



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

Report Nos.: 50-325/44 and 50-324/44

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

Docket Nos.: 50-325 and 50-324 License Nos.: DPR-71 and DPR-62

Facility Name: Brunswick 1 and 2

Inspection Conducted: December 1 - 31, 1992

Lead Inspector:

R. L. Prevatte
R. L. Prevatte, Senior Resident Inspector

1/28/93
Date Signed

Other Inspectors: D. J. Nelson, Resident Inspector
P. M. Byron, Resident Inspector

Approved By:

H. Christensen
for H. Christensen, Chief
Reactor Projects Section 1A
Division of Reactor Projects

1/28/93
Date Signed

SUMMARY

Scope:

This routine safety inspection by the resident inspector involved the areas of maintenance observation, surveillance observation, operational safety verification, onsite review committee, onsite followup of events, and action on previous inspection findings.

Results:

One violation with three examples was identified for failure to follow procedures with regard to manual overtorquing two RHR system valves, damaging one valve and potentially damaging the other (paragraph 6), and failure to maintain adequate log keeping and equipment clearances (paragraph 4).

Operator log keeping was inconsistent (paragraph 4). An observed lack of sensitivity to out of position circuit breakers which have potential personnel safety significance (paragraph 4) and inadequacies in the new Post Maintenance Testing Program procedure, PLP-20 (paragraph 6) are all indicators of lack of attention to detail.

The corrective maintenance backlog increased about 10 percent from the previous inspection period. Some of this increase can be attributed to the area walkdowns (paragraph 5).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *K. Ahern, Manager - Operations, Unit 2
- *R. Anderson, Vice-President - Brunswick Nuclear Project
- *G. Barnes, Manager - Operations, Unit 2
- M. Bradley, Manager - Brunswick Assessment Project
- *M. Brown - Interim Plant Manager, Unit 2
- S. Callis - On-Site Licensing Engineer
- S. Floyd, Manager - Regulatory Compliance
- *R. Godley, Supervisor - Regulatory Compliance
- R. Helme, Manager - Technical Support
- *M. Jackson, Manager - Maintenance, Unit 2
- M. Jones, Manager - Training
- *J. Leininger, Manager - Nuclear Engineering Department (Onsite)
- P. Leslie, Manager - Security
- *D. Moore, Manager - Maintenance, Unit 1
- *R. Morgan - Interim Plant Manager, Unit 1 and Acting Vice-President for Brunswick Nuclear Project
- R. Poulk, Manager - License Training
- *C. Robertson, Manager - Environmental & Radiological Control
- J. Simon, Manager - Operations Unit 1
- R. Tart, Manager - Radwaste/Fire Protection
- *J. Titrington, Manager - Operations, Unit 1
- *G. Warriner, Manager - Control and Administration
- *E. Willett, Manager - Outage Management and Modifications (OM&M)

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

*Attended the exit interview.

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

2. Maintenance Observation (62703)

The inspectors observed maintenance activities, interviewed personnel, and reviewed records to verify that work was conducted in accordance with approved procedures, Technical Specifications, and applicable industry codes and standards. The inspectors also verified that: redundant components were operable; administrative controls were followed; tagouts were adequate; personnel were qualified; correct replacement parts were used; radiological controls were proper; fire protection was adequate; quality control hold points were adequate and observed; adequate post-maintenance testing was performed; and independent verification requirements were implemented. The inspectors independently verified that selected equipment was properly returned to service.

Outstanding work requests were reviewed to ensure that the licensee gave priority to safety-related maintenance. The inspectors observed/reviewed portions of the following maintenance activities:

PM 91-064	Unit 1 Refueling Platform Upgrade
92-AMLK4	Repair of Corroded U-2 Ductwork
92-BGNB1	Repair of Unit 2 - F028D, Outboard MSIV
PM 90-064	Service Water Inspections - Unit 2
GE Contract 2A LP	Turbine Wheel Inspections
PM 92-071	Instrument Rack Upgrade/Replacement (Unit 2)
PM 92-070	Instrument Rack Upgrade/Replacement (Unit 1)

No violations or deviations were identified.

