ENCLOSURE

INTERIM SALP BOARD REPORT

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

INSPECTION REPORT NUMBER

50-250, 251/89-36

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT UNITS 3 AND 4

JULY 1, 1988 - JULY 31, 1989

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I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) program is an integrated NRC staff effort to collect available observations and data on a periodic basis and to evaluate licensee performance on the basis of this information. The program is supplemental to normal regulatory processes used to ensure compliance with NRC rules and regulations. It is intended to be sufficiently diagnostic to provide a rational basis for allocation of NRC resources and to provide meaningful feedback to the licensee's management regarding the NRC's assessment of their facility's performance in each functional area.

An NRC SALP Board, composed of the staff members listed below, met on September 25, 1989 to review the observations and data on performance, and to assess licensee performance in accordance with Chapter NRC-0516, "Systematic Assessment of Licensee Performance." The guidance and evaluation criteria are summarized in Section III of this report. The Board's findings and recommendations were forwarded to the NRC Regional Administrator for approval and issuance.

This report is the NRC's assessment of the licensee's safety performance at Turkey Point Units 3 and 4, for the period July 1, 1988 through July 31, 1989.

The SALP Board for Turkey Point was composed of:

L. A. Reyes, Director, Division of Reactor Projects (DRP), Region II (RII) (Chairman)
E. W. Merschoff, Deputy Director, Division of Reactor Safety, (DRS), RII
J. P. Stohr, Director, Division of Radiation Safety and Safeguards RII
M. V. Sinkule, Chief, Reactor Projects Branch 2, DRP, RII
H. N. Berkow, Director, Project Directorate II-2, Office of Nuclear Reactor Regulation (NRR)
R. C. Butcher, Senior Resident Inspector, Turkey Point, DRP, RII
G. E. Edison, Project Manager, Project Directorate II-2, NRR

Attendees at SALP Board Meeting:

R. V. Crlenjak, Chief, Project Section 2B, DRP, RII
P. M. Madden, Project Engineer, Project Section 2B, DRP, RII
J. R. Wiseman, Reactor Engineer, Technical Support Staff, DRP, RII

A. Licensee Activities

During this SALP period, Unit 3 was on line for a total of 185 days with a unit capacity factor of 33.7 %, and Unit 4 was on line for 122.5 days with a capacity factor of 24.6 %. The operating history during this assessment period is described below.

Unit 3

Unit 3 operated at 100% power until October 1, 1988, when the unit was shut down due to excessive seal leakage on the 3A residual heat

removal pump. The October 1, 1988 shut down was extended by the licensee into an outage to repair the seal leak in the 3A Residual Heat Removal (RHR) Pump, repair the pressurizer heaters, replace the electrical generator rotor, repair Intake Cooling Water (ICW) flanges, and to perform emergency diesel generator preventive maintenance and repairs. The unit was back on line on February 3, 1989, and was brought off line on February 9, 1989, to repair a ruptured expansion joint in the extraction steam line to the 3A feedwater heater. On February 10, 1989, the unit automatically tripped from Mode 2 during a steam generator protection channel periodic test due to a procedural error. The unit was placed back on line on February 15, 1989, and was shut down on March 29, 1989, because of the high operator requalification failure rate. Unit 3 went back on line on June 24, 1989.

Unit 4

Unit 4 operated until August 12, 1988, when the unit was shut down to repair a leaking pressurizer spray line flange. Unit 4 went back on line on August 16, 1988, and the reactor tripped on August 19, 1988, on a steam generator low-low level caused by personnel error during surveillance testing. The unit was back on line on August 22, 1988, and ran until September 20, 1988, when shut down for a refueling outage. During the refueling outage the licensee performed the following major maintenance and modification activities: replacement of component cooling water (CCW) heat exchangers, inspection and repair of reactor coolant system (RCS) check valves, cleaning of turbine oil piping, repair of ICW pump foundation, replacement of steam generator J-Nozzles, upgrade and maintenance of emergency diesels, 100% eddy current testing of steam generator tubes, replacement of RHR pump seals and coolers, reactor coolant pump seal inspection, installation of integral rotor in low pressure turbine, inspection and repair of high pressure turbine, repairs to condenser water boxes, air accumulator installation on main steam isolation valves, and repair and overhaul of flux map thimbles. The unit was back on line on June 11, 1989, taken off line June 12, 1989, for a turbine overspeed test and placed back on line June 16, 1989. On June 17, 1989, the unit was taken off line to correct a generator exciter ground indication caused by a turbine plant cooling water leak. The unit went back on line June 18, 1989, and taken off line July 13, 1989, to test the turbine stop valves. The unit was back on line on July 13, 1989, and taken off line on July 17, 1989, due to low intake cooling water flow to the component cooling water system. The unit was back on line on July 22, 1989.

