



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

Report Nos.: 50-250/91-19 and 50-251/91-19

Licensee: Florida Power and Light Company
 9250 West Flagler Street
 Miami, FL 33102

Docket Nos.: 50-250 and 50-251

License Nos.: DPR-31 and DPR-41

Facility Name: Turkey Point 3 and 4

Inspection Conducted: May 25 through June 21, 1991

Inspectors:

R. C. Butcher
 for R. C. Butcher, Senior Resident Inspector 7/16/91
 Date Signed

G. A. Schnebli
 for G. A. Schnebli, Resident Inspector 7/16/91
 Date Signed

L. Trocine
 for L. Trocine, Resident Inspector 7/16/91
 Date Signed

M. D. Hunt
 M. D. Hunt, Reactor Inspector 7/16/91
 Date Signed

Approved by: *K. D. Landis*
 K. D. Landis, Chief 7/17/91
 Reactor Projects Section 2B
 Division of Reactor Projects
 Date Signed

SUMMARY

Scope:

This routine resident inspector inspection entailed direct inspection at the site in the areas of monthly surveillance observations, monthly maintenance observations, refueling preparations, plant modifications, operational safety, and plant events.

Results:

Within the scope of this inspection, the inspectors determined that the licensee continued to demonstrate satisfactory performance to ensure safe plant operations. One non-cited violation, one inspector followup item, and one concern were identified.

50-250,251/91-19-01, Non-cited Violation - Failure to adequately specify and implement design requirements (paragraph 4.b).

50-250,251/91-19-02, Inspector Followup Item - Provide administrative control of the original spare reactor coolant pump for Unit 4 (paragraph 10.b).

Concern - The lack of accuracy of engineering calculations (paragraph 10.b).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *T. V. Abbatiello, Quality Assurance Supervisor
- *J. Arias, Jr., Technical Assistant to Vice President
 - L. W. Bladow, Quality Manager
- *R. J. Daly, Outage Manager
 - T. A. Finn, Assistant Operations Superintendent
- *R. J. Gianfrancesco, Assistant Maintenance Superintendent
- *S. T. Hale, Engineering Project Manager
 - K. N. Harris, Senior Vice President - Nuclear Operations
 - E. F. Hayes, Instrumentation and Controls Supervisor
 - R. G. Heisterman, Assistant Superintendent of Electrical Maintenance
 - V. A. Kaminskis, Operations Superintendent
 - J. E. Knorr, Regulatory Compliance Supervisor
 - J. A. Labarraque, Senior Technical Advisor
 - G. L. Marsh, Reactor Supervisor
 - H. Johnson, Operations Supervisor
- *L. W. Pearce, Plant Manager - Nuclear
- *T. F. Plunkett, Site Vice President
- *D. R. Powell, Superintendent - Plant Licensing
 - K. L. Remington, System Performance Supervisor
 - C. V. Rossi, Quality Assurance Supervisor
 - R. N. Steinke, Chemistry Supervisor
 - J. C. Strong, Mechanical Department Supervisor
 - F. R. Timmons, Site Security Superintendent
 - M. B. Wayland, Maintenance Superintendent
 - J. D. Webb, Assistant Superintendent Planning and Scheduling
 - A. T. Zielonka, Technical Department Supervisor

Other licensee employees contacted included construction craftsman, engineers, technicians, operators, mechanics, and electricians.

NRC Resident Inspectors

- *R. C. Butcher, Senior Resident Inspector
- G. A. Schnebli, Resident Inspector
- *L. Trocine, Resident Inspector

*Attended exit interview on June 21, 1991

Note: An alphabetical tabulation of acronyms used in this report is listed in the last paragraph in this report.

2. Plant Status

The emergency power system enhancement project is on schedule and approximately 95% complete. The security system upgrade continues with the overall project approximately 92% complete.

- The 4B EDG and associated equipment have been turned over to operations.
- The 4A EDG is undergoing preoperational testing.
- Preoperational testing on the 3B EDG has been completed, and the punchlist items are being completed for turnover to operations.
- Preoperational testing on the 3A EDG started on June 19, 1991, and is scheduled to be completed by the end of June.
- All four sequencers are energized and in the initial checkout phase. Preoperational testing will start early next month.
- The 3A and 3B DC busses have been turned over to operations. The Unit 4 DC busses are in preoperational testing and will be turned over to operations shortly.
- The 4160-volt/480-volt switchgear room HVAC modifications are undergoing prerequisite testing.
- The control room air conditioning modifications are complete.
- Vitalization of portions of the new security system areas is scheduled for July 1, 1991, with vital area barrier construction still ongoing in certain areas. The new security entrance building will also be operational at that time.
- Repairs to the Unit 3 high pressure turbine casing are continuing.
- The new area radiation monitors are installed in the control room and are being reworked to correct an overheating situation. Turnover to operations is expected by July 15, 1991.
- The ATWS system is undergoing preoperational testing.

