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

Report Nos.: 50-250/92-24 and 50-251/92-24

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 Units 3 and 4

Inspection Conducted: October 3 through 30, 1992

Inspectors: A.R. Long for — 11/25/92
R. C. Butcher, Senior Resident Inspector — Date Signed

A.R. Long for — 11/25/92
G. A. Schnebli, Resident Inspector — Date Signed

A.R. Long for — 11/25/92
L. Trocine, Resident Inspector — Date Signed

Accompanying Personnel:

S. A. Elrod, Senior Resident Inspector, St. Lucie
M. T. Janus, Reactor Engineer

Approved by: K.D. Landis — 11/25/92
K. D. Landis, Chief — Date Signed
Reactor Projects Section 2B
Division of Reactor Projects

SUMMARY

Scope:

This routine resident inspector inspection involved direct inspection at the site in the areas of monthly surveillance observations, monthly maintenance observations, operational safety, plant events, Unit 4 startup activities, and Unit 3 refueling activities. Backshift inspections were performed on October 3, 6-7, 10, 17, and 19-29, 1992.

Results:

Within the scope of this inspection, the inspectors determined that the licensee continued to demonstrate satisfactory performance to ensure safe

plant operations. One cited violation and one weakness were identified. In addition, the licensee, through self assessment, took prompt action to correct the two non-cited violations noted below:

50-250,251/92-24-01, Non-Cited Violation - Failure to follow a procedure resulting in the opening of a power operated relief valve and the temporary isolation of residual heat removal system (paragraph 7.b).

50-250,251/92-24-02, Non-Cited Violation - Failure to adequately verify a clearance resulting in the overflow of slightly radioactive water onto the floor of the 2-foot elevation in the auxiliary building (paragraph 7.d).

50-250,251/92-24-03, Violation - Failure to follow a procedure resulting in entering the wrong Resistance Temperature Detector constants into the Eagle 21 system (paragraph 6.b).

Weakness - The poor quality of drawings which contribute to personnel errors (paragraph 7.d).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

* T. V. Abbatiello, Site Quality Manager
  R. J. Earl, Quality Assurance Supervisor
  R. J. Gianfrencesco, Support Services Supervisor
  E. F. Hayes, Instrumentation and Controls Maintenance Supervisor
  R. G. Heisterman, Mechanical Maintenance Supervisor
  P. C. Higgins, Outage Manager
  D. E. Jernigan, Technical Manager
* H. H. Johnson, Operations Supervisor
* V. A. Kaminskas, Operations Manager
* J. E. Knorr, Regulatory Compliance Analyst
* R. S. Kundalkar, Engineering Manager
  J. D. Lindsay, Health Physics Supervisor
  G. L. Marsh, Reactor Engineering Supervisor
* L. W. Pearce, Plant General Manager
  M. O. Pearce, Electrical Maintenance Supervisor
* T. F. Plunkett, Site Vice President
  D. R. Powell, Services Manager
  R. N. Steinke, Chemistry Supervisor
  F. R. Timmons, Security Supervisor
* M. B. Wayland, Maintenance Manager
* E. J. Weinkam, Licensing Manager

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

Accompanying NRC Inspectors

S. A. Elrod, Senior Resident Inspector, St. Lucie
* M. T. Janus, Reactor Engineer

NRC Management on Site

K. D. Landis, Section Chief, Reactor Projects Branch 2, Region II

* Attended exit interview on October 30, 1992.

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

2. Other NRC Inspections Performed During This Period

Report No.	Dates	Area Inspected
50-250,251/92-23	October 5-9, 1992	Fire Protection
50-250,251/92-26	October 19-22, 1992	Materials Management

3. Plant Status

Unit 3

At the beginning of this reporting period, Unit 3 was shut down for a refueling outage. The unit entered Mode 6 at 5:05 a.m. on October 1, 1992, when the first head closure bolt was de-tensioned. The outage is currently scheduled for completion in late November 1992. (Refer to paragraph 8 for additional information.)

