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SUBJECT: Provides update to NRC on items completed by util at plant during Cycle 15 refueling outage.

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L-95-307

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Re: Turkey Point Unit 3
Docket No. 50-250
Activities Completed During Unit 3 Cycle 15 Refueling Outage

The purpose of this letter is to provide an update to the NRC on items completed by Florida Power & Light Company (FPL) at Turkey Point Unit 3 during the Cycle 15 refueling outage.

FPL conducted a refueling outage of Turkey Point Unit 3 from September 4, 1995, to October 8, 1995. Regulatory activities and items of regulatory interest for which action was taken during this refueling outage are summarized in the attached.

Should there be any questions concerning this information, please contact us.

Very truly yours,

Robert J. Hovey
Vice President
Turkey Point Plant

JAH

Attachment

cc: S. D. Ebnetter, Regional Administrator, Region II, USNRC
T. P. Johnson, Senior Resident Inspector, USNRC, Turkey Point

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ACTIVITIES COMPLETED DURING TURKEY POINT UNIT 3 CYCLE 15 REFUELING OUTAGE

NRC Generic Letter 93-04: "Rod Control System Failure and Withdrawal of Rod Control Cluster Assemblies" (TAC Numbers M86873 and M86874)

NRC Generic Letter (GL) 93-04, "Rod Control System Failure and Withdrawal of Rod Control Cluster Assemblies," dated June 21, 1993, requested that licensees address short and long term activities and implement corrective actions addressing rod control current timing order.

By letter L-93-186, dated August 4, 1993, FPL responded to the requested information of GL 93-04 by addressing the licensing basis of the plant with regard to a failure in the rod control system, and specified the type of short and long term corrective actions that have been taken or are planned for resolution of this issue.

By letter dated November 15, 1993, the NRC requested additional information (RAI) to support the review of FPL's response to GL 93-04 as provided in L-93-186. FPL responded to the RAI by letter L-93-319, dated December 28, 1993.

By letter dated December 7, 1994, the NRC requested FPL to commit to implementing the current order timing modification and the new surveillance test recommended by the Westinghouse Owners' Group. In response to this request, FPL responded by letter L-94-328, dated December 28, 1994. FPL committed in L-94-328 to implement the recommended modification during the next refueling outage for each unit (i.e., for Unit 3 September 1995 and for Unit 4 March 1996). The new current order surveillance test is an aspect of the modification and is implemented during the refueling outages. The NRC confirmed this commitment in a letter dated January 12, 1995 and requested that FPL inform the staff of any changes to the implementation and surveillance testing schedule.

The modification of the rod control current order timing was completed as Plant Change Modification (PC/M) 94-111 on Turkey Point Unit 3 on October 6, 1995. Ongoing periodic surveillance of the Control Rod Drive Mechanism (CRDM) current order timing will be conducted on a refueling outage basis. The periodic surveillance was performed during the Unit 3 refueling outage.



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Licensee Event Report 50-250-94-005: Design Defect in Safeguards
Bus Sequencer Logic Timing Places Both Units Outside the Design
Basis

On November 3, 1994, Turkey Point Unit 3 was in Mode 1 at 100% power, and Unit 4 was in Mode 5 during a refueling outage. During the Unit 4 Integrated Safeguards Test, the 3A sequencer failed to respond to the Unit 4 Safety Injection signal. A defect was found in the sequencer software logic which, for a limited period of time, could inhibit any or all of the four sequencers from responding to specific valid signals. This defect only affects the sequencers during manual or automatic testing. FPL submitted Licensee Event Reports (LER) 94-005-00, 94-005-01 and 94-005-02. FPL committed in LERs 94-005-01 and 94-005-02 to implement a design modification to eliminate the identified problem during the next refueling outage for each unit.

During this Unit 3 refueling outage, hardware and software modifications were completed to eliminate the cause of the Sequencer 3A failure. These hardware and software changes involved eliminating the sequencer auto test feature. This involved the replacement of the sequencer test selector switch and changes to the sequencer annunciator. Minor hardware and software changes were also implemented as a result of eliminating the auto test feature to address sequencer failure modes previously detected by auto test.

NRC Bulletin 89-01, "Failure of Westinghouse Steam Generator Tube
Mechanical Plugs"

Inservice inspection and plugging of the Unit 3 steam generator tubes was completed by September 19, 1995. The inspection involved the use of full-length bobbin coil inspections on all active tubes in all three steam generators. Motorized rotating pancake coil (MRPC) examinations were also conducted to clarify selected bobbin coil indications. Due to industry concerns related to circumferential cracking, additional MRPC examinations were conducted for 20% of dented support plate intersections and all overexpansions at the tube expansion transition to the hot leg of the 3B steam generator. In addition, all hot leg Alloy 600 Westinghouse mechanical tube plugs were replaced with ABB/Combustion Engineering Alloy 690 plugs. The Alloy 600 plugs were replaced in accordance with NRC Bulletin 89-01, "Failure of Westinghouse Steam Generator Tube Mechanical Plugs," and as recommended by Westinghouse WCAP-12245, Revision 3, Addendum 4 to the Steam Generator Tube Plug Integrity Summary Report, May 1995.



