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REGION II

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Report No: 50-325/96-13, 50-324/96-13

Licensee: Carolina Power & Light (CP&L)

Facility: Brunswick Steam Electric Plant, Units 1 & 2

Location: 8470 River Road SE
Southport, NC 28461

Dates: August 4 - September 14, 1996

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Enclosure 1

EXECUTIVE SUMMARY

Brunswick Steam Electric Plant, Units 1 & 2 NRC Inspection Report 50-325/96-13, 50-324/96-13

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a 6-week period of resident inspection; in addition, it includes the results of a training inspection by a regional licensing examiner and a health physics inspection by a regional inspector.

Operations

A violation was identified for failure to follow the equipment clearance procedure. (Section 04.1). A Reactor Operator positioned a sample selector switch while under clearance without a temporary tag lift.

The licensee was effective in conducting written and operating examinations to ensure operator mastery of the requalification training program content. (Section 05.1).

A violation was identified for failure to properly implement the Licensed Operator Requalification (LOR) Program. (Section 05.1). An operator failed to complete the LSRO training program as required prior to taking the LSRO audit examination.

A non-cited violation was identified for failure to provide complete and accurate information as required by 10 CFR 50.9, Completeness and Accuracy of Information. Additionally, two program weaknesses, one in operator remediation and one in emergency plan training were identified. (Section 05.1).

Maintenance

Despite minor problems observed with foreign material exclusion practices during initial new fuel receipt and inspection, the involved personnel showed adequate knowledge of performed activities. (Section M1.2).

A weakness was identified in preparation of the maintenance package for installation of a fire pump relief valve. (Section M1.4). The package did not discuss valve orientation as specified in the vendor installation instructions.

Engineering

Followup actions for a feedwater heater water hammer event were not effective to prevent another event. (Section E2.2).

A violation was identified for not maintaining the Unit 2 criticality monitor setpoint at greater than 5mR/hr. (Section E7.1). Failure to properly revise documents in accordance with an Engineering Evaluation resulted in a criticality monitor being out of compliance with 10 CFR 70.24 requirements.

Plant Support

Two violations or deviations were identified concerning a contamination event. (Section R1.1). One violation was for failure to follow licensee radiological control procedures required by Technical Specification 6.8.1. The other violation was for failure to perform radiological surveys required by 10 CFR 20.1501. Three separate NRC inspections since September of 1992 have identified survey violations. Corrective actions to these violations do not appear to have been fully successful over the long term.

Radiological facility conditions and housekeeping were observed to be good. (Section R1.2).

The repetitive nature of control room access challenges, as well as a tolerance of nonconforming access practices by Environmental & Radiation Control management was seen as a weakness (Section R1.3).

The licensee's preparations for Hurricane Fran were prompt and thorough (Section P1.1). A good assessment of the site's readiness for restart was conducted. The licensee temporary suspension of security and fire watch rounds were appropriate due to the storm conditions (Section S1.1).

Report Details

Summary of Plant Status

Unit 1 operated for 50 days until the unit was shutdown on September 5, 1996, in preparation for Hurricane Fran. On September 5, 1996, the site experienced hurricane force winds of 115 miles per hour for about ten hours with wind gusts up to 125 miles per hour. No significant damage occurred to safety related structures. Several buildings suffered damage as a result of the storm. The roofs of the Unit 1 Turbine Building, the Unit 2 Reactor Building and the Operations and Maintenance (O&M) building developed leaks. Several sections of siding were blown off the Technical and Administration Center (TAC) and O&M buildings, and the Work Control Center (WCC) building. After the Federal Emergency Management Agency (FEMA) review of the 10 mile emergency planning zone the unit returned to service on September 10, 1996. At the end of the report period Unit 1 had operated five days.

Unit 2 operated for 41 days until the unit was shutdown on September 5, 1996, in preparation for Hurricane Fran. The unit returned to service on September 13, 1996. At the end of the report period the unit had operated one day.

I. Operations

03 Operations Procedures and Documentation

03.1 Procedures for Average Power Range Monitor (APRM) Gain Adjustment Factor (GAF) adjustment (42700)

a. Inspection Scope (42700)

Review PT-1.11, Revision 35, dated November 6, 1995, Core Performance Parameter Check, to determine if this procedure could be used after the turbine was on line. The inspector was concerned that the APRMs could be reading much higher than alternate indications resulting in non-conservative scram setpoints.

b. Observations and Findings

The inspector identified that PT-1.11, Rev 35, is required to be performed:

- once per 24 hours when operating greater than or equal to 25% thermal power
- within 12 hours after completion of a thermal power increase of at least 15% of rated thermal power
- initially and at least once per 12 hours when the reactor is operating with a LIMITING CONTROL ROD PATTERN for Average Planar Linear Heat Generation Rate or Minimum Critical Power Ration
- prior to 25% thermal power

GP-03, Rev 40, Unit Startup and Synchronization, states that APRM indicated power levels should not be reduced (non-conservative) by gain adjustments below 25% thermal power, otherwise, non-conservative APRM readings (gain adjustment factor (GAF) greater than 1 may result from adjustment as power is increased. GP-03, Rev 40, Step 18.b. further indicates regardless of power level or whether the main turbine is on line to perform conservative APRM GAF adjustments, as required, in accordance with OP-09, Neutron Monitoring System Operating Procedure, Revision 17, dated 12/19/94. OP-09 initial conditions for adjusting the APRM GAFs are:

- The reactor mode switch is in RUN or START & HOT STBY
- The Process Computer is in operation in accordance with OOP-55, Revision 19, dated June 5, 1995, Plant Process and ERFIS Computer Systems Operating Procedure.

OOP-55, Rev 19, does not require the main turbine to be online as an initial condition.

c. Conclusions

The inspector identified no negative findings.

04 Operator Knowledge and Performance

04.1 Clearance Tag Errors

a. Inspection Scope (71707)

The inspectors reviewed the events concerning several clearance tag or equipment control difficulties during August 21 - September 10, 1996.

b. Observations and Findings

During this inspection period the inspectors reviewed several clearance tag or equipment control difficulties. On August 25, 1996, licensee personnel entered the Unit 2 B-North waterbox for debris filter cleaning. While attempting to pump down the water level in the box, it was determined that flow still existed into the waterbox. Further investigation revealed that Amertap piping from the B-South waterbox was the source. Boundary clearance 2-96-2341 did not identify the importance of several valves which provided a cross connection between the B-North and South waterboxes. This clearance was modeled after a similar clearance previously performed on the A-South waterbox. The cross connection valves were overlooked.

On September 10, 1996, after placing the 2C heater drain pump in operation the pump packing was found to be hot and smoking. Subsequent investigation by the licensee discovered that the pump had been started without gland seal water flow available. The inspector reviewed the condition report, equipment control form, and associated drawings.