B. Direct Inspection and Review Activities

During the assessment period, 52 routine and six special inspections were performed at Turkey Point by the NRC staff. The following is a listing of the special inspections that were performed:

- November 28 - December 2, 1988 and December 12-16,1988; Maintenance and overall maintenance program effectiveness team inspection.

- December 5-8, 1988; Environmental qualification (EQ) of electrical equipment team inspection.

- March 13-17, 1989; Allegation followup inspection.

- March 20-24, 1989; ALARA team inspection.

- April 6-8 and April 24-26, 1989; Operating shift reconstitution, and training and simulator drill observation inspection.

- July 10-13, 1989; Allegation followup inspection.

II. SUMMARY OF RESULTS

Turkey Point operated with improved performance during the assessment period. Management acted to maintain both units shut down for much of the first six months of the rating period. These outages, implemented or lengthened to upgrade equipment material condition, resulted in improved plant operations and overall reliability during the closing months of the assessment. Solid improved performance was demonstrated in the areas of Operations and Maintenance. Significant weaknesses are still apparent in the area of Security.

There has been considerable improvement in the area of Operations. Changes in plant management made during this and the prior assessment period have lead to positive results in this area. The plant operating crews have assumed positive control by demonstrating ownership and have placed plant safety and reliability as overall operating goals. These cultural changes have taken place because of management's drive to improve Turkey Point. Significantly, the site experienced only two plant trips during the assessment period. These trips occurred while conducting surveillance testing. Additionally, during this appraisal period, previous facility on-line operating milestones were exceeded for both dual and single unit operations at power.

The Maintenance area has also shown improvement. The licensee is closely monitoring various parameters/activities to assure continued improvement. Specific items showing improvement are: timely completion of planned maintenance and surveillances; improved control of Plant Work Orders; and improved scheduling and completing of maintenance activities. Continued management attention is needed in; stabilizing maintenance staff; improving control/availability of spare parts; improving the quality of maintenance-related procedures; assuring involvement of supervisors/foremen in maintenance activities; improving technical familiarization of system engineers with their assigned systems; and improve root cause analysis and the trending of rework associated with failures.

As previously stated, Security remains a weakness at Turkey Point. Management has, however, brought about some positive improvement in this area compared to the last assessment period. The establishment of a joint corporate and site steering committee has resulted in reductions of personnel turnover, compensatory hours, compensatory posts and loggable events. Much of the improvement was noted during the latter part of the

assessment period due mainly to an increase in effective management attention. Management expertise has also been enhanced with the hiring of a new Security Manager at the end of the assessment period. Additionally, FPL has fully staffed the new security shift supervisor positions with FPL employees.

Overall, while the number of violations increased over the previous period, a decrease in the significance and severity level of the violations was noted.

Overview

Functional Area	Rating Last Period	Rating This Period	Trend
Plant Operations (Operations & Fire Protection)	3/2	2	
Radiological Controls	2	2	
Maintenance/Surveillance	3/2	2	
Emergency Preparedness	2	2	
Security	3	3	I
Engineering/Technical Support (Engineering, Training & Outages)	2/2/2	2	
Safety Assessment/ Quality Verification (Quality Programs & Licensing)	2/2	2	

NR - Not Rated
I - Improving
D - Declining

III. CRITERIA

Licensee performance is assessed in selected functional areas, depending on whether the facility is in a construction or operational phase. Functional areas normally represent areas significant to nuclear safety and the environment. Some functional areas may not be assessed because of little or no licensee activities or lack of meaningful observations. Special areas may be added to highlight significant observations.

The following evaluation criteria were used, as applicable, to assess each functional area:

1. Assurance of quality, including management involvement and control;

2. Approach to the resolution of technical issues from a safety standpoint;

3. Responsiveness to NRC initiatives;

4. Enforcement history;

5. Operational and construction events (including response to, analyses of, reporting of, and corrective actions for);

6. Staffing (including management); and

7. Effectiveness of training and qualification program

However, the NRC is not limited to these criteria and others may have been used where appropriate.

On the basis of the NRC assessment, each functional area evaluated is rated according to three performance categories. The definitions of these performance categories are as follows:

1. Category 1. Licensee management attention and involvement are readily evident and place emphasis on superior performance of nuclear safety or safeguards activities, with the resulting performance substantially exceeding regulatory requirements. Licensee resources are ample and effectively used so that a high level of plant and personnel performance is being achieved. Reduced NRC attention may be appropriate.

2. Category 2. Licensee management attention and involvement in the performance of nuclear safety or safeguards activities are good. The licensee has attained a level of performance above that needed to meet regulatory requirements. Licensee resources are adequate and reasonably allocated so that good plant and personnel performance is being achieved. NRC attention may be maintained at normal levels.