Unit 4

At the beginning of this reporting period, Unit 4 was shut down while FEMA completed a post-hurricane re-verification of the adequacy of the off site emergency planning facilities and equipment located within the 10-mile emergency planning zone around the site. Unit 4 had entered Mode 5 at 9:05 p.m. on October 2, 1992. The following evolutions occurred on this unit during this assessment period:

- In preparation for restart, Unit 4 entered Mode 4 at 3:00 p.m. on October 20, 1992, and continued the heat up to Mode 3 which was entered at 4:45 a.m. on October 21, 1992. Mode 2 was entered at 5:00 a.m. on October 24 and criticality occurred at 5:15 a.m. Mode 1 was entered at 12:20 p.m. on October 24. Unit 4 was placed on line at 1:37 p.m. on October 24 and reached 50% power at 12:25 a.m. on October 25 and remained at this power level until repairs were completed on a cracked weld in the 4A main feed pump recirculation line to the condenser.

- The unit reached 100% power at 9:00 p.m. on October 27, 1992.

4. 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:

- 4-OSP-023.1, Diesel Generator Operability Test,
- 4-OSP-049.1, Reactor Protection System Logic Test, and
- 4-OSP-050.2, Residual Heat Removal System, Inservice Test.

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.

5. 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:

- main feedwater pump 4A recirculation line drain valve replacement (Refer to paragraph 5.a for additional information.),
- repair of MOV-3-868A stem key and washer,
- replacement of Unit 3 EDG current transformers,
- replacement of Unit 4 shutdown bank A, group 2, demand step counter (see paragraph 5.b), and
- weld repair and hydrostatic test of 4A RHR pump casing.

a. Work request 92047312 controlled reinstalling vent valve 4-20-147 on the 4A feed pump recirculation line. The vent valve had blown off of the recirculation line while the feed pump was in service for feedwater system warmup.

Initial inspection showed a fairly new one-half-inch size drain valve with an intact downstream pipe stub and a severed upstream pipe stub. The severed stub appeared to have mostly brittle fracture, such as a fatigue failure, with a small area of ductile failure, such as from overstress. This conclusion was supported by two conditions. The A-train support brace was installed on the main pipe but had not been welded to the downstream stub, and the system vibrated heavily when in service.

A-train repair activity found the vent line attachment boss and the main pipe cracked, then later found erosion in the multiple breakdown orifice just upstream of the bell reducer. The work scope was expanded to include bell reducer replacement, and UT of both the A- and the B-train breakdown orifices. When B-train was unlagged, the licensee found the analogous B-train valve support brace weld cracked at the main pipe area and the work scope was expanded again to repair it.

Engineering review was performed in several stages under NCR N-92-0265 as repair activities revealed additional degraded conditions. Engineering concurred with the above failure mode analysis and specified to reweld the A-train brace as an interim measure pending completion of a formal root cause and design analysis. NCR revisions also required the main pipe bell reducer be replaced because a crack was discovered in it; UT of both the A- and B-trains because of erosion found on an upstream breakdown orifice during the repair; and the B-train brace be rewelded as an interim measure because the weld connecting the brace to the main pipe was found broken. Engineering initiated a design change to provide a more suitable, bolt-on, tie-back, pipe support to replace the existing configurations on both Units 3 and 4.

The coordination among the repair shop, the engineers, and QC was excellent. The inspectors had no further questions.

b. Work Orders 9205307801 (Unit 4) and 92053280 (Unit 3) were used to troubleshoot the Unit 4 shutdown bank A, group 2, demand step counter, which had failed to function during a Unit 4 reactor startup on October 24, 1992. The Unit 3 document removed a counter from the Unit 3 control board and the Unit 4 document installed it in Unit 4. Elements observed included technician care while working in the control boards, procedural adherence to the work documents, and techniques used to control and independently verify lifted leads. The inspector had no questions in these areas, the task was well performed.

During the counter changeout, which originally included replacing the Unit 4 counter with a new one from stores, the technicians observed that the new counter, obtained under stock No. 776 92 085 0, carried model No. 127FD100AS/3 and had 100 V DC control coils and a 110 V AC reset coil. The counter removed from the control panel was a model 127FA110AS/3 and had 110 V AC control coils and a 110 V AC reset coil. The reason for stocking the counters with DC coils could not be readily found so the work order was modified to use a Unit 3 (AC) counter. The inspector considered the technicians' actions in questioning the repair parts to be very professional and conservative. The licensee is continuing to reconcile the counters stocked in stores with the vendor.

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.