On August 21, 1996, after completing maintenance on the 1-CAC-AT-4410 Hydrogen/Oxygen Analyzer System, the licensee was preparing to perform Periodic Test OPT-20.8.2, CAC-AT-4410 Leak Test to verify no monitor tube leakage. The 1-CAC-AT-4410 was under equipment clearance 1-96-01835 for maintenance activities. For performance of the test, a temporary tag lift was required to energize the monitor. In accordance with Administrative Instruction OAI-58, Equipment Clearance Procedure, a tag lift was requested and approved for the AC circuit power supply breaker for the monitor only. Additional steps in the procedure called for operation of the CAC-AT-4410 sample select valve switch located in the control room. The sample select switch was under clearance and required to be in the "off" position. However, the operator repositioned the switch without the OAI-58 required temporary tag lift. The inspector reviewed the associated procedures, clearance order, discussed switch location and operation with licensee personnel, and identified the failure to follow OAI-58, Equipment Clearance Procedure as a violation. This violation was identified as 50-325/96-13-01 Equipment Clearance Error. This violation, despite being identified by the licensee and timely corrective actions taken, was cited because previous examples were non-cited (NCV 96-08-01 concerning operation of equipment while under clearance).

c. Conclusions

Failure to implement adequate boundary clearances and equipment control forms allowed maintenance activities to be conducted without establishing adequate system isolation. A failure to obtain a procedurally required tag lift request before repositioning a switch under clearance was identified as a violation.

05 **Licensed Operator Regualification (LOR) Program Evaluation and Training and Qualification Effectiveness**

05.1 Non-licensed operator qualification cards, Limited Senior Reactor Operator (LSRO) training and LOR remediation

a. Inspection Scope (41500, 71001)

The inspector reviewed the licensee's requalification program for licensed reactor operators and senior reactor operators to ensure safe power plant operation and to evaluate how well the individual operators and crews had mastered the training objectives. Review portions of the non-licensed operator training program to ensure that the appropriate training and qualification programs were developed, implemented, evaluated, documented, and maintained as required by 10 CFR 50.120 and allowed by 10 CFR 55.

b. Observations and Findings

- (1) The inspector reviewed the four LSRO qualification cards for the candidates that took the LSRO examination in December 1995. The LSRO candidates, facility management, and NRC all signed the NRC

form 398 license applications in November 1995. The facility signatures verified that all training was complete. However, The qualification cards were not signed and dated by facility management until February 6, 1996. The facility training department submitted a Condition Report (CR) on February 12, 1996 concerning this matter. According to the CR, the qualification records were not signed off as complete because a change had to be made to the qualification card which required a management authorization signature. These qualification cards were subsequently set aside. When the license applications were routed for signature, the supervisor-initial training, signed them without ensuring that the closure documentation was completed on the LSRO on the job training (OJT) Qualification Card. The facility stated in the CR that all of the required training was completed prior to submitting the 398 forms to the NRC. The inspector reviewed documentation and conducted interviews, to verify that all of the facility OJT training requirements were satisfactorily completed as required by TM-4.21, Revision 1, dated October 30, 1995, LSRO to Refueling Training Program. The inspector identified that one LSRO candidate failed to complete all of the required LSRO training prior to taking the LSRO audit examination. TM-4.21 states, in part, that "each candidate will satisfactorily complete an LSRO Qual card (TM-4.02.08) prior to the LSRO Audit Examination." The audit examination was administered on November 17, 1995. The candidate's OJT was not completed until early December 1995. This is identified as violation 50-325(324)/96-13-02, failure to complete the LSRO training program prior to taking the LSRO audit examination as required by procedures.

- (2) The inspector identified that the LSRO applicants and licensee management signed the NRC form 398 for all four LSRO applicants prior to the completion of the facility audit examinations. All four NRC form 398s were signed before the completion of LSRO training. TM-4.21, paragraph 4.1.3.a. states, in part, "following the training, an audit examination is given to determine if the LSRO trainees are prepared for an NRC license examination." Paragraph 19b (disclosure) on NRC form 398 states, in part, that the subsequent signatures certify that the named individual has successfully completed the facility licensees requirements to be licensed as an RO/SRO pursuant to 10 CFR part 55. The facility provided inaccurate information when they signed the NRC forms 398 before the candidates completed the audit examination and is identified as a 10 CFR 50.9 violation. The inspector noted that the facility has responded promptly to these identified discrepancies and are pursuing an official root cause determination. Therefore, this violation is being treated as an NCV consistent with Section VII.B.1 of the NRC Enforcement Policy. This is identified as NCV 50-325(324)/96-13-03, for failure to provide complete and accurate information as required by 10 CFR 50.9, Completeness and Accuracy of Information.

- (3) 10 CFR 55.59 (c)(5), states, in part, that the facility licensee shall maintain records of the results of evaluations and documentation of operating tests and any additional training administered in areas in which an operator or senior operator has exhibited deficiencies. The inspector reviewed several reports on student performance (from 1994 through 1996) regarding remediation. The inspector identified several cases where the students results were not documented in sufficient detail as required by 10 CFR 55.59 (c)(5), Records. The inspector identified this as a weakness.
- (4) The facility identified in April of 1996 (CP&L Memo dated April 11, 1996) that reactor operators may not be fully trained on all auxiliary operator watchstations. The purpose of this memo was to communicate the compensatory measures that needed to be taken and describe licensee plans for final corrective actions. The facility implemented a program in May of 1996 (CP&L Memo dated May 14, 1996) called "AO Delta." A comparison was made between the system objectives that the AOs were trained on and the objectives that the licensed operators were trained on when both groups received training on the same topic. A qualification card was developed then implemented on May 17, 1996. Licensed operators were not allowed to stand watches in the turbine building or outside until the qualification card for "AOR Makeup For Licensed Operators" was completed. Licensed operators were restricted to reactor building watches until they were "AO Delta" qualified since most of the systems were covered in LOR. The inspector identified on September 12, 1996, that many of the licensed operators had started this new qual card but none of them have completed their qualifications under the new program. This item is identified as IFI 50-325(324)/96-13-04, AOR Makeup For Licensed Operators.
- (5) The inspector identified several cases between 1995 and 1996 where SRO's were unable to adequately classify events during simulator exercises. The inspector reviewed the LOR Emergency Plan lesson topic and one examination in detail. Examination scores, from five different exams, ranged from 70 to 100%. Most of the examination scores were greater than 90%. The operators' poor performance in the simulator, with respect to Emergency Action Level (EAL) classifications, does not reflect the stellar performance that was documented on their written examination course roster. The inspector identified this inconsistency as a training weakness.

c. Conclusions

The inspector determined that the licensee was effective in conducting written and operating examinations to ensure operator mastery of the requalification training program content. However, the inspector identified:

- one violation for an LSRO candidate who failed to complete the LSRO training program as required prior to taking the audit examination
- one non-cited violation for failure to provide complete and accurate information as required by 10 CFR 50.9, Completeness and Accuracy of Information
- one weakness in operator remediation
- one weakness in emergency plan training
- one IFI regarding AOR Makeup For Licensed Operators