3. Category 3. Licensee management attention to and involvement in the performance of nuclear safety or safeguards activities are not sufficient. The licensee's performance does not significantly exceed that needed to meet minimal regulatory requirements. Licensee resources appear to be strained or not effectively used. NRC attention should be increased above normal levels.

The SALP Board may also include an appraisal of the performance trend of a functional area. This performance trend will only be used when both a definite trend of performance within the evaluation period is discernible and the Board believes that continuation of the trend may result in a change of performance level. The trend, if used, is defined as:

Improving: Licensee performance was determined to be improving near the close of the assessment period.

Declining: Licensee performance was determined to be declining near the close of the assessment period and the licensee had not taken meaningful steps to address this pattern.

IV. PERFORMANCE ANALYSIS

A. Plant Operations

1. Analysis

During this assessment period routine inspections and evaluations of plant operations were performed by the resident and regional inspection staffs.

Both units have been shut down and started up numerous times during the SALP period. Overall, changes in plant modes and power were conducted in a deliberate, controlled and professional manner. Unit 4 had one reactor trip from 100% power and Unit 3 had one reactor trip while in Mode 2. This represents an improvement over the previous SALP evaluation period during which four reactor trips occurred. The Unit 4 trip was due to a personnel error, involving both an operator and an I&C technician, while conducting a surveillance and the Unit 3 trip occurred as a result of a procedure deficiency. In addition, during this period, a new site milestone of 76 continuous days of dual unit operation and a new Turkey Point single unit milestone power run of 185 days, set by Unit 3, was achieved.

The previous SALP evaluation noted that operations management was overly dependent on other organizations for guidance: Management has reversed that trend by holding the shift supervisor responsible for operational decisions and has met with all operators to instruct them as to their responsibilities and duties. To support the on-shift supervisors, the Operations Supervisor-Nuclear originated an Operations Event Report Form. The form is utilized by each shift supervisor and assistant shift supervisor as guidance to document and communicate to management operational problems/concerns occurring or identified on their shift for information and further action. During the last SALP the licensee initiated the "Management-on-Shift" (MOS) Program. This significant licensee initiative placed a management representative on each operating shift to review and identify deficiencies in operational performance. Comments made by the MOS observers during this SALP period indicate that the shift and assistant shift supervisors have directed more of their time to shift management and placed more reliance on the Reactor Control Operators (RCO) to operate the units. As a result of the improved performance in the area of plant operations, the MOS program was concluded on January 20, 1989. MOS observers have been brought in quarterly since January 20, 1989, to observe and obtain an independent assessment of plant operations. The MOS observer comments have been favorable, indicating that operators are in control and are appropriately delegating their authority as necessary, have better communications, and better teamwork and feedback with shift supervisors. The resident inspectors, through routine inspection observations of control room activities have observed an improvement in the

on-shift teamwork and communications. Currently all MOS items are closed.

Control room professionalism has improved from the last SALP. The reasons for these improvements can be attributed to changes in attitude and operational philosophy brought about by the Senior Vice President, Plant Manager, Operations Superintendent and the reassigned shift supervisors. Operating crews have adopted a standard dress code in the control room. The licensee supports this effort and supplies the uniforms and provides a cleaning allowance. In addition, licensee management has instituted other licensee operator related incentive programs, such as enhanced compensation and increased operational staffing to reduce the level of overtime.

Licensee management was responsive to concerns derived from the MOS program. One MOS concern was the complacency associated with the continued acceptance of long term dc ground indications and alarms. Management directed the electrical shop to research industry efforts in this area. Subsequently, equipment was procured that had proven successful in locating dc grounds. Recent observations in the control room have shown that long-term dc grounds have been virtually eliminated, thus satisfying the licensee's commitment to the NRC to have all dc grounds cleared before the last Unit 4 refueling outage recovery.

Early in this SALP assessment period, there were four violations, covering a total of fifteen examples of operational events associated with failure to follow procedures and configuration control problems, including valves found out of position or clearances improperly handled. Management initiated several corrective actions to aid in identifying and reducing these events such as: Operations Department initiated independent verification of all clearances, administrative procedure revisions to strengthen clearances, and an event tracking system to trend individual and shift performance. Also, a policy requiring oral feedback of verbal orders during evolutions was instituted. These actions have reduced the number of problems in these areas and, during the latter part of this period, the number of operational events in this area decreased. Overall, the number of violations in operations remained approximately the same when compared to the previous period; however, it should be noted that the significance and the severity level of the violations decreased.

