



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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March 20, 2000

Florida Power and Light Company
ATTN: Mr. T. F. Plunkett
President - Nuclear Division
P. O. Box 14000
Juno Beach, FL 33408-0420

SUBJECT: NRC INTEGRATED INSPECTION REPORT 50-250/00-01, 50-251/00-01

Dear Mr. Plunkett:

On February 19, 2000, the NRC completed an inspection at your Turkey Point 3 and 4 reactor facilities. The enclosed report presents the results of that inspection.

During the inspection period, your conduct of activities was generally characterized by safety conscious operations. Within the scope of the inspection, violations or deviations were not identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be placed in the NRC Public Document Room (PDR).

Sincerely,

/RA/

Leonard D. Wert, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket Nos. 50-250, 50-251
License Nos. DPR-31, DPR-41

Enclosure: Inspection Report 50-250/00-01, 50-251/00-01

cc w/encl: (See page 2)

FPL

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cc w/encl:
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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-250, 50-251
License Nos: DPR-31, DPR-41

Report Nos: 50-250/00-01, 50-251/00-01

Licensee: Florida Power and Light Company

Facility: Turkey Point Nuclear Plant, Units 3 & 4

Location: 9760 S. W. 344 Street
Florida City, FL 33035

Dates: January 9 - February 19, 2000

Inspectors: C. Patterson, Senior Resident Inspector
R. Reyes, Resident Inspector
M. Sykes, Licensing Examiner (Section O5)
R. Baldwin, Licensing Examiner (Section O5)
G. Kuzo, Senior Radiation Specialist (Sections R1.1 - R1.3, R7.1)
W. Sartor, Emergency Specialist (Section P1)
T. Ross, Senior Resident Inspector, St. Lucie (Sections O7.1-O7.5)
G. Wiseman, Fire Protection Specialist (Sections F1.1-F7.1)

Approved by: L. Wert, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

EXECUTIVE SUMMARY

Turkey Point Nuclear Plant, Units 3 & 4 NRC Inspection Report 50-250/00-01, 50-251/00-01

This integrated inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a 6-week period of resident inspection; in addition, it includes the results of inspections by a regional radiation specialist, a regional emergency preparedness inspector, a regional fire protection inspector, and two operator licensing examiners. Additionally, a corrective action program inspection was completed.

Operations

- Control room supervisors acted promptly and conservatively when they initiated a manual reactor trip because of a feedwater control valve problem. Engineering review of the failed valve, Maintenance Rule implications, and the temporary modification to the valve were appropriately implemented. (Section O1.2)
- Administration of the simulator examinations was satisfactory. The scenarios observed were challenging and adequate training evaluation tools. The facility evaluators were objectively critical of crew performance and thorough in noting crew and individual operator performance deficiencies. Evaluator documentation of performance deficiencies was satisfactory. (Section O5.1)
- The biennial written examination Sections A and B were adequate. The questions met the guidelines of NUREG-1021 as specified in ADM 315, "Licensed Operator Continuing Training Program." Examination questions were operationally oriented and adequately tested operator knowledge. (Section O5.3)
- The corrective action program was effective in identifying, dispositioning, and correcting plant problems. (Section O7.1)
- Licensee self-assessment and audit activities to evaluate effectiveness of the corrective action program were thorough, provided critical insights, and elicited corrective actions that have resulted in program improvements. The site quality department continued to actively monitor corrective action program effectiveness on a frequent basis. (Section O7.2)
- The condition report corrective action backlog of Plant Manager's Action Items received strong management attention and has been steadily trending down since May 1999. The number of action items greater than one year old was reduced to zero by the end of 1999. (Section O7.3)
- Condition report event codes were being actively trended every quarter. Identified trends were well supported by existing data. Condition reports were consistently issued for all adverse trends. Although some problems were noted with trend program effectiveness, the licensee is developing corrective actions to improve performance in this area. (Section O7.4)

- Goal setting, monitoring, generic review, and associated corrective actions for Maintenance Rule components placed in a(1) status were consistent with program requirements. (Section O7.5)

Maintenance

- Several Foreign Material Exclusion administrative control issues in the spent fuel pool areas relating to boundary controls and equipment accountability are being addressed by the licensee. Interim corrective actions have been implemented pending completion on review of these issues. (Section M1.2)
- The Unit 3B EDG radiator replacement was satisfactorily completed within the extended allowed outage time. Engineering support was provided during the radiator replacement and supported timely resolutions of issues. (Section M2.1)

Engineering

- Corrective actions for a failed automatic isolation valve in the intake cooling system were effective. Compensatory measures were established using a dedicated operator for manual isolation. The valve was returned to an operable status within the Technical Specification allowed period. (Section E2.2)

Plant Support

- Controls for transient combustibles were being adequately implemented. Fire brigade equipment, pre-fire strategies, and safe shutdown emergency lighting were available and adequately maintained. Overall fire brigade response and performance was satisfactory during a fire drill. (Sections F1.1, F2.1, 2.2, 3.1, and 5.1).
- The licensee's self assessment activities, including a recently completed overall assessment of the fire protection program, were comprehensive. Corrective actions were initiated to address identified issues. (Section F7.1)
- Observed radiological controls and monitoring for routine operations and the Unit 4 short notice outage activities were in accordance with applicable regulatory requirements. Occupational worker doses were below regulatory limits. (Section R1.1).
- Occupational worker doses were within regulatory limits for calendar year 1999 and year-to-date 2000 and cumulative site radiological expenditures continued to decrease. Implementation of the licensee's "As Low As Reasonably Achievable program" was in accordance with approved procedures. (Section R1.2).
- Operations staff were knowledgeable and proficient in conducting a January 26, 2000 Waste Monitor Tank "A" release. Effluent concentrations and offsite doses were within regulatory limits and established design criteria. (Section R1.3).
- The licensee's emergency preparedness program was being maintained in a state of full operational readiness. Changes to the program since the December 1997 inspection

were consistent with commitments and NRC requirements, and did not decrease the licensee's overall state of preparedness. (Section P1.1).

