



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report Nos.: 50-250/84-18 and 50-251/84-18

Licensee: Florida Power and Light Company
9250 West Flagler Street
Miami, FL 33101

Docket Nos.: 50-250 and 50-251

License Nos.: DPR-31 and DPR-41

Facility Name: Turkey Point 3 and 4

Inspection Dates: May 7 - June 9, 1984

Inspection at Turkey Point site near Homestead, Florida

Inspector: *Kenneth M. Jensen for*
T. A. Peebles, Senior Resident Inspector

July 10, 1984
Date Signed

Accompanying Personnel: D. R. Brewer, Resident Inspector

Approved by: *Hugh C. Danner for*
Stephen A. Elrod, Chief, Project Section 2C
Division of Reactor Projects

7/12/84
Date Signed

SUMMARY

Areas Inspected

This routine, unannounced inspection involved 262 inspector-hours on site, including 53 hours of backshift, in the areas of licensee action on previous enforcement items, IE Bulletin followup, IE Circular followup, LER followup, annual and monthly surveillance, annual and monthly maintenance, operational safety, Emergency Safety Features walkdown, plant trips, refueling, fire protection, spent fuel pool activities, independent inspection and exit interview.

Results

Of the fourteen areas inspected, no violations or deviations were identified in thirteen areas; and one violation was found in the area of operational safety (failure to establish and implement an adequate procedure, paragraph 10).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- K. N. Harris, Vice President - Turkey Point
- *C. J. Baker, Plant Manager - Nuclear
- G. J. Boissy, Performance Enhancement Program Manager
- J. P. Mendiotta, Maintenance Superintendent - Nuclear
- D. W. Haase, Operations Superintendent - Nuclear
- J. P. Lowman, Assistant Superintendent Mechanical Maintenance - Nuclear
- W. R. Williams, Assistant Superintendent Electrical Maintenance - Nuclear
- *J. W. Kappes, Maintenance Superintendent - Nuclear
- *E. F. Hayes, Instrumentation and Control Supervisor
- T. A. Finn, Operations Supervisor
- W. Miller, Training Supervisor
- *V. A. Kaminskas, Reactor Engineering Supervisor
- J. S. Wade, Chemistry Supervisor
- P. W. Hughes, Health Physics Supervisor
- *M. J. Crisler, Quality Control Supervisor
- *J. A. Labarraque, Technical Department Supervisor
- *J. Arias, Regulation & Compliance Lead Engineer
- *K. Jones, Operations QA Supervisor
- *D. Grandage, Plant Engineering Supervisor
- W. Bladow, Acting QA Operations Supervisor
- J. E. Moaba, Section Supervisor-Licensing
- R. E. Garrett, Plant Security Supervisor
- *R. G. Merde, Reactor Engineering
- *D. Tomaszewski, Technical Engineering

Other licensee employees contacted included construction craftsmen, technicians, operators, mechanics, electricians and security force members.

Other persons attending the exit June 1, 1984

- *K. J. Davenport, Region based Inspector
- *S. A. Elrod, Region Section Chief

*Attended Exit Interview

2. Exit Interview

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 held on June 1, 1984, with the persons noted above.

The areas requiring management attention were reviewed, including: the spent fuel pool areas controls (250/84-18-06); fire protection drill adequacy (250/84-18-05); and the estimated critical condition procedure proposed violation (250/84-18-07). The licensee acknowledged the findings.

Mr. S. A. Elrod, Chief, Section 2C, Division of Reactor Projects, accompanied the inspector on a plant tour and on an administrative review of the procedure review group. There were no adverse findings but the licensee was asked to review the adequacy of the piping and supports associated with the containment instrument air line for both units. This will be followed as followup item (250/84-18-03).

Another exit was held with the plant manager - nuclear on June 8. The corrective actions to be taken following the loss of containment integrity were reviewed. This is followup item (250/84-18-02). Also, the inspector requested that the allowable range for containment temperature be investigated. This is followup item (250/84-18-04).

3. Licensee Action on Previous Inspection Findings

- a. Evaluation of Performance Enhancement Program. The attributes of the licensee's corrective action tracking system were inspected and found to be in the process of revision. The QC supervisor is reworking the program and several discussions were held on implementation times and what the program would include.
- b. The inspector conducted an intensive review of old inspection findings. The following items are closed except where noted:

Previous Inspection Findings applicable to both Units 3 and 4

76-01-01	Implementation of Plant Drawing System. This item was closed by report 83-41.
77-BP-01	Determine that limit switches inside containment have been environmentally qualified. This item was closed and opened under Bulletin 79-01B.
77-04-06	Revise startup procedure to require review of jumper log prior to startup. The procedure was revised, and the item is closed.
77-11-02	Missing steam generator (S/G) tube plug. The S/G was replaced, and this item is closed.
77-12-04	NRR to evaluate fuel handling accident inside containment. The licensee sent a letter to NRR March 21, 1977, addressing this issue, which closes this item.