Inadequate component identification (i.e., tagging/labeling) has been a problem during the SALP period. Two recent labeling errors have contributed to plant events. In January 1989, while in the process of releasing a clearance, the RCO noticed Unit 3 pressurizer level decreasing after valving in the B RHR pump. The RCO had the nuclear operator close the pump discharge valve, which stopped the decrease in pressurizer level. Investigation revealed that two remote operated valves were labeled

identically. In June 1989, two inadvertent safeguard actuations occurred while re-energizing relay racks. The licensee's investigation revealed that the safety injection block switch had been mislabeled. The new label had been installed without following procedural checks and reviews. In response to these events, the licensee performed a component tagging/labeling review and, in the latter part of the assessment period, expanded the system engineer's responsibility by requiring them to perform monthly system walkdowns. As a part of their walkdowns, they are responsible for verifying that system tagging and labeling is correct. During routine inspections in the latter part of the SALP, the NRC observed system engineers performing system walkdowns and verifying the accuracy of system equipment and component identification tags and labels. There has been no other events attributed to inadequate component identification subsequent to the implementation of this practice.

In the last SALP period, management focused on near-term plant availability, rather than long-term plant reliability. Operators continually used compensatory measures and backup methods to operate the plant safely when equipment was not operating properly. These practices resulted in operators not taking a leadership role in the operation and maintenance of the plant. Management is now emphasizing plant reliability through improved equipment performance. An example of this is the Unit 4 refueling/reliability outage that started on September 20, 1988, and ended on June 11, 1989, where long-standing operational concerns/improvements were addressed. These Unit 4 improvements include the following: Main Steam Isolation Valve (MSIV) air accumulator modification, CCW heat exchanger replacement, RHR pump seal upgrade, installation of High Internal Response Exciter, installation of Reactor Head Leak Detection System, installation of automatic Turbine Plant Cooling Water (TPCW) isolation valves, pressurizer heater cable and connector replacement and repair, Control Rod Drive Mechanism (CRDM) cable and connector replacement, turbine control oil system cleanup, and repacking approximately 1400 and overhauling 200 Unit 4 valves. Also, Unit 3 was shut down on October 1, 1988, due to residual heat removal pump seal leakage and remained in the outage until February 3, 1989, to incorporate the following improvements: installation of CCW heat exchanger chemical injection system, replacement of pressurizer heater cabling and connectors, repair ICW flanges, and perform emergency diesel generator preventive maintenance and repairs.

During the SALP period, plant management has taken a conservative approach towards improving plant operation. The following examples demonstrate operational conservatism:

- Both units were maintained shut down to facilitate maintenance actions related to rewinding a turbine-generator rotor. The generator was not out-of-service; however, because of its degraded condition, the licensee elected to

reduce the risk of a turbine transient by performing the rewind operation.

- Licensee management decided to delay the Unit 3 restart to replace portions of the in-core flux detector guide tubes near the seal table as a result of signs of microscopic pitting on their surfaces.

- Due to concerns that had been identified regarding operation in mid-nozzle water level draindown configurations, the licensee committed that two reliable sources of shutdown cooling would always be available during the Unit 3 draindown for reactor coolant pump maintenance. This exceeded the licensee's technical specification (TS) requirements and was prior to the issuance of Generic Letter 88-17.

- On August 12, 1988, the licensee shut down Unit 4 to fix a leaking pressurizer spray line. The leak rate was significantly less than the TS requirement for shutdown.

- On October 11, 1988, licensee management delayed the Unit 4 core off-load in order to perform a 100% walkdown of containment penetrations. This action was initiated when the Unit 4 shift supervisor reported finding a test apparatus installed on a valve with the valve open and uncapped while performing a containment penetration alignment check before refueling.

The licensee was responsive to NRC concerns regarding excessive overtime. Overtime was routinely utilized during outages and forced load reductions and to fill shortages created by vacation periods or illnesses. Operations average overtime has now decreased from approximately 30% in early 1989 to approximately 23% in July 1989. Currently, there are sufficient licensed personnel for a five shift rotation.

The previous SALP report discussed the problem of reactor vessel head voids forming while the plant was in cold shutdown, and concluded that some previous voiding problems could have been precluded with proper valve alignment. The licensee responded by performing an investigation of subsequent sudden pressurizer level decreases that occurred while the reactor coolant system was vented. It was found that a gradual increase in pressurizer level had occurred prior to each event, which is indicative of dissolved gas being released into the reactor vessel and forming a void in the head area. Procedures have been changed to ensure the establishment of vent paths to minimize gas buildup prior to venting. The licensee has made improvements to reduce the voiding problem; however, due to the limitations of the system design, minor head voiding events still occur.

The Operations Department has implemented an in-depth plan-of-the-day meeting (POD), and improved shift briefings. As

a result, the site activities and goals are clearly understood and complex evolutions are performed smoothly.

The licensee implemented a program to critique each outage. The information gained is used to reduce the number of problems in future outages. This program is applied to forced short notice outages and load reductions as well as major refueling outages. The critique determines the overall outage effectiveness by comparing the schedule duration to the actual duration and activities completed versus the activities scheduled. Problems noted during the outage are documented in the critique report along with recommendations to solve the problem. In addition, the report identifies the individuals assigned the responsibilities for corrective action. Some thirteen observations were made during the July 17-22, 1989 forced outage. These observations included: over 70 items were added to the schedule after the outage began; of the 85 jobs actually performed, 20 activities exceeded their scheduled duration and 27 activities were completed ahead of schedule; and a positive point, the presence of management on the backshifts ensured priority jobs were worked. The licensee actions resulted in return of the unit to operation ahead of schedule.