3. Surveillance Observation (61726)

The inspectors observed surveillance testing required by Technical Specifications. Through observation, interviews, and record review the inspectors verified that: tests conformed to Technical Specification requirements; administrative controls were followed; personnel were qualified; instrumentation was calibrated; and data was accurate and complete. The inspectors independently verified selected test results and proper return to service of equipment.

The inspectors witnessed/reviewed portions of the following test activities:

Calibration of instruments on Instrument Racks:

1-H21-P018	RHR A Instrument Rack
2-H21-P015	Main Steam Instrument Rack
2-H21-P021	RHR B Instrument Rack
2-H21-P025	Main Steam Instrument Rack

The inspector observed that the work was done with the procedures at the job site and there were no concerns identified. Violations and deviations were not identified.

4. Operational Safety Verification (71707)

The inspectors verified that Unit 1 and Unit 2 were maintained in compliance with Technical Specifications and other regulatory requirements by direct observations of activities, facility tours, discussions with personnel, reviewing of records and independent verification of safety system status.

The inspectors verified that control room manning requirements of 10 CFR 50.54 and the Technical Specifications were met. Control operator, shift supervisor, clearance, STA, daily and standing instructions and jumper/bypass logs were reviewed to obtain information concerning operating trends and out of service safety systems to ensure that there were no conflicts with Technical Specification Limiting Conditions for

Operations. Direct observations of control room panels and instrumentation and recorded traces important to safety were conducted to verify operability and that operating parameters were within Technical Specification limits. The inspectors observed shift turnovers to verify that system status continuity was maintained. The inspectors also verified the status of selected control room annunciators.

The inspectors verified the system alignment and operability of equipment used for the normal and backup means for shutdown cooling on each unit. They additionally verified that there was no leakage of major components; that proper lubrication and cooling water was available; and conditions did not exist which could prevent fulfillment of each system's functional requirements. Instrumentation essential to system actuation or performance was verified to be operable by observing on-scale indication and proper instrument valve lineup.

The inspectors verified that the licensee's HP policies and procedures were followed. This included observation of HP practices and a review of area surveys, radiation work permits, posting and instrument calibration.

The inspectors verified by general observations that: the security organization was properly manned and security personnel were capable of performing their assigned functions; persons and packages were checked prior to entry into the PA; vehicles were properly authorized, searched and escorted within the PA; persons within the PA displayed photo identification badges; personnel in vital areas were authorized; effective compensatory measures were employed when required; and security's response to threats or alarms was adequate. The inspectors also observed adequate plant housekeeping controls, verified position of certain containment isolation valves, checked clearances and verified the operability of onsite and offsite emergency power sources.

Repeated NRC observations concerning the inadequacies of operator log keeping have been documented in previous inspection reports. The inspector has observed some improvement; however, the improvement lacks consistency. The inspector has observed that the starting and stopping of major pieces of equipment was not always recorded in the unit log as required by Section 3.2.4.3 of Operating Instruction, OI-01, "Operating Principles and Philosophy," Revision 048. OI-01, requires that a detailed explanation shall be provided in the shift supervisor's log for major events such as major plant evolutions. The quality of log keeping varies by individual. Inconsistent entries are frequently observed as demonstrated by an entry which denotes the review of the results of a performance test but neither the test nor the operation of the equipment was documented. While reviewing operator logs, the inspector noted that on December 14, 1992, an entry had been made at 1440 in the Unit 1 or shift supervisor's (SS) log which stated "Completed review of PT12.2B, DG No. 2 Monthly Load Test. PT was SAT." There were no entries to indicate that DG No. 2 had been operated or that PT12.2B had been performed. The missing entries were in the control operator's log. An operations manager, when queried, thought that the entries were

acceptable yet the missing entries are required by 01-01. The failure to maintain logs in accordance with the 01-01 is a violation (325/92-44-01). These deficiencies would make it difficult to recreate events. It should be noted that only the unit or SS log is sent to the vault as a permanent record.