3. Followup on Items of Noncompliance (92702)

A review was conducted of the following noncompliance to assure that corrective actions were adequately implemented and resulted in conformance with regulatory requirements. Verification of corrective action was achieved through record reviews, observation, and discussions with licensee personnel. Licensee correspondence was evaluated to ensure the responses were timely and corrective actions were implemented within the time periods specified in the reply.

(Closed) VIO 50-250,251/90-40-02; Failure to Follow Procedures O-ADM-200 and 4-GOP-305 Resulting in the Inadvertent Opening of a PORV.

This violation resulted from a cognitive personnel error involving a licensed plant operator's failure to maintain RCS pressure within the limits of 325 psig and 375 psig as required by procedure 4-GOP-305, Hot Standby to Cold Shutdown. This resulted in the inadvertent opening of PORV 4-455C at its lift setpoint of 415 psig. Upon receipt of the overpressure mitigation system high pressure alert and overpressure mitigation system control alarms, the operator immediately reduced pressure manually to approximately 350 psig. The licensee's January 17, 1991, response to this violation was reviewed by the inspectors. The responsible operator was counseled for failure to closely monitor for pressure changes whenever pressurizer spray is changed. In addition, the licensee plans to revise procedures 3/4-GOP-305, Hot Standby to Cold Shutdown; 3/4-GOP-503, Cold Shutdown to Hot Standby; 3/4-OP-041.1, Reactor Coolant Pump; and 3/4-OP-041.8, Filling and Venting the Reactor Coolant System, to caution operators to closely monitor all RCS pressure indicators to ensure that the proper pressure range is maintained. A caution will also be added to remind operators of the small margin between the required pressure range and the PORV lift setpoint. These procedure revisions are being revised under the licensee's Procedures Upgrade Program, and the revisions to procedures 3/4-GOP-305 are being tracked on the licensee's CTRAC system. These revisions are scheduled for completion prior to re-establishment of RCS integrity, during the current dual unit outage. This violation is considered to be closed.

4. Followup on Inspector Followup Items (92701)

Actions taken by the licensee on the items listed below were verified by the inspector.

- a. (Closed) IFI 50-250,251/90-09-02; Discrepancies in SG Blowdown Operation and Low Flow Trip Setpoint Described in the FSAR.

The licensee initiated REA Nos. 90-448 and 90-471 to correct these discrepancies in the FSAR. The required corrections will be included in the next update to the FSAR which is currently scheduled for July, 1991. This IFI is closed.

- b. (Closed) URI 50-250,251/91-16-01; Determine Cause for Wiring Errors in the 4B EDG Output Breaker Position Circuitry.

In discussions with Startup, Construction, and Design Engineering, an existing cable (4E35/C) was identified as terminated when in fact Engineering had initially intended it to be spared for the new EPS modification. Design and scope documents were unclear concerning this cable and Field Engineering did not specify in the work Installation List that the cable was to be spared. Startup scheme checks of the 4AB21 breaker in support of 4B EDG testing did not include the spared cable since this cable was part of the 3B EDG scheme.

The design document for this modification, PC/M 87-264, indicated on drawings PTN-J-87-264-145 (the before drawing) and 5613-E-362A/87-264 (the after drawing) that cable 4E35/C was to be removed from terminals TBI-86 and TBI-88. In addition, these drawings showed that another original installed cable, 4E35/A, was to remain installed at these terminals and be relabeled as DG3B/3AB20-3C12B/A. However, drawing 5613-E-362A/87-264, Construction Note 3C, which lists all cables that are to be removed, did not identify cable 4E35/C as being removed. Due to the fact that this cable was not listed in Note 3C, Field Engineering Installation List No. 0777/87-264C which performed the work for this modification, did not specify de-termination of this cable. The licensee initiated the following corrective action to correct this problem and prevent future occurrences:

- JPN Engineering and Construction Field Engineering have issued CRNs to further clarify splicing of the proper cable to correct the problem.
- JPN Engineering has reviewed EDG design drawings for possible EDG intertie cables and has generated a list of these cables.
- Startup is performing a thorough check of the affected circuits using appropriate PC/M drawings. Additionally, Startup will use the list of potential intertie cables generated by Engineering to further verify that no undesired cross ties exist that could potentially trip a diesel. Startup plans to do this additional check of the Engineering List by using personnel other than those that performed the normal checks.
- Construction Field Engineers have reviewed design drawings compared to scoping documents and have identified additional discrepancies on the 4160-volt "B" Bus and subsystem 3DG01A. This work will be addressed by Construction as clearances are issued.
- For current and future applications to prevent recurrence of this situation, Construction is issuing TD No. 91-040 to ASP-34 for a new "Appendix F" requiring Construction Field Engineers to independently verify the correctness of project scope for all work packages.
- Engineering will prepare a schedule to revise a select population of drawings to incorporate outstanding CRNs affecting the diesels, switchgear, and sequencers. This set of drawings was identified and prioritized by Startup.

TS 6.8.1 requires that written procedures be established, implemented, and maintained covering the activities recommended in Section 5.1 of ANSI N18.7-1972. Section 5.1.6.4 of this ANSI states that modifications that might degrade the quality or the assurance of

quality provided for the plant shall not be permitted. JPN QI-3.1, Supplement 3.1-3, Engineering Package, Part No. 2, Section 9, states: "The design output shall require that the design implementer perform a wire check of the modified circuits. This is to verify that the as-installed condition matches the design drawings for those areas affected by the design modification and that any temporary jumpers and lifted leads have been resolved. This wire check will be typically performed against the connection drawings. Any deviations between the as-installed condition and the design drawings shall be corrected by modification of the as-installed condition or be referred to engineering via a CRN." ASP-34, Preparation of Process Sheets and Installation Lists, step 5.4.1., states that the Project Field Engineer is responsible for ensuring full implementation of PC/M requirements or other governing documents by the preparation, review, approval, and revision of all Process Sheets and Installation Lists. The recommendations stated above were not followed in that on May 18, 1991, design and scope documents were unclear concerning the required modification of cable 4E35/C, which resulted in the unplanned shutdown of 4B EDG during preoperational testing. This licensee-identified violation is not being cited because the criteria specified in Section V.G.1 of the NRC enforcement policy were satisfied. This item will be tracked as NCV 50-250,251/91-19-01, failure to adequately specify and implement design requirements resulting in a trip of the 4B EDG. This item is considered closed.

5. Onsite Followup and In-Office Review of Written Reports of Nonroutine Events and 10 CFR Part 21 Reviews (90712/90713/92700)

The Licensee Event Reports and/or 10 CFR Part 21 Reports discussed below were reviewed. The inspectors verified that reporting requirements had been met, root cause analysis was performed, corrective actions appeared appropriate, and generic applicability had been considered. Additionally, the inspectors verified the licensee had reviewed each event, corrective actions were implemented, responsibility for corrective actions not fully completed was clearly assigned, safety questions had been evaluated and resolved, and violations of regulations or TS conditions had been identified. When applicable, the criteria of 10 CFR Part 2, Appendix C, were applied.

- a. (Closed) LER 50-251/90-12; 4B EDG Water Leak Due to Manufacturing Defect Which Could Prevent the EDG From Performing its Intended Safety Function.

This was a voluntary LER submitted by the licensee on March 15, 1991. The vendor replaced both manifolds and associated hardware in the 4B EDG. The 4A EDG was also inspected and found to be acceptable. This LER is closed.

- b. (Closed) LER 50-251/91-01; Unit 4 Startup Transformer De-Energization.

This event was previously discussed in IR 50-250,251/91-11 and was identified as NCV 50-250,251/91-11-02. This LER is closed.

6. Monthly Surveillance Observations (61726)

The inspectors observed TS required surveillance testing and verified that the test procedures conformed to the requirements of the TSs; testing was performed in accordance with adequate procedures; test instrumentation was calibrated; limiting conditions for operation were met; test results met acceptance criteria requirements and were reviewed by personnel other than the individual directing the test; deficiencies were identified, as appropriate, and were properly reviewed and resolved by management personnel; and system restoration was adequate. For completed tests, the inspectors verified testing frequencies were met and tests were performed by qualified individuals.