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Outage examinations also resulted in plugging two additional tubes in the 3B steam generator due to anti-vibration bar wear, and damage from foreign objects which occurred early in the life of the steam generator. No new degradation or circumferential cracking was detected. A total of thirty-three hot leg Alloy 600 Westinghouse mechanical tube plugs were replaced with ABB/Combustion Engineering tube plugs fabricated from Inconel Alloy 690. These plugs were replaced due to end of service life predictions by Westinghouse. Visual inspections of these plugs prior to replacement showed no evidence of leakage.

NRC Inspection Report 50-250/94-17 and 50-251/94-17: Residents Monthly Exit

By letter dated September 16, 1994, the NRC transmitted the Residents Monthly report for the period of July 31 through August 27, 1994. The inspection report addressed an event which occurred during a periodic containment air lock test on Unit 3. The emergency escape hatch door linkage malfunctioned, which resulted in the inoperability of the inner door. FPL committed to review the design of the interlock and key lock arrangement of the emergency containment air lock and implement design changes, as appropriate. During this Unit 3 refueling outage the interlock and key lock arrangement of the emergency escape and personnel air locks were modified in accordance with PC/M 94-097. Unit 4 modifications will be completed in the next refueling outage, scheduled for March 1996.

Generic Letter 92-08; "Thermo-Lag 330-1 Fire Barriers"

By letter L-95-200, dated July 13, 1995, FPL committed to perform a walkdown of the raceways in the containments during the next scheduled refueling outages and evaluate the continued requirements for a raceway fire barrier/radiant energy shield. In response to this commitment, FPL conducted the walkdown of the Unit 3 containment. The Unit 4 walkdown is planned for the next refueling outage currently scheduled to begin March 1996. The evaluation will be completed following the Unit 4 outage.

Intake Structure

By letter L-93-153, dated June 23, 1993, FPL provided the staff with a status update of the six year plan developed in December 1990 to ensure that the Turkey Point Units 3 and 4 Intake Structure can perform its function under all design basis conditions including seismic events for the duration of the remaining plant life. The plan included the installation of

reinforcing beams under the Intake Cooling Water (ICW) pump support beams, various modifications to features above the deck that will significantly reduce the rate of intrusion of chloride into the ICW pump support beams, and performance of regular inspections of the bays, including visual inspection of the bay walls. In addition, L-93-153 indicated that FPL would implement a procedure for inspection and testing of the walls to confirm their structural integrity for the duration of the remaining plant life.

As indicated in previous correspondence, all modifications to features above the deck had been completed, and reinforcing beams have been installed under 3 of 4 deck support beams in Unit 4, and 3 of 4 support beams in Unit 3. During the Unit 3 Cycle 15 refueling outage, a steel reinforcement beam was installed under the deck beam supporting Screen Wash Pumps 3P14 and P14 in Circulating Water Pump (CWP) bay 3B2. In addition, inspections and testing of the structural concrete walls in the 3B2 CWP bay were performed. This completes all reinforcing beam work for Unit 3.

Corrosion rate tests were performed utilizing linear polarization resistance technology to determine the rate of corrosion of the reinforcing steel at various locations within the intake bay walls. The tests concluded that corrosion of the reinforcing steel in the 3B2 intake bay walls may be occurring, but at a very low rate. The average corrosion rate was measured to be less than 1 mil per year or 0.45 microamperes per square centimeter. Based on this evaluation the intake structures will perform their intended design function for the currently licensed plant life. Continued monitoring will verify stable corrosion rates per JPN-PTN-SECS-95-056.

Licensee Event Report 95-004-00: Manual Reactor Trip Due to Failed Rod Control Power Supplies

On April 7, 1995, Turkey Point Unit 3 was being shutdown to investigate recurring non-urgent failure alarms from the redundant rod control power supplies. Unit 3 was subcritical in Mode 2 with reactor power at 1×10^{-9} amps decreasing. As soon as Control Bank C rods were demanded to drive in, an Urgent Failure Alarm was received. The urgent failure was verified valid, which precluded continued normal rod insertion in the affected rod drive cabinet. The reactor was manually tripped to complete the shutdown. The cause of the Urgent Failure Alarm was the failure of power supplies PS-3 and PS-4 in the 2AC Rod Control Power Cabinet. In response to this event FPL submitted Licensee Event Report (LER) 95-004-00. FPL committed to replace all PS-4 power supplies with more reliable power supplies during the next outage.

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of sufficient duration. (The PS-3 power supplies were replaced with more reliable power supplies immediately following the event.) During this Unit 3 refueling outage the existing PS-4 Lambda power supplies were replaced with more reliable Abbott power supplies. The work was completed on September 28, 1995.

4KV Bus 3C Protective Relay Relocation

On September 23, 1994, Unit 4 tripped from 100% rated power. The cause of the trip was jarring of a differential relay during maintenance. The relay was mounted on the cubicle door and was jarred when the door was closed. This resulted in a 4C 4KV Bus lockout and subsequent reactor trip. As a result of this event FPL submitted Licensee Event Report (LER) 94-004-00. FPL committed in LER 94-004-00 to relocate the affected relays off the breaker cubicle doors.

The modification to relocate the protective relays on the 3C 4KV Bus was completed via Plant Change Modification (PC/M) 94-139 on Turkey Point Unit 3, on October 2, 1995.