Another example of poor log keeping practices was demonstrated by a Unit 1 SCO not signing into the unit log until seven hours into a twelve hour shift and the licensee did not consider this to be a deficiency. The inspector discussed his concerns with the licensee and noted a significant improvement which proved to be short lived. Poor log keeping practices and management tolerance are indicative of inattention to detail.

The licensee had three occurrences of mispositioned circuit breakers during the inspection period. On December 8, 1992, the breaker for recirculation system valve 2-B32-F023B was found "on" with a clearance (2-92-02902) tag hanging on it for "off/removed." On December 22, two containment atmospheric control system control circuit breakers 2-32AB-5 and 2-32AB-6, located in panel 32AB, were found in the on position while under clearance 2-92-2887. The clearance required the breakers to be in the off position. Both breakers were last verified in the correct (off) position on November 25, 1992. Additionally, on December 23, the breaker for RCIC system valve 1-E51-F066 was found "on" while displaying a placard stating that the breaker was to be left "off" pending testing under Plant Modification, PM91-009. Administrative Instruction, AI-58, Equipment Clearance Procedure, requires that equipment be maintained in a safe operating condition.

These are not isolated cases as there were three mispositioned circuit breaker events in September involving eight circuit breakers. Only the most recent breaker mispositioning event was discussed at the daily outage meeting and that discussion was held following questioning by the inspector. The inspector noted that the event was described in the CO's log but not described in the unit log. An ACR has not been written for the latest breaker event. The inspector is concerned that events which are potentially safety significant were not being elevated for increased attention and visibility. The inspector has discussed his concerns with various members of the licensee's staff and found that they did not feel the issue was significant. The licensee stated that the problem was being investigated; however, there was no urgency as clearance errors were considered to be statistically insignificant. Additionally, responses by some licensee personnel regarding mispositioned circuit breakers indicated to the inspector that the licensee was not sensitive to certain potentially safety significant events. The failure to maintain equipment in the required clearance position is a violation of AI-58 and is the second example of violation (324/92-44-01).

The inspector discussed his concerns with senior site management. The immediate response was to have operations review all logs daily for potentially significant events and have them discussed at the morning

outage meetings. The licensee also held discussions with section and unit managers to make them more sensitive to events which could have potentially significant consequences. The inspector has observed heightened sensitivity and increased visibility of events which have potential safety significance to individuals.

One violation with two examples was identified.

5. Outage Work Activities (71707)(62703)(3/828)

Diesel Generator Number 1

The inspector observed selected maintenance activities on DG No. 1 and noted that the licensee continued to perform a thorough inspection and identify problems with DG No. 1. The maintenance activities observed were performed in accordance with the required procedures. While the engine was being warmed prior to initial operation, the coupling on the motor driven jacket water pump failed due to component misalignment. All motor-driven auxiliaries were checked for alignment and realigned as required. DG No. 1 was started on December 17 for break-in runs and during these runs, torsionographs were obtained to determine if torsional vibration existed in the crankshaft. Similar torsion data was obtained from DG No. 3 for comparative purposes. During one of the break-in runs the licensee heard noises emanating from the engine and immediately shut down DG No. 1. Investigation revealed that the new flex drive gear was damaged on both tooth surfaces and metal displacement was observed. Further investigation revealed the flexdrive gear backlash had been set in accordance with the vendor technical manual (10-15 mils). However, the flexdrive gear backlash for DG No. 3 was greater. It was measured to be 38 mils, while that of DG No. 1 was 14 mils. Both measurements were taken with the crankshaft at the bottom of the journal. The licensee calculated that point on the journal to which the DG No. 3 crankshaft would ride when rotating. It then calculated that the backlash on the flexdrive gear would be within the specified tolerance. It also calculated that there would be zero backlash in DG No. 1 with the engine operating. It concluded, as DG No. 3 has had no engine driven jacket water pump problems, that the specified 10-15 mil tolerance is with the crankshaft in its operating position. The licensee also concluded that the damage to the DG No. 1 flexdrive gear was caused by an inadequately adjusted backlash in that it did not take into account the differences in crankshaft position in the journals. The flexdrive gear was replaced and the engine driven jacket water pump was repositioned to provide proper flex drive gear backlash.