08 Miscellaneous Operations Issues (92901)

- 08.1 (CLOSED) Unresolved item 50-325(324)/96-10-01, Determine if Auxiliary Operators Have Been Adequately Trained per TI-104, Auxiliary Operator OJT Checklist. The inspector reviewed several individual AO qualification cards. Two of these individuals were licensed operators. The inspector identified, on one qualification card, where the student received 14 signatures in one day by the same individual. Each signature required an array of duties or applications to be performed. The inspector questioned whether or not these duties could have all been physically performed in one day with any degree of proficiency. The inspector interviewed the trainee and the evaluator. The qualification card was discussed in detail. The trainee and the evaluator stated that the checkouts may have been conducted over the course of many shifts. However, the evaluator did state that if the trainee had previous experience and was familiar with the systems in question that the checkout could have been completed over the course of one shift. The inspector identified that the operator (trainee) was previously qualified as a radwaste operator. The inspector reviewed the operator's performance record and identified no significant errors or incidence that would be indicative of poor or inadequate training. The inspector had no other concerns and considers this item closed.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (61726)

The inspector observed portions of the following maintenance activities and surveillance tests:

- 1-MST-RHR28Q, RHR RSDP System Flow Channel Calibration
- 0-PIC-PS012, ASCO SC12, SC22, SC32, and SC42 Pressure Switch Calibration

- 0-PIC-LS008, Calibration of Magnetrol Model T21 Level Switch
- 2-MST-APRM21Q, APRM A and LPRM Group A Channel Calibration/Functional Test
- 1-MST-AMI27M, AMI Suppression Pool Temperature Monitor Channel Functional Test

b. Observations and Findings

The inspectors verified that work was performed with the procedure present and properly validated in accordance with licensee procedures. Licensee personnel were knowledgeable of their assigned tasks, observed to use good communication and self-checking techniques, and appropriate safety equipment was worn when needed. The inspectors verified that the surveillance tests were performed within their required frequencies, associated documentation was found to be satisfactory, and the observed tests were completed as discussed in this section.

Specific discussions of other maintenance activities inspected are included in M1.2 - M1.4 below.

M1.2 New Fuel Receipt

a. Inspection Scope (62707)

The inspector observed activities associated with the receipt and inspection of new fuel bundles for Unit 1. Discrepancies in the upscale setpoint for a new fuel vault criticality monitor were found and are discussed in Section E7.1.

b. Observations and Findings

The inspector observed the receipt and inspection of several loads of new fuel in preparation for the upcoming Unit 1 outage. The procedures used were current and had been properly verified as required. Initial transport of new fuel into the reactor building and onto the refuel floor was observed and conducted in accordance with OSPP-FUE501, Receiving and Handling of New Fuel Bundles. In accordance with Administrative Instruction, OAI-106, Establishing and Controlling a Foreign Material Exclusion Area, when the new fuel vault was opened, a foreign material exclusion (FME) area was established to prevent loose materials or equipment from being inadvertently dropped into the vault. The inspector observed the licensee FME briefing which discussed the OAI-106 requirements. The inspector observed personnel lean over the FME area without the required lanyard on their safety glasses. Upon notification of these actions by the inspector, the work supervisor notified all personnel present to verify lanyards were used when accessing the area.

Good monitoring by the health physics (HP) technician of area dose limits and of as low as reasonably achievable (ALARA) practices was observed. Plant management concerns about dose received on the fuel inspection platform resulted in additional shielding being added to reduce area dose. During the inspection of the first load of fuel an additional training crew was present on the refuel floor. Despite constant reminders by the health physics technician, several personnel were not actively seeking low dose areas to watch inspection activities. Subsequent notification of the HP technician and work supervisor by the inspector of the infrequent adherence of the training crew to practice good ALARA techniques resulted in reminding personnel present to move to a lower dose area whenever possible.

During the observation of the first load of new fuel, inspection activities were conducted in accordance with the Engineering Procedure OENP-27, New Fuel, Channel Fasteners Inspection. Minor problems were discovered during new fuel transport and inspection. In several new fuel containers and channel containers some moisture was noted. The inspector observed that one out of three tamper-safe seals missing from one of the new fuel inner containers. Upon notification by the inspector, the container was promptly inspected by the licensee and determined to be acceptable.

During a review of subsequent new fuel load inspection activities, an improved crew awareness of FME and ALARA processes was observed by the inspector. The crews appeared knowledgeable of the procedural requirements and compensatory actions if difficulties were discovered. During subsequent new fuel transport activities CR 96-2546 was generated. This CR recorded the improper stacking of the new fuel shipping containers. The licensee promptly identified and corrected the nonconformance. No other discrepancies were identified.

c. Conclusion

Inspector observation of personnel during initial new fuel transport and inspection activities showed minor problems with FME and ALARA practices. Subsequent management involvement in inspection activities improved FME and ALARA practices. Health physics coverage of area dose and ALARA practices was satisfactory.

M1.3 WR/J096-ACTA1, Draining the Unit 1 Equipment Pool

a. Inspection Scope (62707)

The inspectors observed the performance of work activities associated with WR/J0 96-ACTA1, which provided instructions for the draining of the Unit 1 Equipment Pool. The pool was being drained as part of a clean up effort in preparation for the upcoming Unit 1 refueling outage.

b. Observations

This work involved the removal of the water in the equipment pool and transferring it to radwaste for processing. Following removal of the water, the equipment pool would be washed down and coated with a strippable paint to further reduce the contamination levels in the pool. The water was pumped from the equipment pool to the cask washdown area then drained to the waste neutralizer tanks in radwaste. The licensee established a containment tent around the pool area prior to set-up and start of this process to minimize the potential spread of contamination caused by work activities within the pool.

Prior to the start of activities, the inspector attended the final pre-job briefing. During the brief, all aspects of the evolution were discussed and verified ready to support the operation. One topic of discussion was the expected dose rates in the areas of the transfer and drain lines. These levels were discussed and plans to monitor and control these areas were verified to be ready. The work plan and instructions were discussed in detail, including contingency plans and expected actions. The inspector noted that the brief provided a clear outline of the activities, the command and control of the evolution, and the expected actions of all involved.

The initial transfer of water from the equipment pool started on August 15, 1996 and continued on a day to day basis as supported by radwaste until the equipment pool was drained. The inspector observed the transfer process on several occasions during this evolution and noted that all work was being performed per the instructions. The inspector verified that the dose levels in the areas of the transfer lines were within the expected levels. The inspector noted that specific areas near the transfer and drain lines were roped off to control access and minimize personnel exposure during the evolution. When questioned, all involved workers were aware of their responsibilities and required actions, and had good knowledge of the task at hand. Additionally, the inspector noted the presence of the project manager and health physics personnel on the refueling floor monitoring and controlling the work activities through out the conduct of this job.