Report Details

Summary of Plant Status

Unit 3 operated at full power this period and has been online since November 18, 1999.

Unit 4 operated at full power until a manual trip on January 24, 2000, after problems with a feedwater control valve. Unit 4 had been online since April 18, 1999. The unit returned to full power on January 27, 2000, and remained at that level for the remainder of the period.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

Using Inspection Procedure 71707, the inspectors conducted frequent reviews of ongoing plant operations. In general, the conduct of operations was professional and safety-conscious; specific events and noteworthy observations are detailed in the sections below. The inspectors routinely reviewed the control room operations narrative logbooks. The log entries were checked against procedure O-ADM 204, Operations Narrative Logbooks. Several equipment problems, such as the Component Cooling Water (CCW) vacuum breaker valve failure discussed in this report, were reviewed. Overall, the entries accurately described the equipment problems.

O1.2 Unit 4 Manual Reactor Trip

a. Inspection Scope (71707)

The inspectors reviewed the activities relating to the Unit 4 manual reactor trip. The inspectors reviewed the transient with the Nuclear Plant Supervisor that was in the control room during the trip. Additionally, the inspectors reviewed the temporary modification on feedwater regulating valve FCV-478; walked down the valve and the repaired transmitter sensing lines; attended the Plant Nuclear Safety Committee review meetings; and verified selected corrective actions had been completed prior to startup as described in the trip Condition Report (CR).

b. Observations and Findings

On January 16, 2000, the 4A steam generator (S/G) level deviation alarm was received. Operations found that flow through FCV-478 was not maintaining a constant S/G level and blowdown was reduced to maintain level. The licensee wrote CR 00-0066 to address that issue. Early on January 24, 2000, FCV-478 partially closed and caused a level deviation in the 4A steam generator. An event response team was formed and later that morning Unit 4 power was reduced to 95% to initiate troubleshooting.

Shortly after reducing power, FCV-478 went full open and caused level deviations on the 4B and 4C S/Gs as well. Operators put FCV-478 in the manual mode to reduce the level fluctuations on the steam generators. The licensee made a decision to reduce power using a fast load reduction procedure in order to isolate the valve for

maintenance. However, prior to decreasing power, operators noted level oscillations on all three S/Gs due to movement of FCV-478. Control room supervisors ordered the reactor operator to trip the unit. No significant equipment or operational issues were encountered.

Upon disassembling FCV-478, the licensee found that the valve cage had disengaged from the valve body. The upper threads of the cage had been destroyed and the lower threads only had limited amount of engagement. The valve cage is usually not replaced during preventive maintenance (PM) of the valve internals. The licensee's root cause concluded that no torque specification existed in the PM procedure to ensure that the valve cage was adequately fastened to the valve body. The problem was addressed by implementation of a temporary modification on the valve internals.

The inspectors reviewed the Maintenance Rule aspects of the FCV-478 failure with engineering. The failure was considered to be a maintenance preventable functional failure. The failure could have been prevented had a standardized maintenance practice been incorporated to ensure the cage was adequately torqued to the valve.

c. Conclusions

Control room supervisors acted promptly and conservatively when they initiated a manual reactor trip because of a feedwater control valve problem. Engineering review of the failed valve, Maintenance Rule implications, and the temporary design modification to the valve were appropriately implemented.

O5 Licensed Operator Requalification Program Evaluation

The inspectors conducted a routine, announced inspection of the licensed operator requalification program during the period January 18-21, 2000. Specific areas of review included simulator examinations, Job Performance Measures (JPMs), written examinations, and operator remedial training. The licensee developed and implemented examination was developed in accordance with NUREG 1021 as specified in licensee procedure ADM-315, "Licensed Operator Continuing Training Program."

O5.1 Simulator Examinations (71001)

a. Inspection Scope

The inspectors observed the licensee's conduct of annual simulator examinations on January 18, 2000. The training department staff evaluated three operating crews, each consisting of four licensed operators. The inspectors evaluated licensed operator performance during the scenarios and assessed evaluator techniques to measure licensee continuing training program effectiveness in conducting operator requalification evaluations in accordance with 10 CFR 55.59, "Requalification."

b. Observations and Findings

The inspectors observed the administration of two dynamic simulator scenarios. Both scenarios were administered to the three crews of licensed operators. Both scenarios met the NRC requirements for the annual operating examination of the licensed operators. The inspectors found the examination scenarios challenging and were an adequate tool to measure an operators understanding of, and the ability to perform, the actions necessary to safely operate the plant. During both simulator scenarios, the crews recognized and mitigated the events presented using the appropriate plant procedures.

The inspectors observed the facility evaluators' debrief sessions and reviewed the evaluators' documentation of the crews' performance. The licensee's evaluators were objectively critical of the operators performance and effectively identified areas for improvement. The evaluators comments and findings were appropriate and agreed with NRC observations.

c. Conclusion

The inspectors determined that the administration of the simulator examinations was satisfactory. The scenarios observed were challenging and adequate training evaluation tools. The facility evaluators were objectively critical of crew performance and thorough in noting crew and individual operator performance deficiencies. Evaluator documentation of performance deficiencies was satisfactory. The inspectors concluded that this portion of the licensed operator requalification program met the requirements of 10 CFR 55.59, "Requalification."