- 77-15-01 Inspect Unit 3&4 safeguards and protection relay racks for loose terminal screws and material that could prevent relay operation, procedure changes to include inspection. This item is closed.
- 77-15-02 Determine cause for EDG B being in lockout prior to safeguards test. Personnel error was determined to be the cause. This item is closed.
- 77-21-03 Determine QC involvement in maintenance activities. QC has been reorganized. This item is closed.
- 77-21-06 Technical Specification (TS) change involves heatup rates of pressurizer. The TS was changed. This item is closed.
- 77-26-02 Testing of emergency containment cooler filter absorber spray valves. Report 77-28 closed this item.
- 77-28-02 Revise administrative controls to insure that complete reportable event evaluation is documented. This item was reviewed and is closed.
- 78-PC-04 Inspect licensee actions to verify environmental qualification of electrical equipment. This item was closed by open bulletin 79-01B and subsequent rule-making.
- 78-PC-06 Adequacy of procedures controlling SI reset. This item is closed following review of procedures.
- 78-18-01 Blocking SI initiation during plant cooldown. A review of administrative controls allows this item to be closed.
- 78-18-03 Cleanliness controls inside containment. An inspection of containment and review of controls closes this item.
- 78-25-01 Review of tilting disk check valves. Closed by opening of circular 78-15.
- 78-25-04 Poor communications ability during emergency drills. This item is closed, as it is addressed under IEB 79-18.
- 78-25-05 Full exercising of emergency teams during drills. Inspected and open in report 84-18, paragraph 14.
- 78-28-03 Revise OP 0204.5 to require evaluation of test results by a responsible person prior to next usage of procedure. Reviewed and closed, however a similar item is open in report 84-14.

- 78-28-04 Clarify responsibility for review of activities affecting quality in the area of reactor engineering by a responsible person prior to next usage of procedure. This item is reviewed and closed, however, a similar item is open in report 84-14.
- 78-30-01 Failure to follow procedure for boric acid system valve alignment. Reviewed and closed. A similar item is also closed in report 84-11.
- 79-01-01 Licensee to implement temporary procedure system by April 1, 1979. The system was implemented by the licensee. This item is closed.
- 79-01-02 Power operated relief valves (PORV) to be added to Q list when OMS placed in operation. The list was revised to include the PORV. This item is closed.
- 79-07-02 Conduct research into possible diaphragm rupture of narrow range containment pressure transmitter at ILRT pressure. The transmitters were replaced with a qualified version. This item is closed.
- 79-09-01 Documentation of functional testing of mechanical snubbers by vendor to be forwarded. The document was forwarded. This item is closed based on further testing.
- 79-15-01 Rod P-10 out of bank by 100 steps due to possible rod drop. The rod was realigned with no further problem. This item is closed.
- 79-19-01 Failure to implement procedures - 3 examples: Safety evaluation per A 190.5 - Recirculation monitor TKS per para 8.4 of procedure 5163.1 - failure to log release on 6-11-79 per paragraph 8423 of AP 10.3.2. These items are closed, however, similar items are open in report 84-11.
- 79-24-02 Reportability of nonconformances on diesel generator transformer brackets. This is closed.
- 79-24-03 Licensee commitment to have maintenance procedures for the Auxillary Feedwater system promulgated by October 1979. The procedures are in place. This item is closed.
- 79-41-01 Followup on sheet metal as found in 3A and 3C steam generator hotlegs. This item is closed by completion of replacement of both steam generators.

- 80-16-03 Identification of license personnel performing item 4 of the September 18, 1979 licensee response to IEB 79-21. The review is complete and the item is closed.
- 80-33-01 Failure to take timely corrective action on QC surveillance. This item is closed based upon the implementation of a new tracking system.
- 80-33-02 Failure to fully restore a safety system to operation following maintenance. This item is closed, however, a similar item is open in report 84-11.
- 80-33-03 Inspect implementation of containment isolation administrative controls. This item is closed, however, similar item is open in report 84-18.
- 81-05-01 Failure to take effective corrective action on QC surveillance. This item is closed based upon the implementation of a new tracking system.
- 81-13-02 Adequacy of licensee corrective action for housekeeping violations. This item is closed based upon a review of corrective actions.

Previous Inspection Findings applicable to Unit 4

- 74-10-03 Replace charging line check valve No. 4-312A. This valve was replaced during the steam generator replacement outage. This item is closed.
- 76-15-01 Control of jumpers and lifted leads. This item was inspected and is closed, however, similar items are open in report 84-04.
- 77-01-04 Overflow of RWST due to RHR valve realignment. This item is closed.
- 77-12-02 Implementation of valve and pump ISI programs. This program was implemented and the item is closed.
- 77-21-08 RWST level below limit required by TS due to operator error. Corrective actions are complete and the item is closed.
- 78-01-01 Review drawing files to determine if QP 6.5 is being followed. QA records not being stored as required. Record storage is in an interim stage until a new vault is installed; this item is closed.

- 78-23-02 Missing orifices in Containment Spray system, supplemental LER due. The LER supplement was submitted 7/79, the orifices were installed and documentation is complete. This item is closed.
- 80-14-03 Identification of licensee personnel performing item 4 of the September 18, 1979 licensee response to IEB 79-21. Review is complete and the item is closed.
- 80-32-01 Failure to take effective corrective action on QC surveillance. QC has been reorganized. This item is closed.
- 80-32-03 Inspect implementation of containment isolation administrative control. This item is closed, however, a similar item is open in report 84-18.
- 82-29-01 Failure to follow AP 103.4 equipment clearance orders on ECO 7-1-55 in effect from 7-19-82 to 7-23-82. This item is closed, however, a similar item is open in report 84-14.
- 82-34-01 Failure to identify the need for the reinstallation of lagging on PWO as required by 190.19 and failure to reinstall after maintenance as required by step 8.2 of AP 103.11. A review of corrective actions closes this item.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. IE Bulletin Followup (92703)

The inspector discussed the requirements of several pending IE Bulletins with the licensee. Based on an analysis of licensee supplied information and documentation, the inspector closed all action items related to the following three bulletins.

(Closed - Units 3 and 4) - IEB 76-05 Westinghouse Type BFD relays. The licensee replaced the relays and has established a tracking system to identify future problems.

(Closed - Units 3 and 4) - IEB 77-04 Calculation error affecting the design performance of a system for controlling the PH of containment sump water following a LOCA. The remaining documentation review was completed.

(Closed - Units 3 and 4) - IEB 79-6C Nuclear incident at Three Mile Island - supplement. This is closed by NUREG 0737 and Generic Letter 83-10d.