On December 27, crankshaft deflection readings were taken after a six hour break-in run and determined to be out-of-tolerance. Adjustment was made by shimmying the generator pedestal bearing. Following another six hour run, new crankshaft deflection readings were taken and found to be within the technical manual specifications.

Engineering Dynamics, Inc. (EDI) of San Antonio, Texas, obtained the torsionographs which were sent to Failure Analysis Associates (FaAA) of

Menlo Park, California, for analysis. FaAA provided direction to EDI as to the type of data it needed for the analysis of the DG No. 1 crankshaft. FaAA concluded that, based on its stress analysis, review of torsionographs, its eddy-current inspection of the crankshaft and an evaluation of the Golten crankshaft straightening process, the crankshaft is adequate for its intended service. FaAA recommended to the licensee that the 13 day endurance run was not required to demonstrate the adequacy of the crankshaft.

On December 29, 1992, the licensee presented its arguments for not performing the 13 day endurance run on DG No. 1 in a conference call to the NRC with participation by Region II and NRR personnel in addition to personnel from FaAA. The NRC requested additional information which the licensee agreed to provide. The licensee has not yet requested a relaxation of the endurance run contained in the Confirmatory Action Letter. No action will be taken until the licensee has evaluated FaAA's final report.

Maintenance WR/JO Status (Corrective Maintenance) - Near Critical Path

The current status of the backlog is as follows:

	Pre 4/21/92	Post 4/21	Completed Since 4/21	Backlog
Unit 1				
Outage	783	1245	1026	1003
Non-outage	993	3723	2570	1846
				Total 2849
				*(+254)
Unit 2				
Outage	673	1992	1535	1130
Non-Outage	1582	5604	4844	2342
				Total 3472
				*(+308)

*Difference from backlog listed in Inspection Report 325,324/92-37.

The ongoing hot and cold side walkdowns plus the control room walkdown continue to add items to the backlog. The corrective maintenance backlog increased 9.77% from the previous month. The identification rate has exceeded the completion rate by approximately 20 WR/JOs per day.

The licensee's minor maintenance program continues to be very successful. Approximately two-thirds of the items identified during the control room overhead walkdowns were repaired utilizing this process. This reduced the number of WR/JOs which would have been written prior to the implementation of this program.

On December 1, 1992, the licensee issued Revision 1 to Plant Notice, IN-30, "Integrated Recovery Methodology." This procedure allows for

subsequent reviews of WR/JO backlog items for deletion or inclusion into the outage. The procedure provides for the methodology to review backlog and emergent items. This procedure is the governing document for the backlog prioritization and outage scope control.

Item B4 Unit 2 - Main Generator Exciter Coupling Replacement

The original coupling provided by the turbine generator vendor, General Electric, was manufactured by Falk (Model 210-H). The licensee experienced elevated exciter vibration levels as did other utilities which had this coupling. General Electric recommended replacing the Falk coupling with Kop-Flex, Model 704, which would reduce exciter vibration. The inspector reviewed the direct replacement evaluation, DR No. 92-0052, dated February 27, 1992, and considered it to be adequate. WR/JO 92-ACRF1, which the inspector reviewed, was issued to replace the coupling. During the coupling replacement, the licensee detected loose sole plates while sounding the sole plates. The licensee determined on May 9, that the sole plates were shimmed in place, there were no support bolts at each end, and the sole plates were not adequately grouted. WR/JO 92-ACRF4 was written to regROUT the sole plates. The inspector observed portions of the grouting and coupling replacement and observed that the craft were proceeding cautiously and that procedures were at the job site. The work associated with the coupling replacement was completed on May 21, 1992. Post maintenance testing, which consists of vibration readings, will be accomplished when the unit is back on line. The completion of the physical work closes out this item.