O5.2 Job Performance Measures (JPMs) (71001)

The inspectors observed administration of several simulator and walkthrough JPMs. The simulator and walkthrough JPMs contained a broad range of tasks which met NRC standards for evaluation. The inspectors confirmed that the JPMs incorporated Plant Safety Analysis (PSA) identified risk significant operator actions and adequately tested the operators ability to perform these actions using licensee procedures. The inspectors concluded that this portion of the licensed operator requalification program met the requirements of 10 CFR 55.59, "Requalification."

O5.3 Biennial Requalification Written Examination (71001)

a. Inspection Scope

The inspectors reviewed the licensee's biennial requalification written examination, Sections A and B, administered on January 20, 2000 to 12 licensed operators to determine if the examination met the requirements of 10 CFR 55.59 "Requalification" and ADM-315, "Licensed Operator Continuing Training Program."

b. Observations and Findings

Section A (static simulator) of the written examination was comprised of fifteen open reference questions developed in accordance with NUREG 1021. Five of the fifteen

questions were not directly related to the static simulator. The inspectors evaluated the static simulator scenario and determined that the Section A questions were adequate to test a wide range of objectives. The inspectors also verified that question format and technical validity of distractors was adequate. The inspectors concluded that Section A adequately tested operator knowledge of plant systems, integrated plant operations, and instrumentation and controls.

Section B (classroom) of the written examination was comprised of twenty open reference questions. Eighteen questions were common to both reactor operator and senior reactor operator examinations. The inspectors reviewed the examination for format and technical validity. The inspectors determined that Section B was adequate to test operator knowledge and use of plant procedures.

c. Conclusions

The inspectors determined that the biennial written examination Sections A and B were adequate. The questions met the guidelines of NUREG-1021 as specified in ADM 315, "Licensed Operator Continuing Training Program." Examination questions were operationally oriented and adequately tested operator knowledge.

O5.4 Remedial Training and Testing (71001)

The inspectors reviewed the licensee's licensed operator requalification training records and associated procedures to ensure that an appropriate remedial training program was developed, implemented, and documented as required by 10 CFR 55.59.

Remedial training materials were sampled. The inspectors confirmed that licensee evaluators had developed training plans, conducted additional training, and re-evaluated the deficiencies identified during weekly segment evaluations. The materials adequately addressed the operator deficiencies.

The inspectors determined that the licensee had properly conducted and documented remedial training and re-evaluations for two operators as required by 10CFR 55.59 and licensee procedures.

O7 Quality Assurance in Operations

O7.1 Problem Identification and Resolution

a. Inspection Scope (40500)

The inspectors assessed the effectiveness of the corrective action program (CAP) to identify and resolve problems by reviewing selected condition reports (CRs), interviewing responsible personnel, and attending CR oversight group (CROG) meetings. Applicable CAP procedures were also reviewed.

b. Observations and Findings

The inspectors reviewed several dozen CRs of various significance and severity levels. The inspectors observed that the licensee's threshold for initiating CRs was low, resulting in a population of about 1850 CRs for 1999. It was evident that plant personnel were actively identifying problems at the site.

Each morning, the CROG reviewed the previous day's CRs and discussed the identified problems in order to assign a significance level, event code, and responsible department. The CROG would also specify whether the CR appeared to represent a repeat condition. Inspectors interviewed the CROG chairman, and attended CROG meetings. In general, these meetings effectively screened incoming CRs, directed them to the proper department for disposition, and assigned appropriate levels of cause determination.

The CRs reviewed by the inspectors were adequately detailed, especially for significant equipment issues and NRC violations. Significance and severity levels were consistent with the complexity, safety concern, and urgency of the problem. Apparent cause determinations and root cause analyses routinely arrived at reasonable primary and contributing causes. Corrective actions addressed the identified cause(s), and were scheduled to be completed in a timely manner. Although the generic implications of identified problems were usually addressed, the inspectors found that repetitive conditions were rarely specifically examined. Of the nine most recently completed CRs marked as "repeat conditions," only two clearly addressed the repetitive nature of the problem in their disposition. Current administrative procedures provided limited specific guidance for dealing with repeat problems. This issue was previously recognized during an engineering self-assessment conducted in November 1999, where it was found that only eight of 15 repeat CRs addressed recurrence. As a consequence of the self-assessment finding, corrective actions to improve established administrative guidance for dispositioning repeat CRs have been identified and are scheduled to be accomplished by the end of July 2000. Until then the CROG planned to review all repeat CRs, during closure, to ensure proper disposition. A brief review by the inspector of the 43 repeat CRs identified since June 1999, indicated that the vast majority were non-safety significant. Furthermore, only a few CRs identified problems that repeated more than once, and these were all non-safety significant issues.

c. Conclusions

The corrective action program was effective in identifying, dispositioning, and correcting plant problems.

O7.2 Corrective Action Program Self-Assessments

a. Inspection Scope (40500)

The inspectors reviewed recent reports of Quality Assurance audits, and other licensee self assessment activities of the CAP. In addition, inspectors interviewed personnel

responsible for performing these self-assessments and verified implementation of corrective actions.

b. Observations and Findings

The self-assessment activities have resulted in strong oversight of the CAP. Numerous findings and areas of weakness were identified and appropriate corrective actions have been proposed, implemented or scheduled. Overall, both engineering and the onsite and offsite quality departments have conducted thorough assessments of the CAP process, developed critical insights, and elicited corrective actions that have improved performance. The site quality group was conducting frequent surveillances of the CAP process and providing real time performance observations of its effectiveness.

c. Conclusions

Licensee self-assessment and audit activities to evaluate effectiveness of the corrective action program were thorough, provided critical insights, and elicited corrective actions that have resulted in program improvements. The site quality department continued to actively monitor corrective action program effectiveness on a frequent basis.