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

- a. AP-0190.90, ASME Section XI Pressure Tests for Quality Group A, B, and C Systems/Components [Test No. 04-CCW-3066-H-01, Hydrostatic Test of CCW Piping Associated With Train B (CCW piping associated with the Unit 4 SFP, non-regenerative, and seal water heat exchangers)] (For additional information, refer to paragraph 9.a of this report.);
- b. AP-0190.90, ASME Section XI Pressure Tests for Quality Group A, B, and C Systems/Components [Test No. 04-CCW-30164-H-01, Hydrostatic Test of CCW Piping Associated With Train A (CCW piping associated with the Unit 4 pressurizer steam, pressurizer liquid, and reactor coolant sample coolers; the boric acid evaporator steam jet eductor and boric acid evaporator condensate coolers; and the boric acid evaporator, containment spray pump A seal water, RHR pump A seal water, A RHR, and A CCW heat exchangers)] (For additional information, refer to paragraph 9.a of this report.);
- c. AP-0190.90, ASME Section XI Pressure Tests for Quality Group A, B, and C Systems/Components [Test No. 04-CCW-30163-H-02, Hydrostatic Test of CCW Piping Associated With Emergency Containment Coolers (the 4C emergency containment cooler)]. (For additional information, refer to paragraph 9.a of this report.);
- d. Cat 400 Operations (local unloaded startup of the Caterpillar diesel generator at the diesel); and
- e. POP-0804.084, Emergency Diesel Generator 4A System Preoperational Test Phase II (35 starts).



The inspectors determined that the above testing activities were performed in a satisfactory manner and met the requirements of the TSs. Violations or deviations were not identified.

7. Monthly Maintenance Observations (62703)

Station maintenance activities of safety-related systems and components were observed and reviewed to ascertain they were conducted in accordance with approved procedures, regulatory guides, industry codes and standards, and in conformance with the TSs.

The following items were considered during this review, as appropriate: LCOs were met while components or systems were removed from service; approvals were obtained prior to initiating work; activities were accomplished using approved procedures and were inspected as applicable; procedures used were adequate to control the activity; troubleshooting activities were controlled and repair records accurately reflected the maintenance performed; functional testing and/or calibrations were performed prior to returning components or systems to service; QC records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were properly implemented; QC hold points were established and observed where required; fire prevention controls were implemented; outside contractor force activities were controlled in accordance with the approved QA program; and housekeeping was actively pursued.

The inspectors witnessed/reviewed portions of the following maintenance activities in progress:

- a. Unit 4 ICW/CCW heat exchanger discharge piping repairs (Refer to paragraphs 9.a and 9.c of this report for additional information.);
- b. troubleshooting and repair of 4B EDG turbocharger lube oil pump seal leak;
- c. troubleshooting the newly installed ARMS modules for overheating; and
- d. troubleshooting the 3B ICW pump low lube water flow.

For those maintenance activities observed, the inspectors determined that the activities were conducted in a satisfactory manner and that the work was properly performed in accordance with approved maintenance work orders. Violations or deviations were not identified.

8. Operational Safety Verification (71707, 64704)

The inspectors observed control room operations, reviewed applicable logs, conducted discussions with control room operators, observed shift turnovers, and monitored instrumentation. The inspectors verified proper valve/switch alignment of selected systems, verified maintenance work

orders had been submitted as required, and verified followup and prioritization of work was accomplished. The inspectors reviewed tagout records, verified compliance with TS LCOs, and verified the return to service of affected components.

By observation and direct interviews, verification was made that the physical security plan was being implemented. The implementation of radiological controls and plant housekeeping/cleanliness conditions were also observed.

Tours of the intake structure and diesel, auxiliary, control, and turbine buildings were conducted to observe plant equipment conditions including potential fire hazards, fluid leaks, and excessive vibrations. In addition, the inspectors walked down accessible portions of systems which are currently required to be operable/functional in order to verify proper valve/switch alignment.

The licensee conducted a safety evaluation to define control of the plant configuration during the dual unit emergency power system enhancement project. Procedure TP-645, Defueled Operations Without Emergency Diesel Generators, was issued to proceduralize the requirements determined in the safety evaluation to be in effect from the time both units enter the defueled condition and both EDGs are removed from service. Also, portions of the revised TSs became effective when both units entered the defueled condition.

- a. The licensee routinely performs QA/QC audits/surveillances of activities required under its QA program and as requested by management. To access the effectiveness of these licensee audits, the inspectors examined the status, scope, and findings of the following audit reports:

<u>Audit Number</u>	<u>Number of Findings</u>	<u>Type of Audit</u>
QAO-PTN-90-073	3	QP 12.1 and 12.2, Calibration of M&TE and Installed Instrumentation
QAO-PTN-91-008	3	Chapters 4,5,6, and 10 of the Physical Security Plan, TS 6.5.2.8.1
QAO-PTN-91-010	-	TS 3/4.7.1-3/4.7.5, Plant Systems
QAO-PTN-91-018	2	March Performance Monitoring Audit
QAO-PTN-91-024	-	Corrective Action
QAO-PTN-91-027	2	Computer Software Control as Delineated in QP 2.15
QAO-PTN-91-029	-	Integrated Schedule
QAO-PTN-91-039	-	Security Communications and Compensatory Action Requirements