The licensee completed all equipment pool draining activities on September 4, 1996, when the job was secured in preparation for Hurricane Fran. Following the hurricane, all remaining equipment in the pool was removed. Less than an inch of water remained in the pool. Based on excess dose considerations, plans to apply a strippable paint were canceled in favor of a thorough hyrolaze and drain-down prior to the end of the upcoming outage.

c. Findings

The inspector concluded that the job was thoroughly planned and conducted in accordance with that plan. The personnel involved were

knowledgeable about their tasks and adequately controlled the evolution. No problems or discrepancies were identified during the conduct of this job. This task occurred after additional management attention was placed on the cleanup following the internal contamination event discussed in Section R1.1.

M1.4 Fire Pump Maintenance

a. Inspection Scope (62703/62707)

On August 21, 1996, the inspector reviewed the maintenance activities associated with the motor driven fire pump (MDFP). This system was a maintenance rule system. The pump had failed a performance test and would not deliver greater than 2000 gallons per minute. The maintenance was to replace a leaking relief valve that was the cause of the reduced flow rate.

b. Observations and Findings

The inspector observed the installation of a new relief valve in the system. The clearance tag boundaries were reviewed for clearance CL 2-96-02318. The inspector noticed that, due to the inability to isolate only the MDFP and relief valve, the boundary included the diesel driven fire pump. The inspector verified that a temporary diesel driven fire pump was connected at the discharge canal as a backup while the other fire pumps were out of service. This compensatory measure was required by plant procedures. The inspector walked down the temporary installation at the discharge canal and found no discrepancies.

While observing the installation of the relief valves, the inspector reviewed the maintenance package for the job. The work was being performed under work request/job order (WR/JO) 96-AEXG1. The inspector reviewed the vendor manual, FP 82494, containing information about the relief valve. The installation instructions on page 4, step 5, stated that the relief valve must be installed in a vertical position with a note in parentheses that this was an American Society of Mechanical Engineers (ASME) Code requirement. The relief valve was being installed in a horizontal position. This orientation was the original installation configuration. The inspector discussed this conflict with the supervisor at the job site and later with an engineering supervisor. The licensee contacted the vendor and determined that the installation of the valve was not in accordance with their recommendations. The licensee initiated CR 96-03556, Fire Protection Relief Valve Configuration, to address this issue. The horizontal installation could result in improper seating of the valve. The CR recommended action to either reconfigure the piping, or implement periodic maintenance to inspect the valve seats.

Additionally, the licensee concluded that the ASME code was not applicable to the fire protection system except part B31.1 for pipe supports. An operability concern did not exist since the relief would only lift under infrequent deadhead conditions.

The inspector observed the workers using proper torquing techniques for bolting the relief valve to the piping flanges. Later in the day the pump was tested satisfactorily.

c. Conclusions

The inspector concluded that the work performed on the MDPF was performed with adequate clearance boundaries and compensatory measures. The licensee addressed the question concerning the physical orientation of the relief valve by CR 96-02556. The valve configuration was not previously addressed during preparation of the repair package. This was considered a weakness in preparation of the maintenance package.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Review of Reactor Water Clean Up (RWCU) High Energy Line Break (HELB) Analysis

a. Inspection Scope (37551)

In response to a problem identified at another Boiling Water Reactor (BWR), the licensee reviewed the HELB analysis for the RWCU system. The identified problem involved the isolation signals for RWCU in the event of a HELB outside of primary containment. At the other BWR, it was identified that at lower power levels, automatic RWCU isolation on low reactor water level was prevented by excess makeup capacity of the feedwater system. Alternative isolation signals were not available to provide this automatic isolation on indications of a HELB outside of primary containment.

The licensee reviewed the issue for applicability, and determined that they did not have this problem. The RWCU system at Brunswick is provided with a number of diverse automatic isolation signals for a HELB outside of containment. The safety related automatic isolation signals are: Reactor Water Low Level; High Area Temperature; High Area Differential Temperature; High Differential Flow; Standby Liquid Control initiation; and an additional non-safety related isolation signal on Non-Regenerative Heat Exchanger High Outlet Temperature. The licensee concluded that based on their design review, that they do not have a similar problem. The inspector reviewed the licensee's analysis and the UFSAR description of the RWCU system, and did not identify any problems or discrepancies.

E2.2 Feedwater Heater Water Hammer - Repeat

a. Inspection Scope (37551, 40500)

The inspector reviewed the feedwater hammer event that occurred during Unit 2 startup after Hurricane Fran. A similar event occurred during Unit 2 startup after Hurricane Bertha.

b. Finding and Observations

During shell warming of the Unit 2 main turbine on September 11, 1996, a water hammer event occurred damaging the 4A feedwater heater drain valve, 2-HD-LV-75. The valve yoke was sheared into two pieces. A similar problem occurred during a previous startup as discussed in NRC Inspection Report (IR) 50-325(324)/96-10

The licensee thought they had found the major contributor to pressurization of the 4A and 5A feedwater heater with the discovery of a leaking steam extraction isolation valve to the 5A feedwater heater. Repairs were performed to extraction steam isolation valve to the 5A feedwater heater. As a precaution a manual isolation valve between the 4A feedwater heater and the drain valve, 2-HD-LV-75, was throttled to 20% open. However, despite the throttling of the manual valve the water hammer occurred.

The licensee preceded with the unit startup and repaired valve 2-HD-LV-75 later. The licensee used a thermal imager to identify that extraction steam isolation valve EX-V17 was leaking and pressurizing the 4A feedwater heater.

The inspector reviewed the operator lesson plan ORS-CLS-SM-034-A, Extraction Steam, Feedwater Heaters, Drains and Vents, concerning this system. Two items were noted in the system design that might have prevented the second event. First, this type of feedwater heater has a subcooler near the drain outlet to prevent flashing of vapor. The subcooler was dependent on feedwater flow to be effective. Thus, sequencing of feedwater flow through the feedwater heater at a time during which the feedwater heater could be pressurized would minimize any potential flashing of vapor. Second, the lesson plan discussed startup vents from the heater to the condenser. These vents are supposed to be open during startup to prevent any potential water hammer.

These issues were discussed with licensee management. The licensee had independently reviewed the startup vents. Present plant startup procedures do not open these vents during startup.

Finally, one of the corrective actions from the first water hammer event discussed in IR96-10 was operational contingencies during startup. This was to monitor the feedwater heater during startup for any signs of pressurization. Due to the leaking valve repair to the 5A feedwater heater this was not performed. Additionally, the throttling of the

manual valve was a precaution taken to prevent another water hammer event. Neither of these actions were thorough enough to prevent another event.

c. Conclusions

The inspector concluded, as discussed in NRC IR 96-10, that engineering provided good support to the plant in identification of the damaged drain valve and cause of the first feedwater hammer event. However, engineering followup actions were not effective to prevent another event. Analysis of the problem did not initially consider startup operation of the feedwater heater.