O7.3 Corrective Action Backlog

a. Inspection Scope (40500)

The inspectors reviewed the backlog of outstanding corrective actions initiated by CRs that were tracked as plant manager action items (PMAIs). The inspectors also reviewed several of the oldest PMAIs, and many of the overdue PMAIs. The inspectors also examined the use of management action items (MAIs) to track corrective actions.

b. Observations and Findings

The CR-PMAI open item back log has been steadily trending down for more than six months. This backlog has decreased by over a half since May 1999. Also, the number of PMAIs greater than 12 months old had been reduced to zero by the end of 1999, and had only grown to three by January 31, 2000. Management efforts to control the CR-PMAI backlog have been effective. Inspectors confirmed that the PMAI system was the official system for tracking corrective actions stemming from CRs. The MAI system was not procedurally recognized for tracking corrective actions from CRs.

On February 8, 2000, there were a total of 37 overdue CR-PMAs. Several of these PMAs were closed out during the week of the inspection. Engineering owned the most overdue PMAs, but these were at most a week or two late. The four oldest overdue PMAs were owned by Maintenance; and ranged from eight months to three months overdue. All overdue PMAs were listed on a weekly printout for the Plant Manager, who reviewed their status with his direct reports. The inspectors reviewed the overdue PMAs with responsible supervisors in Engineering, Operations, Health Physics, and Maintenance. No safety significant issues were identified regarding the currently overdue CR-PMAs.

c. Conclusions

The CR corrective action backlog of PMAs received strong management attention and has been steadily trending down since May 1999. The number of PMAs greater than one year old were reduced to zero by the end of 1999.

O7.4 Condition Report Trending

a. Inspection Scope (40500)

The inspectors reviewed the Third Quarter 1999 Condition Report Trend Report dated December 6, 1999. The inspectors interviewed the individual responsible for developing the quarterly trend report, including discussions of second quarter and fourth quarter data (not yet published). The inspectors also examined the completed CRs issued as a result of the third quarter report.

b. Observations and Findings

Condition report event codes were being actively trended every quarter. Identified trends were well supported by existing data. Condition reports were consistently issued for all adverse trends. However, departmental responses to address adverse trends were inconsistent, lacked detail, and usually did not propose any corrective actions to improve performance. Of the ten CRs initiated, some of which were for a continuing negative trend from the second quarter, only two proposed any corrective actions. Ineffectiveness of the CR trending program to improve plant performance and arrest negative trends was previously recognized by the engineering self-assessment of November 1999. This assessment found that only one CR proposed any corrective actions of the sixteen CRs initiated for adverse trends from the first and second quarters of 1999. Longterm corrective actions were being developed by the licensee to improve trending program effectiveness by July 2000 through benchmarking, and by placing more emphasis on human performance.

c. Conclusions

Condition report event codes were being actively trended every quarter. Identified trends were well supported by existing data. Condition reports were consistently issued for all adverse trends. Although some problems were noted with trend program effectiveness, the licensee is developing corrective actions to improve performance in this area.

O7.5 Maintenance Rule Corrective Actions

a. Inspection Scope (IP 40500)

The inspectors reviewed completion of corrective actions associated with components in the Maintenance Rule program which were entered into a(1) or taken out of a(1) status. In addition, the inspectors interviewed responsible system engineers and Operations personnel.

b. Observations and Findings

The inspectors reviewed condition reports, and verified corrective actions, for the following maintenance rule components that had been placed in a(1) status due to excessive unavailability or repetitive failures - Unit 3 post accident sampling system (PASS) heater circuit; Unit 4 primary water flow control valve FCV-4-114A; and Unit 3A Component Cooling Water (CCW) pump. Actions taken to return these components to a(2) status per Maintenance Rule requirements were successful for the PASS heater circuit and CCW pump. Since the primary water FCV was just recently placed in a(1), its performance was still being monitored. The inspectors determined that the a(1) goal setting, monitoring, and generic review of issues were adequate.

c. Conclusions

Goal setting, monitoring, generic review, and associated corrective actions for Maintenance Rule components placed in a(1) status were consistent with program requirements.

O7.6 Outage Risk Assessment (40500, 71707)

On January 20, and February 8, 2000, the inspectors attended outage risk assessment team meetings. These meetings were to review some of the activities for the Unit 3 refueling outage in March, 2000. Two temporary change notices to procedure O-DM-051, Outage Risk Assessment and Control, were reviewed. Also, reviewed were plans to use operating experience feedback and Unit 3 outage work that could impact Unit 4 operations such as Limiting Conditions for Operations. Thorough application of risk assessment information was noted.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Maintenance Work Order (WO) and Surveillance Observations (61726) (62707)

The inspectors observed the following surveillance and maintenance activities:

WO 99017951	3C Intake Cooling Water (ICW) Pump
WO 29019235	3A Charging Pump
WO 28022289	3B Emergency Diesel Generator (EDG) Radiator Replacement
4-OSP-075.6	'A' Auxiliary Feedwater Pump Test
TP 99-044	Chemical Volume Control System Ultra fine Filter Phase II Filter Replacement
3-OP-040.3	Refueling Pre-shuffle in the Spent Fuel Pit

Maintenance and surveillance activities were properly performed and no significant problems noted. The inspectors noted improvement in the material condition of the intake area around the circulating traveling screen system, ICW pumps, and in the condenser bays.