Item B5 Unit 2 - Partial Arc Modifications

Item B5 Unit 2 - CV and EHC Accumulator Refurbishment

The turbine bucket replacement and modifications for partial arc admission were completed during the Unit 2 refueling outage in September to December 1991. This work was discussed in detail in Inspection Reports 325,324/91-39 and 325,324/92-01. After startup in late December 1991, the system would not operate at full power without oscillations on partial arc admission. This resulted in operating the unit at less than 80% power until the unit was shutdown on April 21, 1992. During the current outage, the limit switches and control bearings for the control valves have been replaced. The EHC accumulators were removed and rebuilt with new seals. After investigation, the turbine vendor determined that the incorrect curves had been used to set control valve operation. The EHC system was electronically realigned using the corrected curves. This system will undergo further testing and realignment during plant restart after steam is available for turbine operation.

Instrument Racks

The structural segments of the instrument rack modification/rebuild program are being accomplished under plant modifications PM92-070 and PM92-071 for Units 1 and 2, respectively. The balance of the work is being accomplished under the WR/JO process. Separate job orders have

been written for each task. This has resulted in the generation of a large number of WR/JOs. There have been 230 WR/JOs written for Unit 1 and 351 WR/JOs written for Unit 2 Instrument Racks. Eighty-nine WR/JOs have been written for the non-structural work for rack 2-H21-P014. The inspector has witnessed all phases of this program but not all WR/JOs. The observations have been limited to work practices. The inspector has observed that appropriate instructions have been at the job site, workers were cautious and fire watches were on location when required.

Violations and deviations were not identified.

6. Maintenance Process Improvements

Post Maintenance Testing Program

Plant Procedure, PLP-20, Post Maintenance Testing Program, was issued on December 8, 1992. The purpose of this procedure is to provide post maintenance testing guidelines and controls and establish the overall post maintenance testing process.

The inspector reviewed the new program procedure for general content and with regard to past post maintenance testing issues, including violations 325,324/92-01-01 (EA92-024), 325,324/91-02-02 and 325/92-04-02 and Deviation 325,324/92-04-01.

The inspector concluded that the new program procedure should improve the licensee's post maintenance testing program overall, but several shortcomings were apparent which indicate that several site specific events were not incorporated:

- The test matrix for pumps, valves and miscellaneous equipment appropriately indicate that external leak tests are required but no guidelines are included in the procedure for determining proper test pressure. This was a topic of Violation 325,324/91-02-02.
- The test guidelines for cranes do not include testing of fail-safe features and both electric and mechanical brakes. These topics were revealed as a result of a dropped fuel bundle on January 2, 1991 (Inspection Report 325,324/91-01 and LER 1-91-001.)
- The test guidelines for air operated valves include tests for maintenance on the air/nitrogen pressure source, but do not consider maintenance on vent paths. Restricted vent paths could disable these components.
- The test guidelines for manual valves do not include guidelines for remote position indication checks. Some manual valves have remote position indication.

- Requirements for testing valve interlocks are appropriately included (Inspection Report 325,324/92-04) but no testing methodology is provided and no list or easily managed information about installed interlocks is available.
- The test guidelines for emergency diesel generators state that no post maintenance testing is required for painting, cleaning or other cosmetic maintenance. This was an issue in the failure of DG No. 2 to start on demand on January 6, 1992 (Inspection Report 325,324/92-01 and EA 92-024).

The inspector concluded, based on these observations, that the licensee's review of PLP-20 concentrated on administration of the program instead of technical content. Administratively, the program appears viable, but assessment of the program in use will be required to determine its overall effectiveness.