The QA audit reports reviewed were distributed to the appropriate departmental managers, the Plant Manager, the CNRB, and the President - Nuclear Division. The applicable criteria, a description of the particular finding, a discussion of the issues, a statement of the impact on quality, a list of recommended corrective actions, a recommended responsible department, and the responsible QA contact were documented for each finding. In accordance with the licensee's QA program, the responsible department is required to respond to all QA findings in writing. No additional NRC followup actions will be taken on these findings because they were identified by the licensee's QA program audits, appropriate corrective actions have either been completed or are currently underway, and plant management has been made aware of these issues. See paragraph 12 for additional QA audit reviews.

- b. The inspectors conducted a review of licensee's fire watch program to ensure its adequacy. The following documents were reviewed: O-ADM-016, Fire Protection Program; O-ADM-016.1, Transient Combustible and Flammable Substances Program; O-ADM-016.3, Fire Protection Impairments; O-ADM-016.4, Fire Watch Program; TS 3.3.3.4, Fire Detection Instrumentation; TS 3.7.8, Fire Suppression Systems; and TS 3.7.9, Fire Rated Assemblies. The inspectors also performed a fire watch tour with the fire protection department head and a fire watch shift supervisor. The hourly tour included all of Fire Watch Tour No. 1 which inspects both EDG buildings and the Unit 3 and 4 turbine area including all enclosed rooms and transformer areas. The licensee utilizes the MORSE system for ensuring the fire watch visits each station required by the tour. This system utilizes a data recorder, a recorder station, an interface unit, and a PC. The data recorder is a mini computer that stores the identification of the individual performing the tour and the various stations and times the individual keyed into the recorder station. The recorder can then be down loaded into a PC for a printout or stored for record purposes.

The licensee normally mounts the data recorder station in a remote area of the room so that the fire watch would be required to enter and tour the room to key the station and log into the system. However, during the current dual unit outage some of the data recorder stations were mounted at different locations to facilitate outage work. For example, the data recorder station mounted in the Unit 3B MCC room was moved from the back of the room to the front of the room near the door due to outage activities in the room. It should be noted that the licensee currently exceeds the TS requirements for the roving fire watch patrol. TS Table 3.3-6 only requires a fire watch patrol to inspect the 18-foot level of the turbine area once each hour. This does not include the EDG buildings and individual rooms in the turbine area as these are protected by fire detection instrumentation. Fire watch patrols would only be required to tour these areas if a fire protection impairment existed in the room. The licensee opted to require the patrols to tour all the rooms as well as the 18-foot level of the turbine area whether an



impairment existed or not as a good practice in the fire protection program. The inspectors considered the route taken by the patrols and the location of the MORSE data recorder stations to be adequate and in excess of that required by TS. After the tour is complete, the fire watch signs a log sheet indicating that they completed their hourly tour. This log is in turn reviewed daily by the Fire Watch Administrator. The MORSE data recorder is then returned to the fire watch office area where it is connected to a PC, and a printout of the tours for that shift are obtained and reviewed by the shift supervisor and subsequently by the Fire Watch Administrator. This record is also stored in a computer data base.

The inspectors also reviewed the qualifications of personnel assigned to the fire protection department. All have security level 14, which allows access to all vital areas in the plant. The majority of the personnel also are red badge qualified to allow access to the RCA. The small number of personnel that are not red badge qualified does not appear to be a problem as the department has adequate fire watches to provide coverage for the RCA.

c. Temporary Waiver of Compliance for Spent Fuel Pool Keyway Gate Lift and Seal Repair.

By letter dated June 7, 1991, the licensee requested the noted temporary waiver of compliance. A telecon was held on June 10, 1991, with the licensee, NRC Region II, and NRC Headquarters personnel to discuss the SFP keyway gate seal repair and the repair of the transfer canal liner. The NRC verbally concurred with the licensee's proposed actions and documented the agreement and agreed upon compensatory actions by letter dated June 11, 1991. The actual SFP keyway gate lift was performed on June 21, 1991, in accordance with TP-740, Spent Fuel Pool Keyway Gate Removal and Installation for Seal Replacement. The lift was witnessed by an NRC inspector. The time in the "waiver" condition was approximately 30 minutes. The licensee performed all compensatory actions stipulated in the temporary waiver of compliance. The transfer canal liner repair will be initiated following the keyway gate repair and reinstallation, draindown, and decontamination of the transfer canal.