E7 Quality Assurance in Engineering Activities

E7.1 Criticality Monitor

a. Inspection Scope (37551, 40500)

While reviewing the Unit 1 criticality monitor setpoint, the inspector noted several procedural discrepancies.

b. Observations and Findings

While reviewing the procedures associated with the Unit 1 inspection and transfer of new fuel to the new fuel vault, the inspector discovered inaccuracies with the calibration and functional procedures for the new fuel vault criticality monitor 1(2)D22-RM-K600-1(2)-26. This area radiation monitor (ARM) provides indication of an inadvertent criticality occurring in the new fuel vault. During a review of Annunciator Panel Procedure 1APP-UA-03, the inspector observed a reference to Engineering Evaluation Report (EER) 94-168. This EER as well as adverse condition report (ACR) B93-104 documented the licensee finding that the upscale trip setpoint for the criticality monitor was not set in accordance with the 5 mR/hr or greater requirement of 10 CFR 70.24 (a)(2) as committed to in the Updated Final Safety Analysis Report (USFAR). The EER corrective actions proposed changing the upscale trip setpoint from 3 ± 0.2 mrem/hour (mR/hr) to 6 ± 1 mR/hr using work request / job orders (WR/JOs) 94-AHEI1 and 94-AHEK1, and revise several procedures and drawings.

The inspector reviewed all the documents identified for revision and found that the lack of proper followup by engineering with other departments resulted in the closeout of the EER before ensuring several of the items identified were properly updated. The inspector found that only the UFSAR and procedures 1(2) UA-03 had been properly corrected for the new fuel vault monitor. The environmental & radiation control (E&RC) procedure 0-E&RC-0358, Area Radiation Monitors Radiation Response Monthly Test, Rev. 6, System Description SD-11.1, Area and Environs Radiation Monitoring System, and instrument schedule LL-07000-D22 Sheet 3 were not revised as identified in EER 94-099. The inspector discussed the incorrect procedures with the licensee.

Preventive maintenance procedure OPIC-ETU003, GE Area Radiation Monitor Indicators and Trip Unit Model 129B2802, G1 and G11-G17 Calibration, includes instructions for the calibration of the new fuel vault criticality monitor. The inspector determined that on August 22, 1994, revision 14 to OPIC-ETU003 properly changed the criticality monitor setpoint to $6 \pm 1\text{mR/hr}$ as required in accordance with EER 94-168. However, revision 15 on November 17, 1994, erroneously reset the upscale setpoint to 3mR/hr . During subsequent preventive maintenance on the Unit 1 criticality monitor, the setpoint was observed to be incorrect. A procedure change request was initiated and the monitor was correctly reset. Additional inspector questions led to the discovery that the Unit 2 criticality monitor had been outside of compliance with the 10 CFR 70.24 (a)(2) requirement of at least 5mR/hr since December 1994. This indicated that the criticality monitor was not properly set during new fuel receipt and refueling activities for the February 1996, Unit 2 refueling outage. This failure to maintain a preset alarm point of not less than 5mR/hr is identified as violation 50-324/96-13-05 of 10 CFR 70.24(a)(2), Failure to Correctly Update ARM Alarm Setpoint.

Revision 15 to OPIC-ETU003 was intended to reset the upscale setpoint temporary change from 6mR/hr to 3mR/hr for ARM 2-D22-RM-K601-2-4, Condensate Filter Demineralizer Aisle per EER 94-099. The inspector reviewed EER 94-099 and determined that despite the monitor being reset, the documents identified for revision had not been corrected. In addition on December 1, 1994, OPIC-ETU003 was identified in WR/J0 94-ANNR1 as being placed on restricted use hold until a correction to the upscale setpoint for ARM 2-D22-RM-K601-2-4, Condensate Filter Demineralizer Aisle was made. The inspector reviewed OPIC-ETU003 and determined that no revision had been made to correct the radwaste ARM setpoint.

After discussions with the licensee, three condition reports, 96-2373, 96-2379, and 96-2475 were issued to track procedural deficiencies in E&RC procedure OE&RC-0358, maintenance procedure OPIC-ETU003, and the failure to update a related instrument schedule. An UFSAR discrepancy was identified by the inspector, this item is discussed in Section E7.2.

c. Conclusion

The lack of proper followup by engineering with other departments for revision resulted in the closeout of EER94-168 before ensuring the items identified were properly updated. The review of the new fuel vault criticality monitor setpoints in preparation for an NRC observation of new fuel receipt and inspection revealed procedural change difficulties for the Maintenance, E&RC, and Document Control organizations. The failure to maintain a preset alarm point of not less than 5mR/hr was identified as a violation.

E7.2 Special UFSAR Review

A recent discovery of a licensee operating the facility in a manner contrary to the UFSAR description highlighted the need for a special

focused review that compares plant practices, procedures, and/or parameters to the UFSAR descriptions. While performing the inspections discussed in this report, the inspectors reviewed the applicable portions of the UFSAR that related to the areas inspected. The inspectors verified that the UFSAR wording was consistent with the observed plant practices, procedures, and/or parameters.

The inspector reviewed UFSAR Section 12, as part of the inspection activities described in E7.1, Criticality Monitor. This review revealed one inconsistency with UFSAR listed plant parameters. In UFSAR Table 12.3.4-3, the setpoint for the Unit 1 and 2 ARM located north of the fuel storage pool with channel nos. 1(2)-27 are not consistent with the current OPIC-ETU003 identified requirements. The inspector notified the licensee of this finding and they were reviewing the issue at the end of the report period. This item will be identified as part of URI 325(324/96-05-02.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Followup to Licensee Event (Unit 1)

a. Inspection Scope (83725)

The inspectors reviewed implementation of licensee controls for internal exposure to determine licensee compliance with regulatory requirements and licensee corrective actions to a contamination event that occurred in the Unit 1 Reactor Building on July 8, 1996.

b. Observations and Findings

Description of Event

On the morning of July 8, 1996, following installation of a ladder in the Unit 1 equipment pool on the 117-foot elevation, two workers were found to have facial radioactive contamination. Subsequent internal monitoring found measurable internal radioactive contamination of one worker to be 354 nanocuries (nCi) and 40 nCi for the other worker. The workers had been working to install a permanent ladder in the drained equipment pool to support an equipment pool cleanup. Efforts to determine the magnitude of the radioactive contamination spread and to contain the contamination began upon detection that the workers were contaminated. Licensee followup surveys determined contamination was spread by ventilation systems from the 117-foot elevation to the 80-foot elevation and down to the 50-foot elevation of the Reactor Building.