6. Operational Safety Verification (71707)

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 emergency 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.

The inspectors walked down accessible portions of the following safety-related systems/structures to verify proper valve/switch alignment:

- A and B emergency diesel generators,
- control room vertical panels and safeguards racks,
- intake cooling water structure,
- 4160-volt buses and 480-volt load and motor control centers,
- Unit 3 and 4 feedwater platforms,
- Unit 3 and 4 condensate storage tank area,

- auxiliary feedwater area,
- Unit 3 and 4 main steam platforms, and
- auxiliary building.

Other observations and/or inspections were as follows:

a. The inspectors walked down the electrical portion of the AFW system in order to ensure that power supplies were available to all of the necessary valves for Unit 4. No discrepancies were identified. The inspectors also toured the TSC to verify usability. Despite cosmetic storm damage, all equipment appeared to be functional and the plant drawings and procedures were accessible. Minor discrepancies were brought to the licensee's attention for correction.

b. At 1:00 p.m. on October 23, 1992, the licensee discovered that the scaling constants for RTDs TE-4-432C and D for Eagle 21, channel III (cold leg temperature) were entered incorrectly. The constant values for TE-4-432C and D were interchanged. This discrepancy could have affected the Tc input to the reactor protection system. On September 22, 1992, Westinghouse replaced the loop C, Channel III Tc RTDs (TE-4-432C and D), which is a dual RTD, since one of the RTDs had failed earlier in the year. Following the replacement of TE-4-432C and D, the licensee entered the calibration constants for the new RTDs. This work was accomplished under PWO number WA920206074036. The new RTD constants are specified on the accompanying RTD calibration data sheets which are identified by the specific RTD serial number. A Westinghouse procedure for replacing the RTD generated a data sheet which related RTD tag number to serial number. The data from the Westinghouse procedure was not available when the parameters were updated. The data was verbally transmitted and not verified against the Westinghouse procedure. The technician entering the RTD constants into the Eagle 21 system interchanged the RTD serial number and the appropriate constants.

   On October 23, 1992, the licensee was requested to brief the NRC on any modifications or changes that may have affected and/or changed the scaling constants entered into the Eagle 21 system. They were also requested to demonstrate why any changed constants were valid. In preparing to brief the inspectors, the licensee discovered the noted discrepancy. The inspectors then compared the settings for various Eagle 21 adjustable parameters as defined in drawing 5614-J-841, Eagle 21 Process Parameters Index, to a printout of the existing settings in the Unit 4 Eagle 21 system. The inspectors reviewed approximately 65% of the noted settings and found no further errors. There were several enhancements noted to the licensee to help make the drawing more user friendly.

The scaling factors entered into the RTD calculation for cold leg temperature created errors that canceled each other when averaged and therefore there was no safety issue due to these errors.

TS 6.8.1 requires that written procedures be established, implemented, and maintained covering activities recommended in Appendix A of RG 1.33, Revision 2, February, 1978. Section 9 of Appendix A of RG 1.33 recommends procedures for performing maintenance. AP 0190.19, Control of Maintenance and Construction Work on Safety Related and Quality Related Systems, paragraph 3.2.1, states that work activities which can affect the performance of safety related and quality related equipment shall be appropriately preplanned and shall be performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances. Procedure O-GMI-102.26, Alteration of Eagle 21 Protection System Parameters, Section 6.6, Protection Set Parameter Update, on page 38 requires that the field supervisor verify that the correct parameters were up-dated and the correct values for parameters were entered. However, on September 19, 1992, incorrect scaling constants for the channel III RTDs were entered into the Eagle 21 protection systems, but were verified as correct by the field supervisor. This failure to follow procedure is a violation and will be tracked as VIO 50-250,251/92-24-03, failure to follow a procedure resulting in entering the wrong RTD constants into the Eagle 21 system.

c. The inspectors observed the Unit 4 reactor startup on October 24 per 4-GOP-301. Important elements observed were the briefing, management control of other work and activities, procedural adherence, operator attention to detail, and monitoring of nuclear performance. A briefing was conducted by the SRO prior to the startup commencing. During the startup, other activities were stopped and management and operator attention focused on the startup. When a shutdown group demand counter failed to work, the operators promptly stopped the startup until the counter was repaired. (Refer to paragraph 5.b for additional information.) One shutdown rod position indicated low when the bank was fully withdrawn, but returned to specification within a one-hour soak period. The Unit entered Mode 2 at 5:00 a.m. and was critical at 5:15 a.m. The inspector had no further comment in this area.