As a result of routine plant tours and various operational observations, the inspectors determined that the general plant and system material conditions were satisfactorily maintained, the plant security program was effective, and the overall performance of plant operations was good. In addition, the inspectors verified the critical electrical system lineup and verified the availability of the required number of blackstart diesel generators. Availability of the minimum number of ICW and CCW pumps was also verified. Violations or deviations were not identified.

9. Plant Events (93702)

The following plant events were reviewed to determine facility status and the need for further followup action. Plant parameters were evaluated during transient response. The significance of the event was evaluated along with the performance of the appropriate safety systems and the actions taken by the licensee. The inspectors verified that required notifications were made to the NRC. Evaluations were performed relative to the need for additional NRC response to the event. Additionally, the following issues were examined, as appropriate: details regarding the cause of the event; event chronology; safety system performance; licensee compliance with approved procedures; radiological consequences, if any; and proposed corrective actions.

- a. On May 28, 1991, the licensee performed three 10-year ISI hydrostatic tests in accordance with Test Nos. 04-CCW-3066-H-01, 04-CCW-30164-H-01, and 04-CCW-30163-H-02 of procedure AP-0190.90, ASME Section XI Pressure Tests for Quality Group A, B, and C Systems/Components, which meets the requirements of ASME Section XI, 1980 Edition, Winter 1981 Addenda. These hydrostatic tests included portions of the CCW piping associated with Unit 4. The inspectors reviewed the test procedures prior to performance and attended the pre-evolution briefing. The performance of these tests required the temporary securing of the cooling for the Unit 4 SFP because the CCW system, which cools the SFP heat exchanger, would not be available during the tests. The ICW system, which cools the CCW heat exchangers, was also secured during these tests. Repair work to portions of the ICW piping was also accomplished while this system was secured. (For additional information regarding this repair work, refer to paragraph 7.a of this report.) SFP cooling was secured at 9:32 a.m. and was re-established at 8:20 p.m. after completion of the hydrostatic testing and the ICW repair work. While cooling was secured, the temperature in the Unit 4 SFP increased from approximately 95 degrees F to 111 degrees F. The inspectors witnessed these tests and verified that the tests were completed satisfactorily. (For additional information, refer to paragraphs 6.a, 6.b, and 6.c of this report.)
- b. On June 5, 1991, the licensee performed a 10-year ISI hydrostatic test in accordance with procedure AP-0190.90, ASME Section XI Pressure Tests for Quality Group A, B, and C Systems/Components, which meets the requirements of ASME Section XI, 1980 Edition, Winter 1981 Addenda. This hydrostatic test (Test No. 03-CCW-30195-H-01, Hydrostatic Test of CCW Piping Associated with Train B) included the Unit 3 CCW piping associated with SFP, non-regenerative, and seal water heat exchangers. The inspectors reviewed the test procedure prior to performance and attended the pre-evolution briefing. The performance of this test required the temporary securing of the cooling for the Unit 3 SFP because the CCW system, which cools the SFP heat exchanger, would not be available during the test. The ICW

system, which cools the CCW heat exchangers, was also secured during this test. Work on the 3B 4160-volt bus, which would affect the operation of both the 3B ICW and 3B CCW pumps, was also accomplished. SFP cooling was secured at 9:26 a.m. and was re-established at 6:35 p.m. after completion of the hydrostatic testing. While cooling was secured, the temperature in the Unit 3 SFP increased from 95 degrees F to 108 degrees F. The inspectors witnessed portions of this test and verified that the test was completed satisfactorily.

- c. On June 19, 1991, the licensee repaired portions of the ICW piping located on the discharge side of the Unit 4 ICW/CCW heat exchangers. This repair was performed in conjunction with the performance of work on the 4C load center. Because both the ICW system, which provides cooling for the CCW heat exchangers, and the CCW system, which in turn provides cooling for the SFP heat exchanger, would not be available during these evolutions; it was necessary to temporarily secure Unit 4 SFP cooling. The inspectors reviewed the ICW repair procedures and attended both the pre-shift and pre-evolution briefings. SFP cooling was secured at 9:10 a.m. and was re-established at 8:24 p.m. at the completion of the ICW pipe repairs. While cooling was secured, the temperature in the Unit 4 SFP increased from 100 degrees F to 115 degrees F. (For additional information, refer to paragraph 7.a of this report.)

Violations or deviations were not identified.