The inspection of the fire protection features, fire detection systems, and firefighting equipment indicated that these features were in a state of readiness. For those features that were out of service, compensatory measures were established. The NRC staff witnessed an unannounced fire brigade drill. The fire brigade utilized proper manual firefighting methods and reacted to the fire drill scenario in an efficient and effective manner. However, one weakness, leaking isolation valves, was identified in the fire protection program. A deviation was issued because of the inability to perform certain maintenance evolutions and repairs to the firemain without removing the entire system from service. In an effort to preclude system shutdown, the licensee has issued a leak test procedure for identifying leaking post indicator (isolation) valves. The control of combustibles and flammable materials and general housekeeping were found to be very good. Several brigade members did not receive their required training within the three month interval. In addition, procedural requirements to disqualify ineligible members from duty were not implemented and this resulted in a violation. The licensee has evaluated these deficiencies and corrective actions have been implemented.

Ten violations and one deviation were identified in the area of plant operations.

2. Performance Rating

Category: 2

3. Recommendations

None

B. Radiological Controls

1. Analysis

During the assessment period, inspections were performed by the resident and regional inspection staffs. There were four routine inspections by the Regional Office staff including: two routine radiation protection audits, a radiological effluents and chemistry inspection, and a confirmatory measurements inspection. In addition, NRC health physics personnel participated in special team inspections reviewing licensee activities associated with maintenance issues, allegations, implementation of the site's "As Low as Reasonably Achievable" (ALARA) policies, and reactive response to an accidental liquid release from the spent fuel pool.

The licensee's health physics (HP) organization and the staffing levels, consisting of licensee and contract personnel, were adequate to provide routine radiation protection coverage activities. The licensee continued to reduce the number of contract HP personnel with a concomitant increase in the permanent staff utilized for the performance of routine radiation protection activities. During this SALP period, all supervisory vacancies, including the Health Physics Supervisor's position, had been filled. The turnover rate among HP personnel remained low with the HP foreman and first-line supervisors knowledgeable of their responsibilities within the organization.

The knowledge and experience levels of the site health physics staff were adequate to maintain appropriate radiological controls. The number of technical support engineers within the HP organization has increased since the previous assessment period and has improved the licensee's timeliness in addressing and resolving technical issues. For example, licensee actions regarding NRC followup items for the bioassay program; the development of procedures for, and setup of analytical whole body counter; and sample counting instrumentation upgrades, were being addressed by onsite HP engineers. Weaknesses with the HP training program involved the need to establish periodic retraining requirements for contract technicians and the maintenance of training record files. These were noted during a special maintenance team inspection (MTI) and identified as a violation.

Management support and involvement in matters related to radiation protection and radioactive waste management have improved since the previous SALP period. Significant upgrades have been made to facilities and equipment to include the completion of an upgraded climate-controlled facility and upgraded equipment for whole body analyses. Licensee management was aware of radiological performance parameters which are trended on a weekly basis, such as the number of personnel contamination events, current dose expended, and contaminated floor space area. Management demonstrated an increased direct involvement with

radiation protection program concerns late in the assessment period. At that time, licensee audits identified several examples of noncompliances associated with radioactive waste shipping and transportation activities. Licensee actions involving the site's upper management were prompt, with appropriate corrective actions initiated or completed prior to the end of the licensee's audit.

The lack of timeliness in completing the licensee's upgrade of HP procedures is regarded as a weakness. At the end of this SALP period, only 34 HP procedures had been revised and 124 were remaining for revision and scheduled for completion in 1991. During this SALP period it was observed that, upgrades of the plant's radiation protection and radioactive waste packaging/transportation procedures were needed as demonstrated by licensee and NRC audits. These audits identified several procedural deficiencies which decreased the quality of the operations associated with the radioactive waste program.

During the SALP period, the licensee's radiation work permit and respiratory protection programs were determined to be satisfactory. However, planning requires continued management attention as indicated by inaccurate man-hour estimates for completion of tasks and the excessive containment entries while at power were required to perform maintenance activities.

During the assessment period, licensee activities associated with increased efforts to reduce radiation exposure were reviewed. A special team inspection detailed strong management support for the ALARA concept, improved dose reduction methods such as the use of ALARA Zone Coordinators during outages, and increased personnel accountability for reducing exposure by integrating the ALARA concept into worker performance reviews. However, the inspections indicated some program weaknesses including, a large area of the radiologically controlled area (RCA) maintained as contaminated, lack of formal procedures for the ALARA program, and lack of attendance at the ALARA Coordinating Committee meetings. To address concerns with licensee involvement in planning, a person with a health physics background was assigned to the Maintenance Department.