Procedure Issues

Inspection Report 325,324/92-04 indicated that inadequate procedures and/or failure to follow procedures were a major contributor to work control problems. Licensee efforts to improve procedure work ethic have included changes to MMM-001, Maintenance: Conduct of Operations, that better define the boundary between skill-of-the-craft and procedure need, the level of detail allowed on WR/JOs and steps to be taken when procedure errors are detected in the field. No firm conclusions can be made on the overall effectiveness of the improvement efforts, but one recent event confirms that continued management attention is needed:

In preparation for RHR system decontamination, a need to manually torque the Unit 1, E11-F006 B and D valves (pump suction for shutdown cooling) was identified; accordingly, WR/JOs 92-BGRE1 and 92-BGRF1 were initiated, respectively. These valves are motor operated 28 inch gate valves with SMB-0 Limitorque operators equipped with manual override actuators. A mechanical maintenance planner with Technical Support assistance selected the incorrect torque values from EDBS choosing the Limitorque operator torque switch setting of 450 ft.-lbs. instead of the indicated handwheel torque values of approximately 60 to 70 ft.-lbs. This was caused by confusion over the EDBS information in a telephone conversation between the planner and a Technical Support Component Engineer. The high value of 450 ft.-lbs. was discussed by the maintenance personnel involved. However, the WR/JO was implemented without questioning the maintenance planner and this resulted in failure of the actuator on the first F006 valve on December 2, 1992. Recognizing the failure, the mechanics reduced the torque setting for the second valve to 200 ft.-lbs., and completed torquing that valve without obvious failure, but resulting in potential internal actuator or valve damage. Subsequently, ACR 92-953 was initiated by Maintenance on December 4, 1992. The following problems were revealed by this event:

- Following selection of the wrong torque value, the mechanics performing the work failed to question the planner on the excessively high torque requirement. Application of this torque required use of a large torque wrench on a handwheel of twelve inches in diameter.
- After obvious failure of the first valve's actuator, the mechanic proceeded to the second valve, choosing a different maximum torque, without obtaining additional guidance from Planning or Maintenance Supervision nor documenting the failure.

There was no direct safety impact as a result of this event, but significant maintenance errors occurred indicating that the maintenance organization procedure work ethic is not yet fully adequate.

The inspector concluded that the MMM-001 guidelines for use of a WR/JO instead of a formal procedure for this application were correctly applied. The guidelines does not require a review of the planning product prior to the WR/JO being released for performance. The action of the maintenance personnel indicated a lack of knowledge (skill-of-the-craft) on torquing valves. By design, valve handwheel diameters indicate the relative amount of force that should be normally applied to avoid valve and actuator damage. Motor operated valve actuators normally have relatively small handwheel sizes appropriate for the large mechanical advantage of the motor operated drive train.

The inspector reviewed training material included in Lesson Plan MNO37G, Motorized Valve Operators, to assess what level of skill-of-the-craft could reasonably be expected. If implemented as written, this training provides thorough instruction and hands-on experience on motor operated valves including principles of operation, disassembly, reassembly and routine maintenance and adjustment. Also included is specific instruction to not use handwheel cheaters (levers that effectively increase handwheel diameter). This training attribute is also included in the Lesson Plan review questions. Repeated instruction is provided on the potential adverse effects of manual torquing. The inspector concluded that ample training is provided to reasonably expect qualified maintenance personnel to recognize the inappropriateness of the instructions provided to torque shut the F006 valves to 450 ft./lbs.

Subsequently, the inspector determined that the planner who prepared the WR/JOs had received this training, but the Lead Mechanic involved had not. Also, the Maintenance Supervisor fulfilling the duties of the on-shift supervisor for the involved mechanics when the WR/JOs were assigned for accomplishment was an I&C Supervisor and, therefore, was not the most qualified to recognize the inappropriate torque values.

The major concern was the mechanics' failure to take required actions following damage to the first valve instead of proceeding on to the second valve. MMM-001 requires that when unexpected results occur

during performance of a procedure or when a procedure cannot be performed as written, the mechanic/technician shall stop work, place equipment in a safe condition, notify the Maintenance Supervisor, and follow administrative guidelines concerning procedure changes. This was not done in this event.

The original error of specifying incorrect torque values on the WR/JOs and the additional error of not complying with MMM-001 requirements upon damaging the first valve represent violations of TS 6.8.1 for an inadequate procedure and for failure to follow procedure, respectively. This is the third example of violation: 325,324/92-44-01, Inadequate Procedure and Failure to Follow Procedure with Regard to Overtorquing RHR Valves.