During the inspection, the inspectors independently reviewed licensee procedural requirements, Radiation Work Permits (RWPs), radiological surveys, the licensee's investigation/self assessment and immediate corrective actions to the event, and interviewed selected licensee

personnel to include technicians, supervisors, and managers. The following deficiencies were identified by the licensee:

- Inadequate supervisory oversight for the refueling floor work and poor communications during shift turnover between Health Physics (HPs) personnel for the ladder installation work occurred.
- Licensee procedure OE&RC-0230, Issue and Use of Radiation Work Permit, Revision 33, required workers understand the current Radiation Work Permit (RWP) revisions. The RWP being used by the workers only allowed work to be performed with contamination levels up to 25,000 disintegrations per minute (DPM). Radiological surveys prior to modification determined contamination levels of 160,000 DPM on the ladder. The workers were allowed by HP to modify the ladder on the refueling floor by cutting the ladder support legs. Workers did not understand RWP requirements, in that, the 25,000 DPM contamination limits for the RWP were allowed to be exceeded.
- Upon determining that the ladder could not be installed without entering the drained pool to secure the ladder against the wall, a worker requested permission from HP covering work on the refueling floor, to enter the pool to continue ladder installation. The worker was instructed by HP to don a set of paper coveralls over his full set of protective clothing prior to entering the pool. The RWP requirements addressed only work on the refueling floor. The RWP was not intended for pool entry and the requirements were not adequate for entering the equipment pool and an As Low As Reasonably Achievable (ALARA) plan was not implemented for entering the equipment pool when the work scope changed. Licensee procedure OE&RC-0230 also required that radiological survey data be used to determine applicable dress, dosimetry, respiratory protection and special survey requirements for RWPs. These actions were not performed when the work scope changed for the RWP used by the workers.
- Licensee procedure OE&RC-0045, ALARA/Radiation Control Pre-job Briefings, Revision 4, required a pre-job briefing for entering into a high radiation area or for performing abrasive work on highly contaminated areas. The event review determined that a pre-job briefing was not performed to cover the work scope for entering the pool which was a high radiation area and the performance of abrasive work on highly contaminated areas while using the hammer to install the ladder.
- Radioactive contamination surveys were not performed to assess the radiological hazards present on the side of the equipment pool prior to allowing the worker to enter the pool and use a hammer (an abrasive tool) on the side of the pool. Surveys performed after the event determined contamination levels on the side of the pool to be as high as 400 millirad/hour/areas of 100 centimeters squared. Also, licensee procedure OE&RC 0120, Routine/Special Airborne Radioactivity Survey, Revision 14, required samples for airborne

radioactivity to be performed whenever individuals are working in airborne or potentially airborne radioactivity and this action was not accomplished. The inspector informed the licensee that failure to perform adequate contamination and airborne surveys to evaluate the concentrations or quantities of radioactive materials as required by 10 CFR 20.1501 resulted in a failure to identify the potential radiological hazards that were present.

- Personnel exiting the posted contaminated area on the refueling floor unknowingly bypassed the first whole body frisker encountered on the 98-foot elevation of the reactor Building which risked further potential spread of contamination down to the whole body frisker located on the 20-foot elevation. Licensee procedure OE&RC-0110, Personnel Contamination and Decontamination, Revision 20, requires a whole body frisk at the first frisker encountered after exiting a contaminated area. The workers were unaware the whole body frisker on the 98-foot elevation had been in service for approximately 12 days prior to the contamination event.

The inspectors verified that immediate corrective actions had been accomplished to reclaim contaminated areas. The inspectors independently reviewed radiological survey documentation identifying the initial spread of contamination and the surveys for reclaiming the areas after decontamination. Also, the inspectors verified that other immediate corrective actions were taken to counsel workers and issue a plant wide memorandum which identified the event and stressed the importance of pre-job briefings and workers understanding of work assignments.

The licensee investigation and event assessment was reviewed and discussed with supervisory and management personnel. The inspectors also reviewed licensee self assessments for two months prior to the event. Based on this review, the inspectors determined the licensee conducted an aggressive root cause analysis of the event and determined the licensee had identified items of substance during recent assessments.

c. Conclusions

After reviewing the sequence of events and the actions taken by the licensee, the inspectors determined that there were two violations associated with this event. The first violation involved three examples of a violation of TS 6.8.1 which requires written procedures be established, implemented, and maintained covering the activities recommended in Appendix A of Regulatory Guide 1.33, November 1972. On July 8, 1996, the licensee failed to implement established procedures by: (1) not conducting pre-job briefings as required by licensee procedure OE&RC-0045, ALARA/Radiation Control Pre-job Briefings, Revision 4, (2) not following RWP requirements as required by licensee procedure OE&RC-0230, Issue and Use of Radiation Work Permit, Revision 33, and (3) not performing a whole body frisk at the first frisker encountered after exiting a contaminated area as required by licensee

procedure OE&RC-0110, Personnel Monitoring and Decontamination, Revision 20. The failure to implement established radiological control procedures as required by TSs is a violation of regulatory requirements and is identified as VIO 50-325(324)/96-13-06.

The second violation involved a violation of 10 CFR 20.1501(a) which requires a licensee to make surveys that are reasonable under the circumstances to evaluate concentrations or quantities of radioactive material; and the potential radiological hazards that could be present. On July 8, 1996 during performance of work in the Unit 1 refueling floor equipment pool, the licensee failed to perform adequate surveys to evaluate the potential radiological hazards that could be present from unknown concentrations or quantities of airborne radioactivity that existed in areas of the Unit 1 equipment pool. The failure to perform adequate surveys to evaluate the potential radiological hazards that could be present is a violation of regulatory requirements (VIO 50-325(324)/96-13-07).

Based on independent review, the inspectors determined that the licensee's immediate corrective actions to control the contamination and to inform the plant workers of the event were adequate.

R1.2 Tour of Unit 1 and Other Radiologically Protected Areas.

a. Inspection Scope (83725)

The inspectors toured work areas to evaluate radiological controls and conditions of facilities and equipment for controlling internal exposures.

b. Observations and Findings

The inspectors toured Reactor Building facilities, Turbine Building, and the Radioactive Waste Facility. At the time of the inspection, radiological housekeeping was observed to be good. Radiologically controlled areas observed were appropriately posted and radioactive material was appropriately labeled. Continuous air monitors observed in use were functioning properly and were currently calibrated.

c. Conclusions

Radiological facility conditions and housekeeping were observed to be good.

R1.3 Control Room Access

a. Inspection Scope (71750)

During routine inspection activities, the inspector observed personnel monitoring from the radiation control area (RCA).

b. Observations and Findings

On August 14, 1996, while performing routine inspection activities the inspector observed a licensee employee escorting three visiting personnel as they entered the Unit 2 access for the control room at the 49' elevation. Upon entering the personnel monitor (PMW-2), the licensee employee monitored clean. However the three visitors were unsuccessful on two attempts to clear the personnel monitor. The inspector observed the visitors perform a five-point frisk and then proceed onto the 49' elevation.