6. Circulars

The following circulars were reviewed as noted:

(Closed - Units 3 and 4) - CI 76-02 Westinghouse BF and BFD relays. The relays addressed were replaced and the licensee has a tracking system for future problems.

(Open - Units 3 and 4) CI 77-15 Fuel oil blockage to diesel generator. This review has not been completed nor has documentation been found. This item remains open.

(Closed - Units 3 and 4) CI 78-08 Environmental qualification of safety-related electrical equipment at nuclear power units. This item is closed as it is addressed by Bulletin 79-01B and rulemaking.

7. Licensee Event Report (LER) Followup

The following LERs were reviewed and closed. The inspector verified that reporting requirements had been met, causes had been identified, corrective actions appeared appropriate, generic applicability had been considered, and the LER forms were complete. Additionally, for those reports identified by asterisk, a more detailed review was performed to verify that the licensee had reviewed the event, corrective action had been taken, no unreviewed safety questions were involved, and violations of regulations or TS conditions had been identified.

(Closed) LER 250/84-03 Engineered Safety Feature Actuation - Reactor Trip. The inspector reviewed Operating Procedure 1004.2, Reactor Protection Periodic Test, as revised on April 10, 1984, and verified that additional procedural steps designed to improve operator awareness had been incorporated. The inspector concluded that the additional procedural steps would, if rigorously followed, prevent a reoccurrence of the inadvertent reactor trip discussed in this LER. This item is closed.

(Closed) LER 250/84-05 Engineered Safety Feature Actuation - Reactor Trip. The licensee has developed Administrative Site Procedure (ASP)-19 which itemizes the procedures to be followed to obtain construction work permits and to tag equipment under construction control. The procedure was reviewed and approved by the Plant Nuclear Safety Committee. ASP-19 should facilitate increased awareness of construction activities in progress near equipment which, if disturbed, could lead to reactor trips similar to the one discussed in this LER. This item is closed.

(Closed) LER 250/84-10 Special Report - Breach of Fire Barriers. TS 6.9.3 requires that a written report be submitted when fire barrier penetrations are non-functional in excess of seven days. Upon receipt of LER 250/84-10 the inspector verified that hourly fire watch patrols were being maintained and that fire detectors near affected areas were operable. Fire barrier penetrations will periodically be placed out of service while fire protection modifications are being completed to meet certain requirements specified in 10 CFR Part 50, Appendix R. This item is closed.

(Closed) LER 250/84-12 Engineered Safety Feature Actuation. The inspector verified that cognizant personnel were instructed in the importance of maintaining precautions so as not to disturb equipment which could cause safety system actuation. The inspector verified that the cause of the automatic transfer of the 480 volt power supply, addressed in LER 250/84-12, was personnel error due to the inadvertent jarring of a relay by a construction worker. The licensee emphasized the need to follow guidance found in construction work procedures to preclude a recurrence of this event. This item is closed.

(Closed) LER 251/84-06 Engineered Safety Feature Actuation - 4KV Bus Stripping. The inspector verified that this event was the result of personnel error as described by the licensee in LER 251/84-06. The licensee instructed personnel installing the under-voltage modification to exercise extreme caution to prevent a recurrence of the event. The plant modification was completed without further incident. This item is closed.

(Closed) LER 251/78-08 Missing Containment Spray Orifices. A supplemental report was submitted in July 1979 which stated that all of Unit 4 orifices had been inspected and that the missing orifices in the Containment Spray system recirculation lines and in the branch lines to the Emergency Containment Filter Spray system had been installed prior to the unit start-up. The inspector reviewed the documentation. This item is closed, as is Followup Item 251/78-23-02.

8. Monthly and Annual Surveillance Observation (61726/61700)

The inspectors observed TS required surveillance testing and verified that testing was performed in accordance with adequate procedures; that test instrumentation was calibrated; that LCO were met; that test results met acceptance criteria requirements and were reviewed by personnel other than the individual directing the test; that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel; and that system restoration was adequate. For complete tests, the inspector verified that testing frequencies were met and tests were performed by qualified individuals.

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

- a. Rod Drop Timing
- b. Reactor Coolant System Overpressure Test
- c. Emergency Diesel Generator Periodic Test
- d. Engineered Safeguards Test with Loss of Offsite Power
- e. Rod Position Indicating System Calibration

On May 10, 1984, the licensee conducted a retest of Operating Procedure (OP) 4304.3: "A" and "B" Emergency Diesel Generator (EDG), Eight Hour Full Load Test and Load Rejection. This surveillance test was originally performed in April, 1984. An examination of the procedure at that time revealed it to be unsatisfactory. Deficiencies were addressed in Inspection Report 250, 251/84-14. On May 7, 1984, the licensee completed a revision to OP 4304.3

which greatly increased the type and amount of data recorded during the test. Completion of the updated data and record sheets would provide adequate information on which to judge the performance of the Emergency Diesel Generators. This closes violation (250/84-14-03).

During the performance of the eight hour load rejection test on May 10, 1984, the diesel operator recorded out-of-specification exhaust pyrometer temperatures on seven of the twenty cylinders. The operator reported the out-of-specification readings to the engineer in charge of the surveillance test. The engineer consulted with the diesel engine manufacturer's technical representatives who, together with the engineer, took independent readings on the exhaust pyrometers in question. They did not observe any out-of-specification readings. However, they did not investigate why the operator was obtaining some apparently erroneous readings. The surveillance procedure was completed without incident. Initial verbal reports from the engineering and technical representatives stated that the surveillance had been completed satisfactorily. A routine review of the test data sheets several hours after the surveillance revealed that the operator's out-of-specification data had not been resolved and that additional out-of-specification data was recorded after the supervisors were informed of the potential problem. Discussions with the operator did not resolve the discrepancy. An examination of the pyrometer selector switch showed it to be functioning normally. To resolve the issue, it was decided to again perform a two hour portion of the full load test to see if any out of specification readings would be obtained. The analog pyrometer temperature meter was replaced with a more accurate digital temperature indicator. Since the original out-of-specification readings were recorded shortly after loading the diesel to 2750 KW the two hour duration of the retest was considered satisfactory. The inspector observed the two hour retest and verified that all pyrometer temperature readings remained within specification.