M1.2 Foreign Material Exclusion (FME) Controls

a. Inspection Scope (62707)

The inspectors reviewed the licensee actions on several issues that were identified on FME area controls and equipment accountability in the spent fuel pool areas.

b. Observations and Findings

Within the last two months, several issues have been identified with FME controls in the Unit 3 and Unit 4 Spent Fuel Pool (SFP) areas. The issues primarily involved equipment and tools not appropriately logged in or out of the FME areas. Additionally, changes in FME boundaries were made without the appropriate controls or reviews. The inspectors noted the problems involved administrative controls and that there were no known problems of foreign material entry into the pools. The licensee stated that the most recent issues occurred because corrective actions, while in progress, had not yet been completed. Management indicated that interim corrective actions to prevent recurrence include the plant general manager being on sign-off anytime an FME boundary is to be relocated and Health Physics provides reviews and a daily report to Operations on the SFP FME.

c. Conclusions

Several Foreign Material Exclusion administrative control issues in the spent fuel pool areas relating to boundary controls and equipment accountability are being addressed

by the licensee. Interim corrective actions have been implemented pending completion on review of these issues.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Emergency Diesel Generator Radiators

a. Inspection Scope (62707, 37551)

The inspectors observed replacement of the 3B emergency diesel generator (EDG) radiator. The inspectors observed the post maintenance run of the EDG, resolutions of the minor leaks, and reviewed the operability assessment with engineering. The inspectors verified compliance with the one time allowed outage extension compensatory measures.

b. Observations and Findings

The 3A EDG radiator had been replaced the previous month (See NRC Inspection Report 250,251/98-08). As had been done on the 3A EDG, the licensee utilized the one-time extension of the EDG allowed outage time (seven days). Lessons learned from the 3A EDG radiator replacement had been incorporated in the planning and maintenance for the 3B radiator. Engineering provided continuous field support and resolved issues within the allowed extended outage time. A minor gasket leak was observed during the diesel maintenance run. As the radiator came up to operating temperature, the leak stopped. The licensee concluded the diesel was operable based on an operability assessment. The licensee documented the observed leakage in a condition report and planned to tighten the gasket bolts during the upcoming Unit 3 outage.

c. Conclusions

The Unit 3B EDG radiator replacement was satisfactorily completed within the extended allowed outage time. Engineering support was provided during the radiator replacement and supported timely resolution of issues.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Component Cooling Water (CCW) Vacuum Breakers (37551)

During the performance of 3-OSP-206.2, Quarterly Inservice Valve Testing, both CCW head tank vacuum breakers did not move. This procedure implements the surveillance requirements of Technical Specification 4.0.5 for inservice testing. The licensee initiated Condition Report (CR) 00-0065 to document that valves, 3-1019 and 3-1020, were stuck closed. The valves were entered into the equipment out of service log. The CCW system was considered operable based on reviews previously performed associated with CR 99-0635.

Since the CCW is the most risk significant system at the plant, the inspectors reviewed CR 99-0635 in detail. This CR had been written because a single vacuum breaker (3-1019) did not operate. The inspectors discussed with engineering that the operability assessment for CR 99-0635 did not fully address the situation for both vacuum breakers. Although the assessment stated the vacuum breakers did not perform a safety function, it also stated that one valve remained operable and there was no requirement for a redundant valve.

The vacuum breakers were subsequently cleaned and returned to service with satisfactory completion of 3-OSP-206.2 Section 7.11. The CCW system remained operable because the vacuum breakers did not perform a safety function. The licensee initiated corrective actions to address the operability evaluation issues.

E2.2 Manual Actions for Inoperable Intake Cooling Water (ICW) Valve

a. Inspection Scope (37551, 71707)

The inspectors reviewed the failure of an automatic isolation valve in the intake cooling water system and compensatory actions taken.

b. Observations and Findings

On February 10, 2000, during three attempts to close POV-3-4883, ICW inlet strainer isolation valve for backwashing a strainer, the valve failed to close. This valve receives an automatic isolation signal upon a safety injection signal to isolate ICW flow to Turbine Plant Cooling Water (TPCW) system and divert full flow to Component Cooling Water (CCW). CCW is the most risk significant system at the site due to providing cooling water to the Reactor Coolant Pump seals and the Residual Heat Removal System. Later that morning, a dedicated operator was established to close manual valve 3-50-339 and the Operations log book indicated that the 72 hour Limiting Condition to Operations (LCO) was exited. The inspectors interviewed the dedicated manual valve watches and noted they were stationed in the vicinity of the valve with no other specific duties. The inspectors toured the control room and discussed operations of the manual valve with the operators. The inspectors also reviewed safety evaluation JPN-PTN-SENS-96-011, Use of Manual Actions to Isolate the TPCW Heat Exchangers.

The valve was returned to operation after replacing a hand switch and relay in the valve control circuit. The inspectors reviewed all aspects of the compensatory actions and LCO time. The strainers are usually back flushed daily, Valve POV-3-4883 was satisfactorily operated the day before and the total time until the valve was fully restored was less than 72 hours. No Technical Specification requirements were violated since the system was fully restored within the 72 hours allowed in the LCO.

c. Conclusion

Corrective actions for a failed automatic isolation valve in the intake cooling system were effective. Compensatory measures were established using a dedicated operator for manual isolation due to an inoperable intake cooling water valve. The valve was returned to an operable status within the TS allowed period.

E2.3 Heavy Load (37551, 62707)

The inspectors reviewed the heavy load lift of the temporary containment chiller units onto the auxiliary building roof. This activity was performed in preparation for the Unit 3 refueling. The inspectors observed lifting of the chillers units on the auxiliary building roof. The lift required a deviation from the safe load path specified in Attachment 1 of procedure O-ADM-717, Heavy Load Handling. Any deviation requires an approved procedure. The inspectors reviewed O-OP-051.1, Temporary Containment Cooling, for the lifting requirements. The load path was specified by PTN-C-94-085-002, Temporary Containment Cooling Chiller Skid Heavy Lift Loader Path. The inspectors observed that the lifting followed the load path. Rigging requirements were discussed with the system engineer and the qualifications of the riggers were reviewed. No problems were identified.