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. One violation was identified.

7. 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. At 2:50 p.m. on October 3, 1992, the control room received a fire pump trouble alarm, and an ANPO reported that the electric fire pump was running. Subsequent investigation identified a break in the 8-inch fire main header near the west side of the central receiving building. This pipe had been hit by a cherry picker which was being used inside the central receiving facility. Because the break was located upstream of the local isolation valves, the leak could only be isolated by closure of PIV-68 which in turn would isolate hydrants HY-28 and HY-30. Per TSA 3-92-16-22, the backup diesel fire pumps would connect into the fire header though HY-28. The leak was successfully isolated by closure of PIV-68 at 3:30 p.m., and by 3:50 p.m., the hoses for the backup diesel fire pumps were re-routed to tie into the fire header via HY-31. The lowest level reached in raw water tank number II was 22 feet 4 inches, and no other equipment was affected. A level of 13 feet 9 inches in the raw water storage tank will ensure the TS minimum of 300,000 gallons required for fire protection. A clearance was hung on PIV-68, an FPI was issued, and a PWO was submitted to construction to install a temporary cap on the broken line.

b. At 11:58 a.m. on October 5, 1992, with Unit 4 in Mode 5, operations and I&C personnel were performing OMS nitrogen backup loop operability tests per Section 7.2.1, Primary Loop, PCV-4-456, of procedure 4-OSP-041.4, Overpressure Mitigating System Nitrogen Backup Leak and Functional Test. During the performance of test step 7.2.1.10.c, which required the connection of a transmitter simulator to TBH terminals 4 and 5 for an analog channel operational test of PCV-4-456, the I&C specialist used the wrong section of the procedure (Section 7.2.2, Backup Loop, PCV-4-455C) and performed step 7.2.2.10.c, which required the connection of a transmitter simulator to TBH terminals 10 and 11 for an analog channel operational test of PCV-4-455C. This resulted in the introduction of a simulated high pressure signal to RHR pump suction valve MOV-4-751, which began to close, and to PORV-4-455C, which began to open. Procedure 4-ONOP-050, Loss of RHR, was entered, and the 4A RHR pump was stopped. The I&C specialist removed the test signal to TBH terminals 10 and 11, and PORV-4-455C automatically closed. The overpressure signal to MOV-4-751, which had fully closed, was reset; the valve was re-opened; and the 4B RHR pump was restarted after approximately 2 minutes. RCS temperature increased approximately 1°F, and RCS pressure decreased approximately 11 to 12 psig. The NRC Operations Center

was notified of this 4-hour reportable non-emergency event at 2:35 p.m. in accordance with 10 CFR 50.72(b)(2)(iii).

The introduction of an artificial high pressure signal into the wrong loop was attributed to personnel error in that the I&C specialist used the wrong section of the procedure. The individual involved was counselled on the importance of care in the execution of procedures and was disciplined in accordance with plant policy. Procedure 3/4-OSP-041.4 was also revised to require a verification that the appropriate block valve is closed and power removed from the appropriate RHR suction valve.

TS 4.4.9.3.1.a requires that each PORV be demonstrated operable by performance of an analog channel operational test on the PORV actuation channel, but excluding valve operation, within 31 days prior to entering a condition in which the PORV is required to be operable and at least once per 31 days thereafter when the PORV is required to be operable. Step 1.0 of procedure 4-OSP-041.4, Overpressure Mitigating System Nitrogen Backup Leak and Functional Test, states that this procedure satisfies the requirements of TS 4.4.9.3.1.a. Step 7.2.1.10.c of this procedure requires the connection of a transmitter simulator to TBH terminals 4 and 5 for an analog channel operational test of PCV-4-456. Contrary to this requirement, on October 5, 1992, step 7.2.2.10.c, which requires the connection of a transmitter simulator to TBH terminals 10 and 11 for an analog channel operational test of PCV-4-455C, was performed in lieu of step 7.2.1.10.C. This resulted in the opening of PORV-4-455C and in the isolation of RHR for approximately 2 minutes. This failure to follow a procedure constitutes a violation. However, this violation will not be subject to enforcement action because the licensee's efforts in identifying and correcting the violation meet the criteria specified in Section VII.B of the NRC Enforcement Policy. This non-cited violation will be tracked as NCV 50-250,251/92-24-01, failure to follow a procedure resulting in the opening of a PORV and in the temporary isolation of RHR. This item is closed.