Although management has increased efforts to reduce contaminated areas within the facility, this facility continues to maintain a relatively large percentage of the total floor space as contaminated. This area was identified as a program weakness. At the end of the previous SALP period, the licensee tracked a total RCA floor space of 69,100 square feet (ft^2) and maintained approximately 16% or 11,056 ft^2 as contaminated. In comparison, at the end of this SALP period, the licensee tracked a total RCA floor space of 97,344 ft^2 and maintained approximately 19% or 18,495 ft^2 as contaminated. The licensee, in an effort to understand root cause and to reduce contaminated floor space, changed their tracking methods resulting in the increase in total RCA floor space reviewed for 1989. The licensee considers

the 19% contaminated floor space to be unacceptably high and has consequently developed an action plan to reduce and maintain a lower level of contaminated area within the RCA.

For 1988, the licensee reported 384 personnel contamination events (PCEs). The higher number of PCEs was attributed to extensive outage activities and to better detection capabilities through the installation and use of whole body friskers at RCA control points. This performance parameter has received increased management attention. As of July 1989, licensee records indicated 110 PCEs versus a licensee's projected goal of 144 PCE events.

During the last SALP period, the site's collective radiation dose was 659 person-rem or 329 person-rem per reactor. During this SALP period an increase in person-rem was noted. The site's collective radiation dose increased to 860 person-rem or 430 person-rem per reactor. This increased collective dose can be attributed to the increase in the number of outage days. The site had 278 outage days in the previous SALP period as compared to 497 in this period.

For 1989 the projected dose for both units was expected to be approximately 790 person-rem as measured by self-reading dosimeters (SRDs). As of May 30, 1989, the licensee reported a total dose expenditure of 308 person-rem for site activities. In addition, the projected 1989 dose was revised downward to approximately 606 person-rem as a result of reduced outage activities.

Management support was indicated through provision of a strong training program for the Chemistry Department and implementation of a management control system to ensure an aggressive chemistry program. Documentation of chemistry parameters provided a highly visible means of tracking plant chemistry and calling attention to anomalies.

During the period, a confirmatory measurements inspection was conducted using the Region II Mobile Laboratory. In general, good agreement was found for the comparisons. The licensee continued to upgrade Chemistry Count Room instrumentation by the addition of a new intrinsic germanium gamma detector and a upgraded multichannel analyzer computer.

During this SALP period, a special reactive inspection was conducted in response to the accidental release of radioactive liquid from the spent fuel pool (SFP). The root cause of the accidental release was determined to be the failure of SFP pump 4A. Licensee strengths identified during the inspection included the rapid and effective response of HP personnel in controlling the spread of contamination resulting from the event and prompt formation of a technically competent Event Response Team.

Radiological effluents for the past three years are shown in the Table in Section H of this report. The overall trend is down for those parameters shown. Gaseous tritium appeared to increase during 1988, but the licensee determined that this was due to measurement errors caused by varying airborne contamination affecting background values. The licensee evaluated this problem and implemented corrective actions.

One violation was identified in the area of radiological controls.

2. Performance Rating

Category: 2

3. Recommendations

None

C. Maintenance/Surveillance

1. Analysis

The NRC staff is undertaking a major program to inspect and evaluate the effectiveness of licensee maintenance activities. As part of this program, a special maintenance team inspection was conducted in November and early December 1988. This analysis also encompassed those routine inspection activities conducted by the resident and regional inspectors during the assessment period.

In the area of maintenance personnel staffing, turnover, and overtime rates, management has taken positive action during this period. Improvements in staffing levels have been made. The current staff for the three maintenance disciples is very close to the authorized level; however, the turnover and overtime rates continue to be high.

Operator training opportunities have accounted for a high turnover of I&C specialists. Since the currently filled operator training class should supply Turkey Point's operator needs for some time, departures for this reason should decrease. In addition, experienced individuals for I&C supervisory positions (I&C Supervisor, Assistant I&C Supervisor, Production Supervisor, and Planning Supervisor) have been recently selected. During this SALP period, there have been two changes in the position of Maintenance Superintendent.

Completing preventive maintenance (PM) work in a timely manner had not been very successful during the previous SALP. As of July 27, 1989, the backlog of overdue PMs has been reduced from approximately 300 to 32. This improvement is attributed to increased management involvement which requires the Maintenance Superintendent approval if a 25 percent grace period is to be

exceeded. Plant Manager approval is required for grace periods beyond 50 percent. The licensee continues to strive to increase the PM/PM+CM ratio to meet their goal of 60%. Throughout this SALP period the ratio has increased/improved from about 20% in June 1988 to about 55% in June of 1989. As this ratio increases, the licensee expects to reduce the number of Equipment Out of Service which is constantly higher than the site goal of 30 components total. A new initiative to further enhance the PM program is the Critical Component Study which is designed to identify and analyze components of greatest impact on the mean time between failure (MTBF). Identified components will then be added to the PM program to improve the MTBF and decrease unplanned shutdowns. Some examples noted included RHR Pump seals and emergency diesel generator fuel system. Because of these initiatives and others, MTBF has shown a dramatic improvement during this SALP period.

