inspectors met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on August 5, 1994. During this meeting, the inspectors summarized the scope and findings of the inspection as they are detailed in this report. 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.

Item Number	Description and Reference
400/94-15-01	Inspector Followup Item: Follow licensee's actions to determine the adequacy of ESW flow to the ESCWS chillers while aligned to the main reservoir at the minimum TS level, paragraph 4.c(5).

7. Acronyms and Initialisms

ACFR - Adverse Condition Feedback Report
CFR - Code of Federal Regulations
CSIP - Charging Safety Injection Pump
DC - Direct Current
DeltaT- Differential Temperature
EDG - Emergency Diesel Generator
ESCWS - Essential Services Chilled Water System
ESW - Emergency Service Water
FSAR - Final Safety Analysis Report
gpm - gallons per minute
I&C - Instrumentation and Control
MSSV - Main Steam Safety Valve
MVAR - Million Voltage-Ampere Reactive
MW - Megawatt
NRC - Nuclear Regulatory Commission
OPΔT - Overpower Delta T
OTΔT - Overtemperature Delta T
PCR - Plant Change Request
PSIG - Pounds Per Square Inch Gage
RAB - Reactor Auxiliary Building
RCA - Radiological Controlled Area
RCS - Reactor Coolant System
TAVG - Average Temperature
TS - Technical Specification