9. Monthly and Refueling Maintenance Observations (62703)

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

The following items were considered during this review: LCO were met while components or systems were removed for service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were implemented; and fire prevention controls were implemented.

The following maintenance activities were observed/reviewed:

- a. Unit 4 main steam isolation valve solenoid replacement
- b. Unit 4 main steam isolation valve bypass valve repair
- c. Standby vital bus inverter repair
- d. Containment isolation valve from primary drain tank repair
- e. Pressurizer safety valve discharge temperature indication repair
- f. Steam dump to condenser arming signal repair

The circumstances surrounding the repair on May 27-28 of the primary drain tank discharge containment isolation valve FCV-4-4668A were reviewed. This valve was repaired by the licensee without supervisory personnel being aware that the repair activities constituted a breach of containment integrity. The corrective actions to be accomplished, as noted in a licensee memo from the Operations Superintendent to the Plant Manager, dated June 8, 1984, to assure that containment integrity valves are properly recognized will be reviewed as a followup item (250/84-18-02). Because the event was licensee identified with prompt, effective corrective action taken and the event would have been a level IV violation, this item will not be processed as a violation.

An unusual event was declared on Unit 4 on May 31, 1984, at 6:50 p.m., when the licensee discovered that the diaphragm on FCB-4-4658A was again leaking and therefore, the containment integrity LCO was entered. The licensee found that the air seals on the valve were also defective. The repair was carefully coordinated and both repairs (diaphragm, air seal) were made. The repairs were complete by 11:00 p.m. and the leakrate testing completed by 3:00 a.m. June 1, 1984. The reactor was in hot shutdown and had not been critical during the event. At 3:25 a.m., the reactor was taken critical. This event was conducted with aggressive management control and within the TS.

An unusual event was declared on Unit 3 on June 7, 1984, when the primary water system had to be isolated to repair the faulty valve (3-10-646). This valve is on the discharge of the Unit 3 primary water pumps. The repair was accomplished and the system was returned to service within the time allowed by TS.

No violations or deviations were identified in this section.

10. Operational Safety Verification (71707)

The inspector observed control room operations, reviewed applicable logs, conducted discussions with control room operators, observed shift turnovers, and confirmed operability of instrumentation. The inspectors verified the operability of selected emergency systems, reviewed tagout records, verified compliance with TS LCO and verified return to service of affected components.

The inspectors by observation and direct interviews verified that the physical security plan was being implemented in accordance with the station security plan. The inspectors verified that maintenance work orders had been submitted as required and that followup and prioritization of work was on-going. The inspectors also observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection control.

Tours of the Unit 4 containment, auxiliary, diesel, 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 on Units 3 and 4 to verify operability and proper valve alignment:

- a. Low head Safety Injection Unit 4
- b. Hi head Safety Injection Units 3 and 4
- c. Residual Heat Removal Unit 4
- d. Auxiliary Feedwater System Units 3 and 4

On May 12, 1984, a reactor startup was commenced on Unit 3. An estimated critical condition had been calculated to achieve criticality with control rod bank D at 100 steps. The reactor startup was stopped with control bank D at 150 steps because the reactor had not obtained criticality. An examination of Operating Procedure 1009.1, "Estimated Critical Conditions", revealed that the procedure contained a typographical error which caused the reactor operator to improperly calculate the change in reactivity necessary to achieve criticality. Consequently, only a small fraction of the dilution necessary to achieve criticality was made. The typographical error was corrected and a second estimated critical condition (ECC) calculation was made. It was determined that an additional 4000 gallon dilution would be necessary in order to achieve criticality with Control bank D at 100 steps.

An investigation begun on May 13, 1984, revealed the following: the procedure had been revised in April 1984, to improve its format. A proposed revision was sent to the Engineering Support Group for comment. These comments were incorporated in the procedure and a final version was typed and submitted to the Plant Nuclear Safety Committee for final approval on April 10, 1984. During the final typing of the procedure, a typographical error caused a plus (+) sign to be inserted in step 5.3. The pre-printed positive sign caused the person performing the calculations to believe the total reactivity change calculated in step 3.6 should be inserted in step 5.3 only as a positive number. Actually the value for total reactivity change from step 3.6 can be positive or negative and the sign convention must be maintained when inserting the value in step 5.3. The final version of the procedure was not reviewed by the Operations or Engineering Departments prior to submission to the Plant Nuclear Safety Committee for approval. The typographical error in question and two others which confused the terms "pcm reactivity" and "ppm boron concentration" were not detected until the aborted startup attempt on May 12, 1984.

On April 10, 1984, the licensee attempted to establish a procedure designed to accurately estimate ECC. The procedure that was established was not capable of achieving the desired objective. Failure to accurately establish a procedure for calculating estimated critical conditions is a violation. (250/84-18-07).

The licensee is currently pursuing two corrective actions: First, the proofreading of new or revised procedures was noted as deficient and is being corrected. Second, the STA has been instructed to calculate an independent ECC for review by the Shift Supervision.