c. At 7:00 a.m., on October 9, 1992, a maintenance technician tripped and fell into the Unit 3 refueling cavity. At the time of the event, the maintenance technician was providing directional assistance to the polar crane operator when he stepped on a rope, lost his footing, and slipped into the cavity. He was able to partially catch himself on the edge and got wet up to his waist. The individual was not injured by the fall, and no ingestion or inhalation of contaminated water occurred. The contamination level on the lower half of the maintenance technician's body was found to be 10,000 dpm. It went down to 2,000 dpm following a shower, and the individual successfully passed through the whole body portal monitors after several showers. The licensee issued a press release on October 9, 1992.

d. At 12:30 p.m. on October 11, 1992, with Unit 3 defueled, a decreasing trend (approximately 8,000 gallons) in the level of the Unit 3 RWST was noted. Apparently, valve 3-942Z (drain valve downstream of check valve 3/4-874D) had been incorrectly hand drawn onto enlarged drawings which were being used to map outage work activities. This valve was actually located outside the boundary of the clearance. The error was carried forward onto a clearance given to the control room for verification. Although controlled drawings were used in the control room to verify the clearance, the review process did not catch the error. As a result, when the RWST purification loop was placed in service at 5:45 a.m., it created a flow path of slightly radioactive water from valve 3-942Z via an attached drain rig to the Auxiliary Building 2-foot elevation sump. The water was then pumped to the No. 1 WHT via the Unit 3 and 4 sump pumps. The Unit 3 sump pump subsequently tripped, and the discharge capacity of the Unit 4 sump pump was less than the influx of water to the sump. This resulted in the overflow of approximately 100-200 gallons of slightly radioactive water onto the floor. The 2-foot elevation is a room approximately 20 feet long by 4 feet wide, and the water was approximately 1/2 inch deep. The RWST purification loop was subsequently shut down, and valve 3-942Z was closed. The Unit 4 sump pump then pumped the standing water into the No. 1 WHT. The No. 1 WHT was approximately 85% full following this evolution, and there was no release of radiation to the environment. The licensee issued a press release on October 12, 1992. Dade County and the State of Florida were informed by the licensee on the following day.

In order to prevent further operational events, the licensee formed a Configuration Control Review Team consisting of the operations outage director, an SRO not previously involved with the evolution or clearance, a system engineer and/or technical department shift supervisor, and a department head for evolutions requiring increased management attention. Prior to performance of a task, the team was chartered to review all clearances to ensure that adequate boundaries exist for the work listed and that all vents and drains are within the boundary, review all clearance releases for adequacy for releasing steps in correct order, review all clearance boundary modifications and test releases prior to implementation, and review complex evolutions to ensure that all precautions are taken to minimize any risks. Additional corrective actions included the day shift review of all planned clearances at least one day before performance, the double verification of the hanging of clearances on radioactive systems with a third independent verification of the clearance, the performance of a pre-evolution briefing prior to releasing the clearance to ensure system integrity, and the independent verification of all radioactive release valve lineups by the NWE or above prior to transferring contents of any tank for release.