10. Installation and Testing of Modifications (37828)

An inspection was conducted to ascertain the licensee's methods of ensuring that design changes and modifications meet the requirements of the TSs, 10 CFR 50.59, and 10 CFR Part 50, Appendix B, Criterion III. Each of the PC/M packages reviewed contained a written safety evaluation which concluded that the change could be implemented without prior NRC approval under the provisions of 10 CFR 50.59. Each modification involved either the installation of a new system or resulted in an existing system, as described in the FSAR, being changed to provide increased reliability or maintainability. None of the PC/Ms required a change to the facility TSs. The inspectors verified by direct observation that the work was being performed by qualified workers and in accordance with approved instructions and drawings contained in the work package. The installation of the hardware was verified to be in accordance with the as-built drawings. Installation, preoperational, and startup testing were adequate to ensure that the system/equipment met the performance requirements of the design criteria. The following modifications were reviewed during this inspection period:

- a. PC/M 90-338, Power for Blackstart Diesel Generators' Battery Charger.

This PC/M provided the details for the enhancement of the power supply to the battery charger associated with the blackstart diesel generators. This modification involved the installation of a

transfer switch to provide a method for the automatic transfer to an alternate source of power upon loss of normal power. The transfer switch will automatically transfer back to the normal position approximately 15 minutes after normal power is restored. A transformer was also installed to increase the 208-volt alternate supply to 240 volts in order to eliminate the need to re-adjust the internal settings of the battery charger, which is rated for a 240-volt input.

b. PC/M 90-232, Modification to Increase Capacity of RCP Oil Collection Tank - Appendix R (Unit 3).

The RCP oil collection tank collects oil from the RCP lube oil collection drip pan, lower bearing drip pan, and the oil lift pump enclosure for all three RCP motors. On November 10, 1989, the licensee notified the NRC that the capacity of the Unit 3 RCP oil collection tank was not in compliance with 10 CFR Part 50, Appendix R, criteria. This was documented in IR 50-250,251/89-49 and in LER 50-250/89-16. The originally installed RCPs for both units had a total oil inventory of 200 gallons each as compared to the original spare RCP oil inventory of 275 gallons. Subsequently, the original spare RCP was installed in Unit 3. This required increasing the Unit 3 RCP oil collection tank from 251 gallons to 324 gallons. Additionally, the original spare RCP will probably be installed in Unit 4 sometime in the future and therefore, the Unit 4 RCP oil collection tank will also require modification to increase its capacity.

The inspector verified the affected drawings were revised and confirmed the oil collection tank was modified as shown on drawing 5610-C-1744. The inspector's calculation of the oil collection tank volume increase did not match the numbers quoted in the PC/M. In addition, the engineering calculations could not be duplicated. Although the original engineering calculations could not be duplicated and did not match the numbers in the PC/M, the available volume still exceeds the minimum required volume to meet the licensee's commitments for 10 CFR Part 50, Appendix R.

The inspector could find no administrative controls to prevent the installation of the original spare RCP in Unit 4 prior to increasing the Unit 4 RCP oil collection tank volume.

The licensee was requested to administratively control the installation of the original spare RCP in Unit 4 to require the modification of the RCP oil collection tank volume. The licensee's actions to control the installation of the original spare RCP to the Unit 4 RCP oil collection tank modification will be tracked as IFI 50-250,251/91-19-02. A concern was also noted regarding the lack of accuracy of engineering calculations.

Violations or deviations were not identified.

11. Preparation For Refueling (60705)

On May 29-30 and June 5-6, 12-14, and 19, 1991, new fuel assemblies for the Unit 4 refueling were off loaded into the new fuel room. The inspectors witnessed portions of the off loading of the new fuel containers from the truck and the transfer of new fuel from the fuel transfer cask to the new fuel room. Operations, Quality Control, Health Physics, and Security coverage was present during the off loading process. The licensee used OP 16009.1, Receipt and Handling of New Fuel Containers, and OP 16009.2, On-Site Removal of New Fuel Assemblies From Shipping Containers and Handling of Shipping Containers, for the evolutions. Operations controlled the evolutions. Reactor Engineering performed inspections of both the containers and fuel once the top was removed and recorded the results per the referenced procedures. The recorded data was then compared to the shipping data for agreement. All evolutions were well coordinated and handled well. Violations or deviations were not identified.

12. Outage Testing Program Review (37701)

During the period of June 10 - 12, a regional inspector was at the site to review the overall testing program to determine the sequence of functional and preoperational tests. During this inspection, deficiency reports related to cable installation were also reviewed along with the methods for determining if any damage had occurred during the pulling operations. A special testing program was established as the result of one cable that was damaged during installation. During testing of cable 3B5007/3B50-3B03/P, Phase B was found shorted to ground due to missing insulation. An evaluation determined that the installation was extremely difficult to perform and required the installer to physically support the cable in a very limited space. As a result, the cable may have been dragged over the edge of a pull-through conduit (PTC), causing the insulation damage. The cable was repulled and tested using different pull points that were still within the pulling tension limits for the type cable being installed.