The inspector observed the licensee posting on the personnel monitor. The instructions direct upon alarming to note the body location, remonitor at another frisker, cover hands and feet if found to be contaminated, report to personnel decontamination and contact health physics for assistance. Upon questioning by the inspector, the licensee employee indicated that the visitors had hand-frisked at below 100 counts above background and was therefore permitted to proceed. During discussion with licensee management, it was noted that they were revising the monitoring policy due to turbine building off-gas problems.

During the Unit 2 outage, the practice of performing a five-point frisk was instituted for control room access for the duration of the outage. This was a temporary practice and not part of ordinary station requirements. Management expectation, as communicated during general employee training and postings in the area would be upon alarming the second time to note the area contaminated, cover hands and feet if necessary, and proceed to personnel decontamination for HP assistance. A similar issue regarding personnel monitoring was addressed previously by the NRC staff in IR 325(324)/96-04.

c. Conclusion

The repetitive nature of control room access challenges, as well as tolerance of nonconforming access practices by E&RC management was seen as a weakness.

R8 Miscellaneous Radiation Protection and Chemistry Issues

R8.1 Interim Low-Level Radwaste Storage Facility

a. Inspection Scope (71750)

The inspector reviewed the licensee's plans for an interim low-level radwaste storage facility (ILLRSF). This review included observation of a Plant Nuclear Safety Committee (PNSC) meeting discussing the proposed 10 CFR 50.59 evaluation, and a tour of the site location.

b. Observations and Findings

The licensee has constructed an ILLRSF because the State of South Carolina has refused to accept waste from North Carolina. The State of

North Carolina has not built a regional low-level waste disposal site. The inspector toured the location of the facility. The facility was located on the owner controlled property near the abandoned cooling tower structure. The location consisted of a concrete pad surrounded by a chain-link fence. Sixteen empty concrete vaults were on the concrete pad for future use.

The 10 CFR 50.59 evaluation was presented to PNSC on August 22, 1996. The evaluation concluded that the storage of solid waste posed no unnecessary risk to the general public. The material will not be in a dispersible form and the dose rates will be sufficiently low such that the dose to members of the public inside the owner controlled area would be within regulatory limitations. Section 11 of the FSAR would need to be revised to include a description of the ILLRSF.

The evaluation was good and included two 33 references. Two references listed in the 10 CFR 50.59 evaluation discussed NRC guidance concerning interim storage. These were NRC IN 90-09, Extended Interim Storage of Low-Level Radioactive Waste by Fuel Cycle and Material Licensees and NRC SECY-94-198, Review of Existing Guidance Concerning the Extended Storage of Low-Level Radioactive Waste. Additionally, the inspector noted that the ILLRSF did not involve land disposal or storage of high-level waste such as spent fuel.

c. Conclusions

The inspector concluded that the licensee has constructed an ILLRSF due to the unavailability of a low-level waste storage facility. The facility was reviewed under 10 CFR 50.59 evaluation considering applicable NRC guidance concerning the issues and was adequate.

P1 **Conduct of EP Activities**

P1.1 Hurricane Fran

a. Inspection Scope (71750)

The inspectors reviewed the licensee's actions in response to Hurricane Fran. This included site preparation, emergency response, and recovery.

b. Observations and Findings

On September 4, 1996, at 5:35 p.m. a Notification of Unusual Event (NOUE) was declared due to the issuance of a hurricane warning for the site. Both units were shutdown on September 5, 1996, in preparation for Hurricane Fran. Plant procedure OAI-68, Brunswick Nuclear Plant Response to Severe Weather Warnings, requires that the units be in cold shutdown two hours prior to arrival of hurricane force winds on site. The licensee's emergency response facilities were activated at 1:00 p.m. on September 5, 1996. The NRC likewise manned each response center with the resident inspectors and two additional inspectors dispatched to the site.

The inspectors toured the protected area prior to the lock-down and observed that the licensee had taken adequate precautions. The inspectors noted that trailers had been tied down and miscellaneous equipment had been removed or secured. They identified that the South Diesel Building flood door had not been latched and the Service Water Building flood door had not been closed. In addition, they noted several maintenance stanchions located by the service water intake structure. Prior to the tour the licensee had informed the inspectors that all the stanchions had been removed. The inspectors informed the licensee of their observations. The licensee indicated that the identified deficiencies would be corrected.

Unit 1 was in cold shutdown at 2:45 p.m. on September 5, 1996. Unit 2 was in cold shutdown at 4:00 p.m. on September 5, 1996. The hurricane was originally predicted to make landfall at 2:00 a.m. on September 6, 1996, which coincided with high tide. The hurricane increased in speed from 12 mph to 16 mph. The actual arrival was on September 5, 1996. Hurricane force winds of 105 mph with wind gusts to 125 mph were experienced onsite from 4:45 p.m. until 5:15 a.m. A lull occurred around 11:30 p.m. as part of the storm's eye passed near the site. As soon as the winds subsided the inspectors toured the plant site. The O&M, Unit 1 and Unit 2 Reactor buildings sustained roof damage. The O&M, TAC, and WCC buildings lost pieces of siding. The inspectors noted that the licensee had not removed the stanchions which the inspectors had previously identified. Offsite power was maintained throughout the storm as well as normal communications. After the National Weather Service rescinded the hurricane watch, the NOUE was terminated at 8:45 a.m. on September 6, 1996.

During the storm the licensee experienced problems with DC grounds on the battery bus. The licensee suspended security and fire watch rounds due to the severe weather. This was further reviewed in security section S1.1. Most of the evacuation sirens in New Hanover and Brunswick Counties were lost due to loss of power to the siren.

The Technical Support Center (TSC)/Emergency Operating Facility (EOF) emergency diesel generator (EDG) was placed in service at 3:00 p.m. on September 5, 1996, when the Southport feeder was taken off the line. The TSC/EOF EDG tripped at 3:31 p.m. and the licensee was never able to load this EDG during the event. The licensee was able to reenergize the Southport feeder which was able to supply reliable power. The licensee made provisions to provide emergency power in the event the Southport feeder was lost. The inspectors reviewed the plans for emergency power. The TSC/EOF EDG had been successfully tested and loaded on September 3, 1996. Subsequent troubleshooting revealed that the EDG output circuit breaker had failed. The licensee had previously made modifications to the Southport feeder to improve its reliability as a result of lessons learned from the March 1993, Loss of Offsite Power event.

The data from the meteorological tower became unreliable around 7:00 p.m. on September 5, 1996, and the site had to rely on wind data from their offsite meteorological consultants. The licensee was unable to

obtain current wind information. Their system provided wind speed data which was averaged over 15 minutes.

Following the hurricane the licensee established a Recovery Team. The Unit 1 readiness for restart was reviewed by the PNSC that recommended restart on September 9, 1996. The Unit 2 readiness for restart was reviewed by the PNSC on September 10, 1996, which recommended restart on September 11, 1996.