TS 6.8.1 requires that written procedures be established, implemented, and maintained covering activities recommended in Appendix A of RG 1.33, Revision 2, February 1978. Section 1.c of this Appendix recommends administrative procedures for equipment control (e.g., locking and tagging). Procedure O-ADM-212, In-Plant Equipment Clearance Orders, paragraph 5.7.5.1, requires that the adequacy of the information contained in the request section of the clearance control form be verified by the ANPS. However, paragraph 5.7.5.1 of procedure O-ADM-212 was not adequately performed in that the incorrect hand drawing of valve 3-942Z onto enlarged drawings (which were being used to map outage work activities) was carried forward onto a clearance provided to the control room for verification, and the verification did not identify that valve 3-942Z was actually located outside the boundary of the clearance. As a result, on October 11, 1992, when the Unit 3 RWST purification loop was placed in service, a flow path of slightly radioactive water was created from valve 3-942Z to the Auxiliary Building 2-foot elevation sump, and 100-200 gallons of slightly radioactive water overflowed the sump onto the floor when one of two sump pumps tripped. This failure to adequately follow a procedure is a violation. However, this violation will not be subject to enforcement action because the licensee's efforts in identifying and correcting the violation meet the criteria specified in Section VII.B of the NRC Enforcement Policy. This non-cited violation will be tracked as NCV 50-250,251/92-24-02, failure to adequately verify a clearance resulting in the overflow of slightly radioactive water onto the floor of the 2-foot elevation in the auxiliary building. This item is closed. A contributing factor to this event was the poor quality of drawing 5610-T-E-4510. The poor quality of drawings which contribute to personnel errors is considered a weakness.

e. Due to ongoing Unit 4 restart activities on October 21, 1992, the on-shift NPS directed the Assistant Outage Shift Director (an off-shift NPS) to supervise the performance of Section 7.1, Filling the Refueling Cavity to One Foot Below the Reactor Vessel Flange When the Reactor Core is Off-Loaded, of procedure 3-OP-201, Filling/Draining the Refueling Cavity and the SFP Transfer Canal. Because a one time only OTSC (No. 10840) regarding this section of 3-OP-201 had been written and approved to permit the refill of the RCS during the fill of the lower cavity from the RWST during defueled conditions, both the reactor vessel and lower refueling cavity were being filled at the time of the event. At approximately 6:05 p.m. following the initial procedural steps, RHR injection valves MOV-744A and MOV-744B were opened to commence the RCS fill through the cold legs, and HCV-758 was opened to establish a flow rate of 800-1000 gpm. At 6:20 p.m. with RCS drain down level indicators LT 6421 and LT 6423 indicating at 40% and increasing, an operator stationed in containment reported that there was water flowing from the flange. These level indicators were indicating approximately 20% low. The tygon tube indicator inside containment (LT 6422) also indicated a water level below

the reactor vessel flange. MOV-744A and MOV-744B were immediately closed, and the RCS level increase stopped. Indicated level was still slowly rising and water was still flowing from the flange at 6:30 p.m. In trying to remedy this situation, the procedure was exited, and at 6:33 p.m., an attempt was made to lower RCS inventory by draining water to empty RHR piping by opening valves MOV-750 and MOV-751 which are located in series between the C hot leg and the suction of the RHR pumps. These valves would not open initially because of an interlock with RWST to RHR pump suction valves MOV-862A and MOV-862B. To overcome this interlock, MOV-862A and MOV-862B were closed, and another attempt was made to open MOV-750 and MOV-751. MOV-751 stroked open, but indication for MOV-750 was lost. The breaker for this valve was cycled, and a closed (green light) indication returned. MOV-750 had actually stroked fully open on demand, but the control room indication remained in the closed position because the limit switches for open/closed indications still required alignment during the upcoming MOVATS testing. Believing that MOV-750 was closed and that MOV-751 was open, MOV-862A and MOV-862B were re-opened at 6:34 p.m. in order to wet the internals of MOV-751 for the upcoming MOVATS testing. This created a direct flow path from the RWST to the reactor vessel. A rapid increase in drain down level and in pressurizer level was noticed, and MOV-751 was immediately closed. Due to a long stroke time (approximately 150 seconds), MOV-862A and MOV-862B were also closed. As a result of this event, pressurizer cold calibration level increased to approximately 33%, and RWST level decreased by approximately 10,000 gallons. A portion of this water leaked through the flange and conoseals and drained to the lower cavity which was also being filled.

As a result of this event, the licensee stopped all work until all causal factors could be identified and corrective actions could be put into place. The individuals involved were counselled and received disciplinary action, and operations personnel were sensitized to their required roles and the need to perform in those capacities. Management oversight on shift was also established to review control room activities. In addition, procedures were implemented to require the placing of caution tags on controls in the control room when maintenance activities would lead to that indication reading off normal, and procedure changes will be implemented to establish an appropriate RCS fill rate and to ensure the backfilling of LT 6421, LT 6422, and LT 6423 after RCS draindown. The resident inspectors will followup on the licensee's ongoing actions regarding this event.