Early in the assessment period management centralized planning and scheduling within the operations department. The group is staffed with SRO qualified personnel. This new initiative has effectively strengthened maintenance planning and scheduling, particularly for priority items. In addition, maintenance work activities starting and completion schedules were improving.

Increased management attention was directed to the area of weakness noted during the previous SALP cycle in the Plant Work Order (PWO) process which resulted in noted improvements in this period. Generally, the PWO process is a well organized program however, examples of errors in the implementation and final documentation of the PWO as historical records were identified during the Maintenance Team Inspection (MTI) and contributed to a violation being issued. The PWO backlog continues to remain above the licensee's goal of 700. Approximately 1000 corrective maintenance PWOs existed at the end of this SALP period which is about the same as the last year's backlog. The extended dual unit outage conducted during this assessment period contributed to this indicator remaining constant during the period. Although the backlog has remained fairly constant, it is down considerably from an average of about 1900 in early 1987.

A dramatic improvement was noted in the program developed late in the last SALP cycle to reduce the large number of control room deficiency tags. A team was established late in the last SALP cycle to reduce the number of tags from a high of about 255 to less than 100 by the end of 1988. This goal was met and the total number of tags at the end of this SALP was 95. This reduction was due to management increasing I&C contractor support within the department allowing licensee I&C technicians to focus on control room green tag issues. Additionally, engineering dedicated a group to evaluate control room green tags to determine if training, procedure or design changes were necessary to achieve the established site goal of reducing the number of control room green tags. Management has established a

goal of 70 for 1989 and is aggressively pursuing to continue the downward trend to meet this new goal.

Spare parts continues to be an an area where management attention is required. This weakness was documented in the Maintenance Inspection Team findings and is apparent from observation at the daily POD meetings. On April 12, 1989, a team from the Maintenance, Engineering, Stores, Purchasing, QC and Construction Departments was organized under the direction of the Plant Manager to determine the causes of spare parts availability problems and identify ways to correct them. Deficiencies identified by the licensee's team were similar to those identified by the Maintenance Inspection Team which included: Large numbers of obsolete or unqualified parts in Stores; purchase order processing time took too long; and often needed parts with long procurement times were not available in Stores. From a safety aspect, no commercial grade components were identified which were used to replace safety grade equipment nor were any non EQ components identified in other than proper applications. The licensee has taken action to improve the availability of spare parts by identifying parts needed for outages and ordering these parts, initiating purchase orders for items which are below minimum stock levels, and accelerating efforts to identify and remove obsolete parts from inventory. The total number of Corrective Maintenance PWOs in a hold status due to "awaiting parts" was 135 in June of 1988 and had decreased to 115 at the end of the SALP period in July of 1989. While this improvement is a significant positive step, continued management attention is required.

Management involvement in assuring quality was generally good, however, areas were identified where continued management attention is required. A good deal of emphasis is placed on foreman and supervisors to perform peer inspections of work activities being performed by journeyman. The observation of work activities in progress and a review of entries into important plant areas indicate a inadequate amount of time is being spent doing these functions. The results of the MTI identified inadequate supervisory involvement in maintenance department activities as a major contribution to poor implementation of maintenance programs. The licensee contracted an outside consultant, with extensive nuclear maintenance management experience, to assist Turkey Point's maintenance management in enhancing the effectiveness of the maintenance program and provide recommended approaches in areas where supervisory weaknesses were identified. In response, the licensee has implemented several of these recommendations including the use of a checklist used by maintenance supervisors before, during, and after each job to ensure supervisory involvement.

Surveillance procedures were generally good with these few exceptions identified by the MTI. Weaknesses in the maintenance and surveillance procedure upgrade program (PUP) in the area of technical reviews and procedure validation were identified.

This was evident by the higher than expected number of the spot changes (OTSC) to procedures, stop work orders, and the amount of rework required. On a positive note, surveillances in the area of snubbers and pipe support/restraints showed they were conducted with well written procedures, adequate pre-planning and engineering support to resolve problems during testing. The Technical Specification (TS) required surveillance program was routinely reviewed by the NRC staff. With one exception, the program was found to be conducted in a timely manner. Overall, test personnel were knowledgeable of the surveillances they were performing and routinely followed procedures. The licensee's manual tracking of surveillances has been effective. Excessive use of surveillance grace period was discussed in the previous SALP and to improve performance in this area the licensee is now using the POD meetings to formally schedule surveillance activities. Improvements have been noted.