11. Engineered Safety Features Walkdown (71710)

The inspectors verified the operability of Unit 4 Containment Spray and Low Head Safety Injection (SI) systems prior to startup and Unit 3 High Head SI system by performing a complete walkdown of the accessible portion of the systems. The following specifics were reviewed/observed as appropriate: that the licensee's system lineup procedures match plant drawings and the as-built configuration; that equipment conditions and items that might degrade performance (hangers and supports are operable, housekeeping, etc.) were identified; with assistance from licensee personnel that the interior of the breakers and electrical or instrumentation cabinets were inspected for debris, loose material, jumpers, evidence of rodents, etc.; that instrumentation was properly valved in and functioning and calibration dates were appropriate; and that valves were in proper position, power was available, and valves were locked as appropriate; and local and remote position indication was compared.

No violations or deviations were identified.

12. Plant Startup From Refueling (71711/72700)

The inspectors walked down the Unit 4 containment prior to start-up of the unit with plant management. The housekeeping/cleanliness was very good with few exceptions. During the 100 psi overpressure test, the inspector walked down the primary system and attached piping for leaks, independent of the licensee. The licensee identified and corrected all significant leaks prior to criticality.

The inspector walked down the Low Head Safety Injection system and accumulators to verify system operability. Also, the Emergency Power system alignment was verified to be operable.

Several startup tests were witnessed including:

- a. Control rod drive scram timing
- b. Rod position indication
- c. Incore/Excore calibration
- d. Isothermal temperature coefficient
- e. Control rod worth

The start-up progressed in an orderly, controlled manner and was witnessed by the inspectors.

No violations or deviations were identified.

13. Spent Fuel Pool Activities (86700)

On May 7, 1984, refueling activities in the Unit 4 spent fuel pool were observed. Fuel handling evolutions appeared to be executed in a safe manner. The inspector verified by direct observation that:

- a. Procedures relating to fuel handling activities were either in use or available for immediate reference.
- b. Communications were established between the control room, spent fuel pool and containment refueling stations.
- c. The spent fuel pool water level was being maintained above the minimum level established by regulatory and licensee administrative procedures.
- d. The spent fuel pool bridge crane had been successfully weight tested prior to the initial commencement of fuel movement.
- e. The spent fuel pool area radiation monitors had been verified operable prior to initial fuel movement and remained operable during all refueling evolutions.
- f. The spent fuel pool ventilation system was operating.

During the refueling evolution in the spent fuel pool and on several other inspections, discrepancies were observed. These were discussed with licensee management. Licensee management has begun the task of assessing the status of the spent fuel pool area to upgrade both the physical and the procedural aspects. The following discrepancies in the Unit 4 spent fuel pool area will be followed up as IFI 250, 251/84-18-06.

- a. Skimmer attachments to the spent fuel pool purification filter system were missing and plastic suction hoses for the skimmer were broken.
- b. The level of the spent fuel pool is routinely kept below the level of the purification system discharge return lines. Consequently the return purification flow results in a water splash as it enters the pool. The licensee had not determined whether this could result in the unnecessary degassification of the pool water, but is now keeping the level higher.
- c. The float level which controls the spent fuel pool low level annunciator in the control room routinely sticks, preventing the low level annunciator from actuating.

- d. Some valves associated with the filtration system are not identified with tags.
- e. The inflatable boot located around the spent fuel pool overhead crane access door is not fully installed and is not functional and the spent fuel pool roof leaks, allowing rain water to enter the building.
- f. The Unit 4 tracks and track hold down bolts upon which the bridge crane rides are heavily corroded and in a degraded condition.
- g. Air supply hoses used to operate the fuel transfer cart are not permanently installed and currently are run through a hole in an access door. The hoses lie on the floor and are not supported in any way.
- h. The shackle used to connect the fuel handling tool to the bridge crane hoist is not weight tested or controlled prior to use.
- i. The spent fuel pool ventilation damper isolation capability was not tested prior to initiating fuel movement and the dampers exhibit excessive corrosion around their support frames.
- j. No procedure or method exists to verify that the spent fuel pool ventilation system maintains the building at a negative pressure or is capable of 20,000 cfm air flow as stated in the FSAR Chapter 14.2.1.
- k. Radiation monitors in the ventilation discharge path are not verified to be operational prior to moving fuel in the pool as is stated in FSAR Chapter 14.2.1.
- l. Off Normal Operating Procedure (ONOP) 16008.2 does not address the desirability of sealing the spent fuel storage building during a casualty involving damage to a spent fuel element.
- m. Several contaminated items, such as a damaged control rod assembly, are stored in the pool by use of ropes. The items are suspended above the bottom of the pool along the edge of the pool. No mechanism exists to warn individuals not to inadvertently withdraw these items. No permanent long term storage location exists for these items.

While observing the fuel handling activities in the spent fuel pool, it was noticed that rags were stuffed in the loudspeaker located at the transfer cart operating station. The rags were promptly removed after the matter was brought to the licensee's attention. Additionally, five lights located on the walls inside the spent fuel building were nonfunctional. Personnel working in the area indicated that the lights were deenergized to prevent glare from interfering with the bridge crane operators view. An examination of the lighting power supply panels revealed that electrical power was available to the lights in question. The five lightbulbs were replaced and in each case the lights operated. The visibility in the work area was enhanced and no glare could be found.

14. Fire Drills (64704)

On May 4, 1984, the inspector observed an unannounced fire drill. The drill scenario assumed that a lightning strike created a six inch hole in the bottom of the diesel oil storage tank causing the tank to rapidly drain and the contents to burst into flames. Many discrepancies were noted. The response to the drill was deemed unsatisfactory by the licensee and the drill was terminated after approximately twenty minutes. Significant discrepancies were noted below.