IV. Plant Support

F1 Control of Fire Protection Activities

F1.1 Fire Hazards Reduction/Combustible Material and Housekeeping Controls

a. Inspection Scope (64704)

The inspectors reviewed fire protection Administrative Procedures, 0-ADM-016, "Fire Protection Program," dated June 8, 1999, and 0-ADM-016.1, "Transient Combustible and Flammable Substances Program" dated February 25, 1999, to determine if the objectives established by the licensee's commitments to implement the NRC-approved fire protection program were being met. The inspectors also reviewed the results of the licensee's transient combustible occurrence trend reports and corrective action program condition reports (CR) for the past 3-year period (1997-1999) to verify that transient combustible fire hazards issues and corrective actions were identified.

b. Observations and Findings

The inspectors toured six of the highest ranked dominant fire risk locations identified in the licensee's Probability Risk Assessment (PRA) submitted to the NRC on June 1994, to verify proper implementation of procedure 0-ADM-016.1. The inspectors observed that the controls being maintained for transient combustibles in areas containing potential lubrication oil and diesel fuel leaks, were consistent with the approved fire protection program. Lubricants and oils for normal maintenance activities were placed in approved safety containers and stored within approved fire resistive flammable liquids storage cabinets located only in those safety related areas designated by the plant fire protection program procedures. No discrepancies were identified.

The inspectors observed that designated fire protection personnel (as required by procedure 0-ADM-016, Section 4.1.6) conducted plant fire inspections to identify and correct potential fire hazards. The review of the results of these fire inspections and associated trending reports for combustible control issues indicated that the implementation of the combustible control procedures and plant operational practices

were within the requirements of the approved fire protection program. The plant management goal of less than five transient items found was met each year and the trend for the number of items found had decreased to less than two in 1999. No findings were identified and documented in relation to implementation of the combustible material control program.

c. Conclusions

Controls for transient combustibles were being adequately implemented.

F1.2 Frequency of Fire Related Incidents and Fire Reports (64704)

The inspectors reviewed plant fire occurrence reports and equipment failure work orders resulting from fire, smoke, sparks, arcing, and equipment overheating incidents for the 3-year time period of 1997-1999, to assess the effectiveness of the fire prevention program and any maintenance-related or material condition problems in accordance with 0-ADM-016 when fire-related events occurred. The licensee's fire reports and CR issues associated with observed fire, smoke, sparks, arcing, and equipment overheating incidents indicated that during the period 1997-1999 there were ten incidents of fire, smoke or equipment overheating observed within a safety-related plant areas. The inspector determined that this indicated an average of two fire initiating incidents per reactor year of operation. In all cases, these fire initiating faulted conditions were identified and mitigating actions were taken in a timely manner so as to limit damage to the original source and prevent serious exposure to other safety-related equipment or cables. No findings were identified and documented in relation to implementation of the fire prevention program.

F2 Status of Fire Protection Facilities and Equipment

F2.1 Inspection of Fire Brigade Equipment (64704)

The inspectors toured the fire brigade staging area in the turbine building and observed the condition of fire brigade equipment. The purpose of the inspection was also to verify that the fire brigade equipment specified in the NRC-approved fire protection program were accessible and available in the staging area and fire brigade lockers. The inspectors observed that the personal protective fire fighting equipment provided for fire brigade use at the fire brigade staging area and lockers was accessible, maintained in good condition, and provided a sufficient level of personal safety needed to handle onsite fire emergencies. The inspector also observed that backup lighting provided in the area of the fire brigade staging area and lockers was operable and provided an adequate level of lighting in support of fire brigade operations. No findings were identified and documented in relation to the fire brigade equipment or staging area.

F2.2 Emergency Lighting for Performance of Alternative Shutdown Capability (64704)

The inspectors reviewed the design and operation of the 8-hour battery powered emergency lighting. The inspectors' reviewed Updated Final Safety Analysis Report (UFSAR) 9.6A, Section 3.7, "Emergency Lighting" and 10 CFR 50 Appendix R,

Section III.J., and verified that the emergency lighting design of the 8-hour battery powered emergency lighting system installed in three plant areas were properly provided to allow access to safe shutdown equipment and performance of safe shutdown manual actions reflected in operations procedures ONOP-16.10, "Operations Safe Shutdown Manual Actions," (Fire Zone 61, steps 5.3 and 8.5) and ONOP-105, "Control Room Evacuation," (Attachments 2 and 5). The inspectors walked down remote shutdown equipment identified in procedures ONOP-16.10 and ONOP-105, in the 4160 volt switchgear rooms, the Unit 3 charging pump room, and the Unit 4 pipe and valve room. The inspectors observed approximately 25 lighting units and verified that the emergency lighting unit lamps were operational and the lighting heads were aimed to provide adequate illumination for access to safe shutdown equipment and to perform the required shutdown actions denoted in the procedures. The inspectors noted that following blackout condition emergency lighting tests conducted in 1998, the licensee had added dedicated supplemental portable lights for operator safety purposes. These lights are to be used for the performance of certain manual actions such as fuse pulling inside high voltage switchgear.

F3 Fire Protection Procedures and Documentation

F3.1 Fire Brigade Pre-Fire Strategies (64704)

The inspector reviewed fire brigade pre-fire strategies described in procedure 0-ONOP-016.10, "Pre-Fire Plan Guidelines and Safe Shutdown Manual Actions," for five risk significant plant areas where fire brigade drills had been performed. Plant tours were also performed to verify the fire strategies reflected as-built plant conditions and potential fire conditions. Each of the fire brigade pre-fire strategies and plan drawings addressed the fire potential, area location, means of fire brigade approach, location fire protection equipment available, fire brigade action, hazards to be considered, ventilation, special notes and instructions, and communications available. During plant tours the inspectors compared the pre-fire strategy plan drawings with as-built plant conditions and found no significant findings.