The inspector reviewed the results of two QA Audits, Nos. QAO-PTN-91-014 and QAO-TPN-91-026. The first audit examined the performance of the Joint Test Group (JTG) in reviewing completed test results, including the installation and testing of the Unit 3 load center transformers, the operator requalification program training for the design changes for the enhanced electrical power systems, and the root cause analysis for the cause of a Unit 4 Start-up Transformer trip during the "B" 4kV Bus Outage. The audit identified one finding regarding the observation of engineering hold points for the core reload and mode change in that the process documents did not preclude bypassing these hold points. No additional NRC followup actions will be taken on this finding because it was identified by the licensee's QA program audit, appropriate corrective actions are underway, and plant management has been made aware of the issue. The second audit reviewed the installation and testing of the Fire Protection Systems in the 4A and 4B diesel generator room, the early phase testing of

the new Unit 4 emergency diesel generators (EDG), and the modifications to the existing EDGs now assigned to Unit 3. There were no audit findings identified in these areas. See paragraph 8.a for additional QA audit reviews.

The inspector also observed the start of the 24-hour load run for the 3B EDG. During the first two hours, the EDG was operated at 110% (2750 kw) of capacity and then returned to full load (2500 kw) for the remaining 22 hours. This test was performed to verify that modifications made to the governor, the turbo-charger, and the addition of a 20-minute cool down idle cycle for engine cooling did not impact on the operation of the diesel engine. At the end of the 24-hour run, the inspector observed the full load rejection test performed to ensure that the engine would not overspeed on loss of generator load. The portions of the test observed were part of procedure 0804.073d, EDG 3B Idle Start and Support System Modification Test.

Violations or deviations were not identified.

13. Exit Interview (30703)

The inspection scope and findings were summarized during management interviews held throughout the reporting period with the Plant Manager - Nuclear and selected members of his staff. An exit meeting was conducted on June 21, 1991. The areas requiring management attention were reviewed. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. Dissenting comments were not received from the licensee. Violations or deviations were not identified. The inspectors had the following findings:

<u>Item Number</u>	<u>Description and Reference</u>
50-250,251/91-19-01	NCV, Failure to adequately specify and implement design requirements (paragraph 4.b).
50-250,251/91-19-02	IFI, Provide administrative control of the original spare RCP for Unit 4 (paragraph 10.b).
Concern	The lack of accuracy of engineering calculations (paragraph 10.b).

13. Acronyms and Abbreviations

ADM	Administrative
a.m.	ante meridiem
ANSI	American National Standards Institute
AP	Administrative Procedure
ARMS	Area Radiation Monitor System

ASME	American Society of Mechanical Engineers
ASP	Alternate Shutdown Panel
ATWS	Anticipated Transient Without Scram
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CNRB	Company Nuclear Review Board
CRN	Change Request Notice
CTRAC	Commitment Tracking System
DC	Direct Current
EDG	Emergency Diesel Generator
EPS	Emergency Power System
F	Fahrenheit
FSAR	Final Safety Analysis Report
GOP	General Operating Procedure
HVAC	Heating, Ventilation and Air Conditioning
ICW	Intake Cooling Water
IFI	Inspector Followup Item
IR	Inspection Report
ISI	Inservice Test
JPN	Juno Plant Nuclear
LCO	Limiting Condition for Operation
LER	Licensee Event Report
MCC	Motor Control Center
M&TE	Measuring and Test Equipment
NCV	Non-cited Violation
NRC	Nuclear Regulatory Commission
OP	Operating Procedure
PC	Personal Computer
PC/M	Plant Change/Modification
p.m.	post meridiem
POP	Preoperational Procedure
PORV	Power Operated Relief Valve
psig	pounds per square inch gauge
PTN	Plant Turkey Nuclear
QA	Quality Assurance
QAO	Quality Assurance Organization
QC	Quality Control
QI	Quality Instruction
QP	Quality Procedure
RCA	Radiation Control Area
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
REA	Request for Engineering Assistance
RHR	Residual Heat Removal
SFP	Spent Fuel Pit
SG	Steam Generator
TD	Temporary Deviation
TP	Temporary Procedure
TS	Technical Specification
URI	Unresolved Item
VIO	Violation