- a. The initial announcement on the public address system was not concise. After the announcement several members of the fire brigade were unsure of the fire's location. The announcer stressed that the adjoining fossil units should disregard the drill which prompted some fire brigade members to believe that they should also disregard the drill.
- b. Fire brigade members were slow to respond to the scene of the fire. The first brigade members on the scene brought no fire fighting equipment other than self contained breathing equipment.
- c. Some members of the fire brigade were slow to enter the Radiation Control Area (RCA) because they erroneously believed that they had to follow routine sign-in procedures even when responding to the casualty.
- d. No system existed for distributing dosimeters to the fire brigade as they entered the RCA. Some members waited to obtain their regular dosimeter from its storage rack. Others entered the RCA without any dosimeter.
- e. The closest available fire hose was not used to combat the casualty. This fire hose was located outside the RCA fence boundary but its spray could have reached the fire area.
- f. Fire hoses inside the RCA were not connected in an expeditious manner. There was no visible urgency in the actions of those fire brigade members assembling the fire hoses.
- g. The closest fire hose inside the RCA was located several hundred feet from the diesel oil storage tank.
- h. Aqueous foam was not brought to the scene of the fire.
- i. No action was taken to protect the two emergency diesel generators located near the fire site. The water curtain spray system which protects the east wall of the diesel generator building was not utilized.
- j. No attempt was made to evacuate surrounding buildings.
- k. No member of the security force responded to the scene of the fire.

After the drill a critique was held and the above discrepancies were discussed. None of the members of the fire brigade had ever responded to a drill at the diesel oil storage tank before. The members of the fire brigade were informed that the drill was considered to be unsatisfactory by licensee's fire protection supervisor. They were told that the drill would be repeated later that same day.

The drill was repeated approximately four hours later. The same drill scenario was used and the same five fire brigade members responded. The discrepancies noted in the earlier drill were no longer apparent. It is believed that the dramatic improvement in performance was due to a more aggressive attitude taken by the fire brigade members coupled with a familiarity with the drill scenario. The second drill was considered satisfactory by both the licensee and the inspector.

Following the drills the absence of fire pre-plans for use and training by fire brigade members was followed up. The licensee contracted to have fire pre-plans written in the spring of 1983 and the pre-plans were delivered in August 1983. At that time the licensee stated to an NRC regional fire protection inspector that the fire pre-plans would be implemented in the near future. The fire pre-plans have yet to be implemented. The pre-plans, which are referenced in 10 CFR 50 Appendix R, Section III.K.12, are not required to be in use at the site. However, the licensee committed to implementing the fire pre-plans prior to July 1, 1984. This is a followup item (250/84-18-05).

15. Plant Trips (93702)

At 0120 on June 4, 1984, the 4A main feedwater pump tripped due to events following the start of a heater drain pump. This caused a turbine runback to which the operators responded, but the unit tripped. The exact sequence of events was not recorded. The inspector arrived at 0204 in the control room following the licensee's call and found that unit stable with the licensee staff collecting and documenting data and initiating investigations into equipment malfunctions.

Initially, the operators responded to an indication of a pressurizer safety valve lifting early; however, other indications showed that, if it had lifted, it was for short duration, then it reseated. Since, the licensee did not know the exact cause of the trip, possible scenarios were constructed and the initiating potentials investigated. The main problems are listed and have been corrected.

- a. Pressurized relief valve blowdown pipe temperature indication reading, high - corrected by repair of a broken resistor.
- b. Pressurized sprays did not respond in a timely manner and pressure rose to 2326 psig - operators are to assure that the valves are cycled for free movement. A study is being initiated to assure the spray valves are set properly. This closes IFI 50-251/84-21-03.

- c. Steam dumps to condenser did not arm. The solenoid valve was shorted and there was a wiring error. The evaluation closes IFI 50-251/84-21-06 but the cause of the wiring error is followup item (251/84-18-01).
- d. Several secondary level controls and valves were not operating in automatic - the licensee repaired leaks and recalibrated and replaced limit switches.
- e. Computer generated sequence of events not complete - operations was assigned the tasks of assuring daily that alarms are functional and replacing the slower printer with a faster version. This closes IFI 50-251/84-21-05.
- f. Turbine runback reset from 70% to 60% - complete. This closes IFI 50-251/84-21-02.

An inspector from the region came to assist in the inspection of the causes of the reactor trip and will have separate report no. 50-251/84-21.

16. Independent Inspection Effort (92706)

The inspectors routinely attended meetings with licensee management and shift turnovers between shift supervisors, shift foreman and licensed operators during the reporting period. These meetings and discussions provided a daily status of plant operating and testing activities in progress as well as discussion of significant problems or incidents.

No violations or deviations were identified.

17. Regional Office Review of Open Items

The following items were evaluated by the Reactor Safety, Radiation Safety and Safeguards, and Reactor Projects regional staff. Based on this review and the results of the latest Resident and Region based inspection activities in the affected functional areas, the following items (Inspector Followup, IFI; Deviations, Dev; licensee event reports, LER; Violations, SL x; Unresolved Items, UNR) were determined to require no additional specific followup action and are closed:

TURKEY POINT - UNIT 3

IFI 78-12-06	10 CFR 21 Administrative Controls Do Not Detail Record Keeping Requirements
SL5 81-29-01	Identification of Safety Related Boundaries
IFI 81-31-04	Licensee to Develop System to Mark Records Corrected Because of QC Review