One weakness and two non-cited violations were identified.

8. Unit 3 Refueling Activities (60710)

Unit 3 entered Mode 6 at 5:05 a.m. on October 1, 1992, when the first reactor head stud was de-tensioned. The unit had been shut down and in

Mode 5 since 5:05 p.m. on August 25, 1992, following the shutdown in preparation for Hurricane Andrew. The off loading of fuel elements started when the first element was removed at 3:09 a.m. on October 7, 1992. The off loading of fuel was completed on October 9, 1992, when the last fuel element was removed at 6:06 a.m. The inspectors witnessed these off loading activities on October 7, 1992. The process was conducted in an efficient professional manner in accordance with appropriate procedures. Violations or deviations were not identified.

Refueling activities for Unit 3 were delayed until Unit 4 had successfully restarted and had reached a stable power level. Unit 4 was stabilized at 100% power on October 27, 1992, at 9:00 p.m., following its restart on October 24, 1992, at 5:00 a.m. Following the restart of Unit 4, refueling activities commenced on Unit 3 at 5:20 a.m. on October 28, 1992, when the unit re-entered Mode 6. The reloading of fuel elements was completed on October 31, 1992, at 6:55 p.m., when the last fuel element was reloaded into the reactor vessel. The inspectors witnessed these reloading activities on two separate occasions on October 29 and 30, 1992. The process was conducted with good communications between the refueling crew and the control room operators, adherence to the appropriate procedures, and in an overall professional and efficient manner. Violations or deviations were not identified.

9. Exit Interview (30703)

The inspection scope and findings were summarized during management interviews held throughout the reporting period with the Plant General Manager and selected members of his staff. An exit meeting was conducted on October 30, 1992. 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. The inspectors had the following findings:

Item Number	Description and Reference
50-250,251/92-24-01	NCV - Failure to follow a procedure resulting in the opening of a PORV and in the temporary isolation of RHR (paragraph 7.b).
50-250,251/92-24-02	NCV - Failure to adequately verify a clearance resulting in the overflow of slightly radioactive water onto the floor of the 2-foot elevation in the auxiliary building (paragraph 7.d).
50-250,251/92-24-03	VIO - Failure to follow a procedure resulting in entering the wrong RTD constants into the Eagle 21 system (paragraph 6.b).

Weakness	The poor quality of drawings which contribute to personnel errors (paragraph 7.d).

10. Acronyms and Abbreviations

AC	Alternating Current
ADM	Administrative
AFW	Auxiliary Feedwater
ANPO	Auxiliary Nuclear Plant Operator
ANPS	Assistant Nuclear Plant Supervisor
AP	Administrative Procedure
CFR	Code of Federal Regulations
DC	Direct Current
dpm	Disintegrations Per Minute
EDG	Emergency Diesel Generator
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FPI	Fire Protection Impairment
GMI	General Maintenance - I&C
GOP	General Operating Procedure
HCV	Hydraulic Control Valve
HY	Hydrant
I&C	Instrumentation and Control
LCO	Limiting Condition for Operation
LT	Level Transmitter
MOV	Motor Operated Valve
MOVATS	Motor Operated Valve Actuator Test System
NCR	Non-conformance Report
NCV	Non-Cited Violation
NPS	Nuclear Plant Supervisor
NRC	Nuclear Regulatory Commission
NWE	Nuclear Watch Engineer
OMS	Overpressure Mitigating System
ONOP	Off Normal Operating Procedure
OP	Operating Procedure
OSP	Operations Surveillance Procedure
OTSC	On-the-Spot Change
PCV	Pressure Control Valve
PIV	Post Indicator Valve
PORV	Pressure Operated Relief Valve
PWO	Plant Work Order
QA	Quality Assurance
QC	Quality Control
RG	Regulatory Guide
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RTD	Resistance Temperature Detector
RWST	Refueling Water Storage Tank
SFP	Spent Fuel Pit
SRO	Senior Reactor Operator
TBH	Terminal Block H
Tc	Temperature Cold

TE	Temperature Element
TS	Technical Specification
TSA	Temporary System Alteration
TSC	Technical Support Center
UT	Ultrasonic Testing
V	Volt
VIO	Violation
WA	Work Authorization
WHT	Waste Holdup Tank