Further investigation by the inspector determined that the correct maximum handwheel torque value essentially duplicates, via the mechanical advantage of the actuator, the shutting force obtained by the motor operator during a normal shutting stroke. In as much as these two valves were already motor shut, nothing would have been gained in torquing the valves within the nominal range.

Inspection Report 325,324/92-04 documented a problem concerning the historic uncontrolled use of memos that serve as procedures or place procedure-like controls on some activities. Another example was recently revealed with regard to compression tube fittings. These mechanical tubing connections are prevalent in instrument tubing applications. Conflicting claims exist among fitting vendors regarding interchangeability between manufacturers. This prompted a 1983 memo prohibiting procurement to one vendor to avoid any interchangeability issues. Recently, during the plant modifications for the reactor building instrument racks, the interchangeability issue was rediscovered due to the existence on site of the previously prohibited vendor's product in use in combination with the preferred fittings. The licensee is taking appropriate action to again segregate the fittings by vendor but this example again illustrates the vulnerability of memo use to control certain activities.

On November 25, 1992, the Acting Site Vice President issued a memo effectively changing the procedure for control of Temporary Power installations to include equipment fed from welding receptacles. Previously this equipment was not included. This change would result in higher personnel safety, but use of a memo for this represents a continuation of activity controls at risk of being forgotten as in the fitting issue described above. Following identification by the inspector, steps were taken to properly incorporate the change into the existing Temporary Power procedures.

One additional violation example was identified.

7. Onsite Review Committee (40500)

The inspectors attended selected Plant Nuclear Safety Committee meetings conducted during the period. The inspectors verified that the meetings were conducted in accordance with Technical Specification requirements regarding quorum membership, review process, frequency and personnel qualifications. Meeting minutes were reviewed to confirm that decisions and recommendations were reflected in the minutes and followup of corrective actions was completed.

There were no concerns identified relative to the PNSC meetings attended. The resolution of safety issues presented during these meetings was considered to be acceptable.

Violations and deviations were not identified.

8. Engineering

Fire Protection/ Prevention Program(64704)

The inspector observed an announced fire drill at 8:00 PM on December 16. This drill was conducted to train the site Fire Brigade and test the ability of local fire departments to provide assistance. The local fire departments from the towns of Boiling Spring Lakes, Yaupon Beach, Long Beach and Southport and the Brunswick County Director of Emergency Preparedness participated in the drill. The Southport Fire Department was pre-staged in the plant parking lot and provided on scene assistance inside the power block. The remaining fire departments responded to the call without sirens, excessive speed or lights. No problems were incurred in processing the Southport Fire Department through Security. They and the other fire departments responded in a timely manner. The Southport Rescue Squad assisted in processing of a potentially contaminated person with simulated injuries. This aspect of the exercise also had the Southport Fire Department fight a fire in a potentially contaminated area. The time scale for the exercise was deliberately slowed down to allow active participation of these non-plant units. Overall, the exercise went well. Detailed briefs and evaluation were presented by the assigned observers. The inspector did not identify any discrepancies that were not detected and briefed by the assigned observers/evaluators.

Violations and deviations were not identified.

9. Safeguards (81054)

On December 22, 1992, the licensee's security organization performed three drills utilizing tactical team members. The inspector observed one of the drills including briefings and the critique. The inspector observed no weaknesses in the team's performance and considered that the players met the objectives of the drill. The team leader stopped action and took roll call after the initial confrontation with the intruders which the inspector considered to be a strength. The failure of an

explosive simulator to function and the wearing the Lasertrain vests by the drill players contributed to the success of the drill; however, traditional apparel would have made the test more realistic. The inspector noted that, during the drill, the respondents were having difficulty in attaining or maintaining radio communications in some areas. Changing location reduced or eliminated this difficulty which is indicative of inadequate repeater locations. The inspector has discussed his observations with the licensee. The licensee has included communication upgrades for operations in its three year business plan. The upgrades include the installation of a 800 megahertz radio system with three repeater stations which will be in place by March 31, 1993. The inspector was informed that security communication was not included in this upgrade. The security management plans to re-review its needs in the communications area.