UNR 82-06-01	Blocking of Heat Tracing Recorder Switches
UNR 82-30-03	Review Supplement to LER 80-12 to Evaluate Performance of Black Goop on Containment Penetration During a LOCA
IFI 82-34-01	Provide A Formalized Method of Tracking Procedural and Programmatic Changes Associated with TS Changes
IFI 77-25-03	Licensee to Review QA Plan to Assure Audit of Radiological Laboratory
IFI 78-16-03	Review of Adequacy of Analytical Procedure and Techniques by Qualified Radiochemists
IFI 78-22-02	Review In-Dilution Test Program Which Infuses Water From Card Sound Into The Cooling Canal System
IFI 78-24-01	Licensee to Correct Drill Deficiencies Site Fire Drill to Resolve Several Unacceptable Items
IFI 81-04-02	Failure to Sample Milk From Milk Producing Animals Within 15 Miles.
SL5 79-07-01	Failure to Certify or Recertify Personnel Performing Leak Testing As Required By OP-9.2 Which Implements FPL-TQAR Sec. 9.0, Which Implements Criticality IX Appendix B, 10 CFR 50
IFI 79-09-03	LER On Airlock Leakage During ILRT
IFI 82-09-01	Revise Refueling Procedure to Include QC Hold to Verify Cleanliness Prior to Reactor Vessel Head Lift
DEV 80-19-02	Fire Protection Administrative Procedures Do Not Meet NRC Guidelines
UNR 80-29-01	Tendon Surveillance Procedure Acceptance Criteria
UNR 80-29-02	Tendon Voids
IFI 80-30-01	Items to Support Emergency Plan
IFI 81-24-70	Review Emergency Procedures Annually (5.5.3)
IFI 81-24-72	Followup Corporate Audit Reports (5.5.4)
IFI 82-11-01	Completing Installation of Automatic Dialer, Performing Three Call-In Drills and Submitting Results to Region II
IFI 82-11-02	Revising the REP to Reflect Elimination of the Near Site Inc.

IFI 82-11-03	Upgrading the SCBA Provisions
IFI 82-11-04	Assess the Need for SCBA Equipment At The TSC
IFI 82-11-05	Improving the Maintenance of the Chart Recorder of Meteorological Data
IFI 82-11-06	Revising the REP To Accurately Describe the Meteorological Data Output
IFI 82-13-06	Provide Training In Use of Communications Equipment and Provide Backup Resources
IFI 82-13-10	Improve Post Accident Sampling and Analysis Documentation And Reporting Procedures
IFI 82-13-11	Provide Ready Access To Substation Control Room Lockers Containing Offsite Monitoring Equipment
IFI 82-13-12	Provide for Decontamination Control Measures At The Offsite Assembly Area
IFI 82-13-14	Need For Additional Radiological Protection Training For Hospital Personnel
IFI 80-01-01	Availability of ISI Programs and Data in QA Vault
IFI 80-18-01	Overstress In RTD Bypass Loop Piping (Licensee Identified Item)
UNR 81-14-01	Management Attention to Corrective Action in Welding
UNR 81-29-02	Repair and Replacement Requirements of ASME Section XI
IFI 82-07-06	Safety-Related Valve Identification
UNR 82-12-01	Diesel Generator Exhaust Classified Not Safety Related
UNR 82-12-02	Seismic Response Spectra for Pressurizer Spray Piping
UNR 82-23-01	Pipe Support Analysis Questions
IFI 79-30-03	IE Bulletin 79-18 Audibility Problems Encountered on Evaluation of Personnel Form High Noise Areas. Licensee Actions Not Completed
IFI 80-30-01	Hospital (Bapist) Items on Training and Instruments to Support Emergency Plan
IFI 81-24-02	Attend Professional Meetings and Seminars As Part Of Training Program For Emergency Planners (1.0)

IFI	81-24-04	Inconsistencies in Plan and Procedures Regarding Retraining Schedules (3.1)
IFI	81-24-08	Approved Formal Lesson Plan Format to be Developed and Implemented (3.1)
IFI	81-24-16	Instructions for IEOF Personnel (4.1.1.4)
IFI	81-24-21	Alternate Assembly Area (4.1.2.1)
IFI	81-24-24	Administration of KI Program (4.1.2.2)
IFI	81-24-26	Liquid Radioactive Waste At Florida City Substation (4.1.2.3)
IFI	81-24-28	Plans for Expanded Support Facilities (4.1.3)
IFI	81-24-37	Relocate Met. System Recorder (4.2.1.4)
IFI	81-24-41	Location and Appropriate Equipment And Supplies Be Designated For Reserve Storage (4.2.5)
IFI	81-24-59	Exposure Doses In Plan Are Inconsistent (5.4.3.1)
IFI	81-24-60	Establish Thyroid Dose Guidelines (5.4.3.1)
IFI	81-24-61	Mark Evacuation Routes (5.4.3.2)
IFI	81-24-67	Discrepancies in Onsite Drill Program (5.5.2)
IFI	79-01-01	Licensee To Implement Temporary Procedure System by April 1, 1979
IFI	78-PC-08	Spare Containment Pipe Penetrations
UNR	78-14-01	Segregation of Nonconforming Measuring Tools in Machine Shop Tool Room
IFI	78-18-01	Blocking SI Initiation During Plant Cooldown
TURKEY POINT - UNIT 4		
UNR	77-04-03	No Operability Tests Are Periodically Performed on Heat And Smoke Detectors. Detail II.5.C - 77-25-0
UNR	80-19-01	As-Built Cable Ident for SV-4-310A and B and Indicating SWS for Assoc Pneumatic Valves Do Not Agree With Plans
IFI	80-19-02	Identification of MFR Catalog Number for SV-4-310A and B