F5 Fire Protection Staff Training and Qualification

F5.1 Fire Brigade Drill Program (64704)

The inspectors reviewed the fire brigade drill program and observed a fire brigade response associated with an unannounced fire brigade drill. The inspectors witnessed an unannounced fire brigade drill (FBD-013) for an operations shift, on February 8, 2000. The fire scenario involved a simulated fire in the Unit 3 steam generator feed pump area (Fire Zone 069). The brigade demonstrated effective fire fighting tactics, the proper use of the pre-fire plan and fire fighting equipment, and adequate recovery operations. The inspectors observed that the nominal fire brigade performance response time to place an effective fire suppression agent on the fire was about ten minutes.

The critique of this drill was effective in identifying a communications area of improvement involving communication of mutual aid decisions. The overall fire brigade response and drill performance was satisfactory.

F7 Quality Assurance in Fire Protection Activities

F7.1 Fire Protection Audits (40500)

a. Inspection Scope

A recent fire protection self assessment project report and the plant corrective action program response was reviewed. The licensee's Fire Protection Functional Inspection (FPFI) Self-Assessment Project Team performed an assessment of the fire protection program during the period of April 12, 1999 through September 30, 1999. The self-assessment was performed in accordance with the guidance from NRC's Draft Inspection Procedure "Fire Protection Functional Inspections." The assessment encompassed a review of twenty-one (21) fire protection program assessment areas.

b. Observations and Findings

The licensee assessment team determined that the fire protection program was effectively implemented and adequately documented in the Updated Final Safety Analysis Report (UFSAR). The team also found that the configuration management design and control process was effective in preserving the fire protection design basis. The most significant issues were identified within the Thermo-Lag Upgrade Project. These included documentation issues involving the consistency of the licensee's safe shutdown circuit analysis and pre-fire plan post fire safe shutdown manual actions. The assessment report identified seven (7) CRs and eleven (11) Plant Management Action Items (PMAI) to address the issues. The licensee's evaluation of these issues did not identify any adverse conditions, operability concerns, safety concerns, or reportable events.

The inspectors verified that the self-assessment issues were documented through the corrective action program process. The inspectors reviewed the final self-assessment report, the licensee's CRs tracking the identified issues, and the planned corrective actions identified in the associated PMAIs. The inspectors observed that the licensee's self-assessment was comprehensive and effective in identifying fire protection program safe shutdown circuit analysis and post fire safe shutdown manual action documentation issues to management. The issues identified by the assessment team were similar to those types of safe shutdown circuit analysis and safe shutdown manual action items identified during the NRC FPFI pilot program. Corrective actions in response to the identified issues were substantial and were primarily addressed within the scope of the existing Thermo-Lag Upgrade Project.

c. Conclusion

The licensee's self assessment activities, including a recently completed overall assessment of the fire protection program, were comprehensive. Corrective actions were initiated to address identified issues.

R1 Radiological Protection and Chemistry Controls

R1.1 Conduct of Radiological Protection Controls (83750, 84750)

a. Inspection Scope

Radiological controls for routine operations, solid radioactive waste processing/storage, and radioactive material storage areas were reviewed. During tours of radiologically controlled areas (RCA), the inspectors discussed and evaluated general housekeeping, radiological surveys and monitoring, postings, and physical controls for high radiation areas (HRAs) and locked-high radiation areas (LHRAs). In addition, radiological controls and occupational worker exposure results for the Unit 4 containment walk-downs and maintenance work conducted during the January 24-28, 2000 short notice outage (SNO) were reviewed and evaluated.

Licensee activities were compared against applicable sections of the Updated Final Safety Analysis Report (UFSAR), Technical Specifications (TS), and 10 CFR Part 20 and Part 50 requirements.

b. Observations and Findings

Within the auxiliary building and radioactive waste/material processing and storage areas, RCA unrestricted areas were maintained radiologically clean and uncluttered. Area postings and container labels were maintained in accordance with the associated access controls or radiological conditions. High and locked-high radiation areas were controlled appropriately. For the U4 SNO containment entry activities, no personnel contamination events were identified and occupational workers' doses were less than regulatory limits.

c. Conclusions

Observed radiological controls and monitoring for routine operations and the Unit 4 short notice outage activities were in accordance with applicable regulatory requirements. Occupational worker doses were below regulatory limits.

R1.2 As Low As Reasonably Achievable (ALARA) Program Implementation (83750)

a. Inspection Scope

Selected occupational worker exposures, site cumulative dose expenditures, and proposed ALARA program initiatives were reviewed and discussed. Planning activities for selected high dose tasks to be conducted during the upcoming Unit 3 refueling outage (U3 RFO) were reviewed and discussed.

Program activities were evaluated against applicable sections of 10 CFR Part 20, TS, and approved procedures.

b. Observations and Findings

For calendar year 1999 and year-to-date 2000, all individual occupational worker exposures were within established regulatory limits. The site's total dose expenditure decreased from 156 to 128 person-rem between 1998 and 1999, with each year including a single refueling outage. Decreases in dose expenditures in 1999 were reported for both outage and non-outage periods. The 1997-1999 three year average (1997-1999) cumulative dose expenditure continued to trend downward with 116 person-rem reported for 1999. For the upcoming U3 RFO, historical data and lessons learned from previous work packages were incorporated into the ALARA planning and dose-budgeting process.

c. Conclusions

Occupational worker doses were within regulatory limits for calendar year 1999 and year-to-date 2000 and cumulative site radiological expenditures continued to decrease. Implementation of the licensee's "As Low As Reasonably Achievable program" was in accordance with approved procedures.