The inspector attended the Unit 2 restart PNSC meeting and reviewed the items discussed. Independent walkdowns of the units were also conducted by the inspectors on September 9, 10, and 11, 1996. Only minor items were identified and discussed with licensee management. On September 7 and 8, 1996, meetings were held between FEMA, the licensee, and Brunswick and New Hanover counties. The licensee management presented their self-assessment to FEMA focusing on the return to service of all the sirens. FEMA completed their review of the emergency planning zone on September 8, 1996. The units were restarted and synchronized to the grid on September 10 and 13, 1996, without any adverse impact from the storm.

c. Conclusion

The inspectors concluded that the licensee's readiness for the storm's arrival was prompt and thorough. The licensee executed their emergency plan without any significant problems. The recovery team conducted a good assessment of the site's readiness to restart.

P4 **Staff Knowledge and Performance in EP**

P4.1 Operator Offsite Dose Calculation

a. Inspection Scope (71750)

As a result of a question with offsite dose calculation prior to activation of the EOF and the TSC at another facility, the inspector reviewed the licensee's ability to assess offsite dose calculation prior to EOF and TSC activation.

b. Observations and Findings

The inspector discussed calculation of offsite dose with the licensee and determined that procedures were in place for onshift calculation of offsite dose. The inspector reviewed senior reactor operator training documents and an active standing instruction that showed satisfactory dissemination of requirements to onshift staff. This was demonstrated upon inspector questioning of licensed operators on different shifts concerning offsite dose calculation. The inspector found that the operators were aware of the proper procedures, and the instrumentation required to obtain needed data to perform the calculation. The inspector observed a demonstration of the computer program used in the

control room and the EOF to determine offsite dose. No concerns were identified.

c. Conclusion

The licensee has the capability to compute offsite dose by the onshift operators. The operators questioned were knowledgeable about procedures needed and the related instrumentation required to determine the offsite dose.

S1 Conduct of Security and Safeguards Activities

S1.1 Hurricane Fran

a. Inspection Scope (71750)

The inspectors reviewed the licensee's security actions taken in response to Hurricane Fran. These actions included the suspension of outside security rounds and firewatches.

b. Observations and Findings

On September 4, 1996, at 5:35 pm, a hurricane warning was issued for the area surrounding the Brunswick plant. On September 5, 1996, at 1:00 pm, the licensee activated its emergency response facilities in preparation for the arrival of hurricane conditions on site. At 5:21 pm, on September 5, 1996, the licensee made a one hour non-emergency notification to the NRC in accordance 10 CFR 50.72(b)(1), that due to the severe weather conditions the site has suspended periodic 4 hour security rounds of the protected area fence line and external vital areas. Additionally in the notification, the licensee also suspended roving fire watches until the severe weather subsides. The notification stated that these actions were taken in accordance with the provisions of 10 CFR 50.54(x) and (y).

At 8:20 pm, the licensee made a 10 CFR 50.72(a)(1)(i) notification to report that an Unusual Event had been declared based on security degradations caused by Hurricane Fran. Security camera deficiencies were encountered as a result of Hurricane Fran. Appropriate compensatory actions were taken and full security measures were re-established by 4:51 am, on September 6, 1996.

During the time of the suspended tours, no challenges to vital areas occurred, and security cameras were in operation. Additionally, both fire detection and automatic suppression systems were operable during this time period in all areas of the buildings.

c. Conclusions

The inspectors reviewed the licensee's actions taken in accordance with 10 CFR 50.54(x) and (y) to ensure the safety of the members of the security force during Hurricane Fran. The inspector concludes that the

actions taken were prudent and reasonable given the hurricane conditions with winds in excess of 115 mph present on site during the storm. The inspectors concluded that the deviation from the TS requirement was reviewed, discussed and properly dispositioned in accordance with the requirements of 10 CFR 50.54(x) and (y). The inspectors observed that as soon as weather conditions permitted the licensee quickly resumed the suspended activities and verified that no problems occurred during the time of the suspended tours. The inspectors concluded that the licensee adequately implemented the requirements of the security plan and took appropriate actions given the conditions on site to ensure the safety of the security force members.

V. Management Meetings

XI Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on September 20, 1996. Post inspection briefings were conducted on September 13, 1996 and September 13, 1996. The licensee acknowledged the findings presented. The licensee did not identify any materials used during the inspection as proprietary information.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

G. Barnes, Manager Training
A. Brittain, Manager Security
W. Campbell, Vice President, Brunswick Steam Electric Plant
R. Foy, Superintendent, Radiation Protection
N. Gannon, Manager Maintenance
J. Gawron, Manager Nuclear Assessment
D. Hicks, Manager Regulatory Affairs
W. Levis, Director Site Operations
R. Lopriore, General Plant Manager
J. Lyash, Brunswick Engineering Support Section
K. McCall, Supervisor, Operator Initial Training
C. Pardee, Manager Operations
R. Schlichter, Manager Environmental and Radiation Control
M. Turkal, Supervisor Licensing and Regulatory Programs
H. Wall, Training Supervisor

Other licensee employees or contractors included office, operation, maintenance, chemistry, radiation, and corporate personnel.

R. Aiello
E. Brown
P. Byron
D. Forbes
M. Janus
C. Patterson

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
 IP 40500: Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
 IP 41500: Training and Qualification Effectiveness
 IP 42700: Plant Procedures
 IP 61726: Surveillance Observations
 IP 62707: Maintenance Observations
 IP 71001: Licensed Operator Requalification Program Evaluation
 IP 71707: Plant Operations
 IP 71750: Plant Support Activities
 IP 83725: Occupational Exposure During Extended Outages
 IP 84750: Radioactive Waste Treatment and Effluent and Environmental
 IP 92901: Followup - Operations

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-325(324)/96-13-01	VIO	Equipment Clearance Error (paragraph 04.1)
50-325(324)/96-13-02	VIO	Failure to Complete the LSRO Training Program Prior to Taking the LSRO Audit Examination (paragraph 05.1)
50-325(324)/96-13-03	NCV	Failure to Provide Complete and Accurate Information as Required by 10 CFR 50.9, Completeness and Accuracy of Information (paragraph 05.1)
50-325(324)/96-13-04	IFI	AOR Makeup For Licensed Operators (paragraph 05.1)
50-324/96-13-05	VIO	Failure to Correctly Update ARM Alarm Setpoint (paragraph E7.1)
50-325(324)/96-13-06	VIO	Failure to Follow Licensee Radiological Control Procedures Required by TS 6.8.1 (paragraph R1.1)
50-325(324)/96-13-07	VIO	Failure to Perform Surveys Commensurate with the Hazards Present (paragraph R1.1)

Closed

50-325(324)/96-10-01	URI	Determine if Auxiliary Operators Have Been Adequately Trained per TI-104, Auxiliary Operator OJT Checklist (paragraph 08.1)
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Discussed

50-325(324)/96-08-01	NCV	Failure to Properly Implement Drywell Venting Procedure (paragraph 04.2)
50-325(324)/96-05-02	URI	FSAR Discrepancies (paragraph E7.2)