DEV	80-19-03	Corrosion of Terminal Block Area in Inst HSG For LS-4-1570 and 1571
DEV	80-20-02	Fire Protection Administrative Procedures Do Not Meet NRC Guidelines
UNR	80-28-01	Tendon Surveillance Procedure Acceptance Criteria
IFI	80-28-02	Investigation of Grease Leakage From Containment Building Tendon Voids
UNR	81-11-01	Combustible Control Room Ceiling
IFI	81-11-02	Fire Detectors Not Installed At The Ceiling Level of 4160V 3B and 4B Switchgear Rooms
UNR	81-11-03	Fire Dampers Not Provided in the West Wall Openings of 460V Switchgear Rooms
IFI	78-12-06	10 CFR 21 Admin Controls Do Not Detail Record Keeping Requirements
UNR	78-14-01	Segregation of Nonconforming Measuring Tools in Machine Shop Tool Room
IFI	81-04-02	Failure To Sample Milk From Milk Producing Animals Within 15 Mile Radius of Plant Site
IFI	79-30-03	Complete Action on 79-BU-18
IFI	80-09-01	Operability Evaluation Upon Receipt of New Stress Analysis, Paragraph 6 of INSP Report
IFI	80-18-02	Overstress In RTD Bypass Loop Piping. (Licensee Identified Item)
UNR	81-14-01	Management Attention To Corrective Action in Welding Control Areas.
IFI	81-23-01	Replacement of Valve No. 4-132A
SL5	81-29-01	Lack of Clear Identification of Safety Related Boundaries
UNR	81-29-02	Repair and Replacement Requirements of ASME Section XI
UNR	82-12-01	Diesel Generator Exhaust Classified Not Safety Related
UNR	82-12-02	Seismic Response Spectra For Pressurizer Spray Piping
UNR	82-23-01	Pipe Support Analysis Questions

UNR 82-38-02	Unavailable Testing Records
IFI 77-01-05	Modification to Charging Lines Not Reviewed by PNSC. Details II-4.
IFI 78-20-05	Evaluate Discrepancies Noted During Plant Tour
DEV 79-07-01	Failure To Certify or Recertify Personnel Performing Leak Testing.
LER 81-11	High Head Safety Injection System, Boron Injection Tank Bit Flow Path Blocked (TS 3.4.1.A.7)
LER 81-12	During Safeguard System Test, The 4A 4160 Volt Bus Stripped But Was Not Sensed By Bus Clear Relay
LER 81-16	Condensate Storage Tank Contained Less Water Than Required by Specification
LER 81-17	Boron Injection Neat Trace Circuit In Time Interval Specified
IFI 74-10-03	Replace Charging Line Check Valve No. 4-312A (77-16-0)
IFI 82-11-02	Revising The REP To Reflect Elimination of the Nearsite ENC
IFI 82-11-03	Upgrading the SCBA Provisions
IFI 82-11-04	Assess the Need for SCBA Equipment at the TSC
IFI 82-11-05	Improving the Maintenance Of the Chart Recorder for Meteorological Data
IFI 82-11-06	Revising the REP to Accurately Describe The Meteorological Data Output
IFI 82-13-06	Provide Training In Use Of Communications Equipment and Provide Backup Resources
IFI 82-13-10	Improve Post Accident Sampling and Analysis Documentation And Reporting Procedures
IFI 82-13-11	Provide Ready Access To Substation Control Room Lockers Containing Offsite Monitoring Equipment
IFI 82-13-12	Provide For Decontamination Control Measures At The Offsite Assembly Area
IFI 82-13-14	Need For Additional Radiological Protection Training for Hospital Personnel

IFI	81-24-02	Attend Professional Meetings and Seminars as Part of Training Program for Emergency Planners (1.0)
IFI	81-24-04	Inconsistencies In Plan and Procedures Regarding Retraining Schedules (3.1)
IFI	81-04-02	Failure to Sample Milk From Milk Producing Animals Within 15 Mile Radius of Plant Site
IFI	77-25-03	Evaluation of Radiological Monitoring Required by TS-4.12 Licensee to Review QA Plan to Assure Audit of Radiological Laboratory
IFI	78-16-03	Review of Adequacy of Analytical Procedures and Techniques by Qualified Radiochemists
IFI	78-22-02	Review In-Dilution Test Program Which Infuses Water From Card Sound Into the Cooling Canal System
UNR	78-24-01	Licensee to Conduct Onsite General Emergency Exercise and Onsite Fire Drill to Resolve Several Unacceptable Items Identified During 10-78 Drill
IFI	81-24-08	Approved Formal Lesson Plan Format Be Developed and Implemented (3.1)
IFI	81-24-16	Instructions for IEOF Personnel (4.1.1.4)
IFI	81-24-21	Alternate Assembly Area (4.1.2.1)
IFI	81-24-24	Admin Of KI Program (4.1.2.2)
IFI	81-24-26	Liquid Radioactive Waste At Florida City Substation (4.1.2.3)
IFI	81-24-28	Plans for Expanded Support Facilities (4.1.3)
IFI	81-24-37	Relocate Met. System Recorder (4.2.1.4)
IFI	81-24-41	Location and Appropriate Equipment and Supplies Be Designated For Reserve Storage (4.2.5)
DEF	81-24-46	Procedures and Techniques for Plume Monitoring Not Discussed In HP-91 (5.4.2)
IFI	81-24-59	Exposure Doses In Plan Are Inconsistent (5.4.3.1)
IFI	81-24-60	Establish Thyroid Dose Guidelines (5.4.3.1)
IFI	81-24-61	Mark Evacuation Routes (5.4.3.2)
IFI	81-24-67	Discrepancies in Onsite Drill Program (5.5.2)

IFI 81-24-70	Review Emergency Procedures Annually (5.5.3)
IFI 81-24-72	Followup Corporate Audit Reports (5.5.4)
IFI 82-11-01	Completing Installation of Automatic Dialer, Performing Three Call-In Drills and Submitting Results to Region II
DEV 80-03-01	Failure to Establish A Fire Protection QA Program
IFI 80-BP-01	Followup of Licensee Review of Electric Power System Adequacy as Per Bryan Memo of March 6, 1980
IFI 81-31-04	Licensee to Develop System to Mark Records Corrected Because of QC Review