R1.3 Radioactive Effluent Processing, Analysis and Release (84750)

a. Inspection Scope

Activities associated with a January 26, 2000 Waste Monitor Tank (WMT) "A" liquid effluent release were evaluated through review of radioactive waste permit data, and direct observation of system valve line-ups, and release processing. Equipment operability, procedural adequacy, and staff proficiency were reviewed.

Program guidance, actions, and results were evaluated against applicable sections of 10 CFR Part 20, TS, Offsite Dose Calculation Manual (ODCM), and approved procedural requirements.

b. Observations and Findings

Operators were knowledgeable of the liquid effluent discharge system capabilities and demonstrated proficiency in completing required tasks associated with the WMT "A" release. System parameters and valve line-ups were completed and verified in accordance with the established procedure. No significant operational concerns were identified regarding procedural guidance, equipment status, or release operations. Estimated radionuclide concentrations and projected offsite doses were within 10 CFR Part 20 limits, ODCM specifications, and design criteria listed in Appendix I to 10 CFR Part 50.

c. Conclusions

Operations staff were knowledgeable and proficient in conducting a January 26, 2000 Waste Monitor Tank "A" release. Effluent concentrations and offsite doses were within regulatory limits and established design criteria.

R7 Quality Assurance in Radiation Protection and Chemistry Activities (83750, 84750)

R7.1 Radiation Protection and Chemistry Condition Reports

The inspectors reviewed details and status of selected Condition Reports (CR) associated with radioactive material control, effluents, and radiological monitoring documented between July 1, through December 31, 1999. Identified issues and licensee actions were evaluated against TS, and 10 CFR Parts 20 and 50 requirements.

Licensee actions for issues identified in the reviewed CRs were prioritized, tracked and dispositioned appropriately. Proposed or completed actions were technically correct and scheduled for completion in a timely manner.

P1 Conduct of Emergency Preparedness (EP) Activities

P1.1 Review of EP Program (82701)

a. Inspection Scope

During the period January 24-27, 2000, the inspector reviewed EP program activities at the Turkey Point Nuclear Power Plant to determine whether the licensee's emergency response capability was maintained in a state of operational readiness, and to determine whether changes to the program since the last such inspection (December 1997) met commitments, NRC requirements, or adversely affected the licensee's overall state of preparedness.

b. Observations and Findings

Since the last inspection, the licensee issued Revision 35 dated March 25, 1999, to the Emergency Plan. The inspector selectively reviewed changes made in this revision, and determined that they had no adverse effect on the licensee's level of emergency preparedness. The revision to the Plan was submitted to the NRC in accordance with regulatory requirements, as were revisions to the Emergency Plan Implementing Procedures. The inspector reviewed the three Notification of Unusual Events made since the last inspection. No issues with the classifications or notifications of these emergency declarations were identified by the inspector.

Emergency facilities, equipment, instrumentation, and supplies were inspected and found to be well maintained. The inspector did not tour the licensee's Emergency Operations Facility (EOF) in Miami, FL during the current inspection. However, NRC inspectors evaluated the EOF during the February 1999 biennial emergency response exercise and no problems were identified with respect to the operation of the EOF or its support equipment.

The inspector reviewed the emergency response organization (ERO) training program and EP drill and exercise program. The licensee's schedule of integrated drills/exercises was being managed to provide for annual participation by virtually all key ERO personnel. The licensee conducted an unannounced ERO staff augmentation drill on December 16, 1999, that did not accomplish all planned objectives because one of the key telephone callers misunderstood the scope of the drill and did not have personnel respond to the site. The licensee conducted another drill the next day that was successful. Additionally, the licensee was in the process of procuring an auto-dialer that will be integrated into the call-out system. The auto-dialer should provide the capability for improved ERO staff augmentation during off-hours.

The inspector reviewed the licensee's corrective action program by auditing a list of emergency preparedness items assigned for resolution. The inspector found most items to be substantive, problems and issues were thoroughly investigated, and the appropriate corrective actions were pursued and implemented.

c. Conclusions

The licensee's emergency preparedness program was being maintained in a state of full operational readiness. Changes to the program since the December 1997 inspection were consistent with commitments and NRC requirements, and did not decrease the licensee's overall state of preparedness.

V. Management Meetings and Other Areas

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on February 29, 2000. Interim exit meetings were held on January 21, January 27, and February 10, 2000 to discuss the findings of Region based inspections. The licensee acknowledged the findings presented.

Proprietary information was identified and reviewed during this period but is not discussed in this report.

PARTIAL LIST OF PERSONS CONTACTEDLicensee

D. Lowens, Quality Assurance Manager
 S. Franzone, Licensing Manager
 R. Hovey, Site Vice-President
 D. Jernigan, Plant General Manager
 T. Jones, Operations Manager
 J. Kirkpatrick, Protection Services Manager
 M. Lacal, Training Manager
 G. Hollinger, Work Control Manager
 R. Rose, Maintenance Manager
 E. Thompson, License Renewal Project Manager
 D. Tomaszewski, Site Engineering Manager
 J. Trejo, Health Physics/Chemistry Supervisor
 A. Zielonka, System Engineering Manager

Other licensee employees contacted included office, operations, engineering, maintenance, chemistry/radiation, and corporate personnel.

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
 IP 40500: Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
 IP 61726: Surveillance Observations
 IP 62707: Maintenance Observations
 IP 64704: Fire Protection Program
 IP 71001: Requalification Inspection
 IP 71707: Plant Operations
 IP 71750: Plant Support Activities
 IP 82701: Operational Status of the Emergency Preparedness Program
 IP 83750: Occupational Radiation Exposure
 IP 84750: Radioactive Waste Treatment, and Effluent and Environmental Monitoring