Violations and deviations were not identified.

10. Action of Previous Inspection Findings (92701)(92702)

(Open) Violations 325,324/91-02-02, Installation and Testing of Unpacked Valves; 325,324/92-01-01, Inadequate Procedure During Diesel Generator Cleaning; and 325/92-04-02, Failure to Perform 50.59 Review and ASME PMTR With Regard to RHR SW Booster Pump Temporary Modification; and Deviation 325,324/92-04-01, Failure to Meet Commitment Made in Response to Violation 91-02-02 with Regard to PMTR. These items are all associated with some aspect of Post Maintenance Testing. The licensee's new PMTR program procedure was reviewed by the inspector with identification of some shortcomings (see paragraph 6 of this report). These items will remain open pending further assessment of the PMTR process.

Violations and deviations were not identified.

11. Other

Management Meeting

On December 10, 1992, the Regional Administrator, the NRR Associate Director for Inspection and Technical Assessment, the NRR Assistant Director for Region II Reactors and members of their staffs met with the President and LOU of CP&L and members of his staff to discuss the current outage, the repair of DG No. 1 and the restart schedule. A plant tour preceded the meeting.

Confirmatory Action Letter

On December 18, 1992, the NRC issued a Confirmatory Action Letter (CAL) to CP&L which documents those conditions that CP&L agreed to meet prior to the restart of Brunswick Unit 2. These conditions are:

- a. Complete the specific issues identified for Unit 2 in Enclosure 3 of CP&L's July 23, 1992 letter to the NRC.

- b. Repair and test DG No. 1 and inspect the remaining three units as described in CP&L December 10, 1992 presentation to the NRC.
- c. Perform a readiness review of equipment and personnel.
- d. Meet with the NRC to provide results of the readiness review.
- e. Obtain concurrence of the Regional Administrator.

Management Changes

On December 4, 1992, the licensee announced the appointment of Mr. Roy Anderson as Vice-President, Brunswick Nuclear Project. Mr. Anderson was Senior Vice-President - Nuclear at Boston Edison. He will assume his new duties on January 4, 1993.

12. Presentation to Civic Organization

On December 9, 1992, a Resident Inspector addressed the Southport Rotary Club at their weekly meeting in Southport, N.C. The purpose of the presentation was to inform the club members of the role of the NRC and Resident Inspectors at the Brunswick plant.

13. Exit Interview (30703)

The inspection scope and findings were summarized on January 4 with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection findings in the summary. Dissenting comments were not received from the licensee. Proprietary information is not contained in this report.

<u>Item Number</u>	<u>Description/Reference Paragraph</u>
325,324/92-44-01	Inadequate Procedure and Failure to Follow Procedures with Regard to Overtorquing RHR Valves, Log Keeping and Equipment Clearances.

14. Acronyms and Initialisms

ASME	American Society for Mechanical Engineers
CAL	Confirmatory Action Letter
CB	Control Building
CO	Control Operator
COO	Chief Operating Officer
CP&L	Carolina Power & Light Company
DG	Diesel Generator
DR	Direct Replacement
EDG	Emergency Diesel Generator
EDI	Engineering Dynamics, Inc. of San Antonio, Texas
EHC	Electro Hydraulic Control System
FaAA	Failure Analysis Associates of Menlo Park, California
GE	General Electric Company
HP	Health Physics
MSIV	Main Steam Isolation Valve
NED	Nuclear Engineering Department

NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
PA	Protected Area
PM	Plant Modification
PMTR	Post Maintenance Testing Requirements
PNSC	Plant Nuclear Safety Committee
POD	Plan of the Day
PT	Periodic Test
RHR	Residual Heat Removal
RHR SW	Residual Heat Removal Service Water
SCO	Senior Control Operator
SS	Shift Supervisor
STA	Shift Technical Advisor
STSI	Short Term Structural Integrity
SW	Service Water
SWFCG	Site Work Force Control Group
TS	Technical Specification
URI	Unresolved Item
UT	Ultrasonic Testing
WR/JO	Work Request/Job Order