Rework continues to be an area that causes unnecessary use of manpower and exposure. For example, a Health Physics study of total unnecessary exposure by symptom, during the Unit 4 refueling outage, showed that the leading contributor was poor workmanship, which was twice as high as the next indicator, inadequate engineering. Although rework may be due to a design deficiency, the licensee needs to perform a more in-depth root cause analysis for repeat work items. Examples of rework include, lapping MOV-3-350 seats, Unit 3 safety injection pump leaks, pressurizer spray valve repairs, pressurizer steam space sample valve CV-3-951 failed LLRT four times, pressurizer level transmitters LT-461 problems on both units, and unit 3C charging pump packing problems. If the component failure is significant enough for the licensee to initiate an Event Response Team (ERT), the root cause analysis is usually excellent. The ERTs perform an in-depth analysis which identifies numerous possible root causes which are then evaluated to determine the most probable root cause or causes, then corrective actions are assigned and implemented. However, if an ERT is not formed, root cause analysis is sometime lacking and the component is merely repaired rather than eliminating the cause of the failure. The licensee has increased the system engineering staff who are now required to become involved in root cause analysis for failures in their systems and devise solutions to prevent recurrence. In addition, the licensee started tracking rework as a performance perameter late in the SALP cycle to allow for trending to determine when additional emphasis is required.

Weaknesses in the inservice test (IST) program were identified during the assessment period. The licensee did not initiate corrective action to increase test frequency when two containment isolation valves exceeded prescribed stroke times. In another case pressurizer safety valve (Unit 3 and 4) ring settings, which control the design flow and blowdown were not properly set. In addition, procedures were not revised to provide the correct ring settings. A review of maintenance history indicated that root cause analyses of valves that failed

their IST were not always adequate. As stated in the previous paragraph, the system engineer is now required to be involved in root cause analysis for failures in their systems.

The inservice inspection (ISI) program was examined during an outage for Unit 4 (November 1988). Management involvement in assuring quality was evident as demonstrated by the effective welding, eddy current examination, and well documented NDE results associated with the Unit 4 steam generator tube inspection. The ISI program is staffed with qualified and experienced personnel. The training and qualification of NDE personnel conducting ultrasonic examinations was found to be superior when compared with other nuclear facilities.

Post-refueling startup testing activities were reviewed for Unit 4, Cycle 12. All zero power physics testing met design predictions and the test methods used were found acceptable. The licensee continues to maintain a sound approach to post-refueling startup activities.

Seven violations were identified in the area of maintenance and surveillance.

2. Performance Rating

Category: 2

3. Recommendation

Spare parts continues to be a weakness. Increased management attention is needed in correcting the problems associated with the availability, purchase order processing, and procurement of qualified spare parts.

D. Emergency Preparedness

1. Analysis

During the assessment period, inspections were performed by resident and regional inspection staffs. These included two unannounced emergency preparedness program inspections conducted in January and July 1989. No emergency response exercise was conducted during this SALP period. (The last exercise was in February 1988, and the next is scheduled for November 1989.) One change (Revision 17) to the Radiological Emergency Plan (REP) was reviewed.

A special inspection was conducted by the regional staff following an incident on January 7, 1989, involving a Reactor Coolant System (RCS) leak on Unit 3. Because the subject event met the applicable criterion for the Alert classification (i.e., RCS leakage exceeding 50 gpm), a violation was identified for failure to promptly declare an emergency and provide notifications to the State, counties, and NRC, as specified by the

Emergency Plan Implementing Procedures (EPIPs). The licensee's response to this event indicated a poor understanding on the part of the operations staff regarding the intent of regulatory requirements and their own EPIPs with respect to declaring and reporting a short-lived emergency condition which is resolved before a declaration can be made. The licensee's failure to promptly declare and report the RCS leak of January 7, 1989, resulted not from oversight but from a faulty decision by Operations management personnel. Corrective actions involving special training and procedural revisions were satisfactorily implemented prior to the end of the SALP period.

Walk-through interviews conducted during the July 1989 inspection with two shift supervisors indicated that the procedures for classifying emergencies and deriving protective action recommendations were adequately designed and were understood by the designated shift operations personnel. Both interviewees correctly classified all hypothetical events presented to them, provided the appropriate protective action recommendations for the public, and exhibited a good working knowledge of the REP and the EPIPs. The previously referenced special training was effective in dispelling misconceptions regarding implementation of the REP for emergency events of short duration.

Inspections also determined that the following emergency preparedness programmatic elements were in place to support an adequate response to events: notification/communications capabilities; the REP and its implementing procedures; emergency response facilities and associated equipment, instrumentation, and supplies; training; and public information program. There were generally clear indications of management attention to the maintenance of an adequate emergency preparedness program.

One violation was identified during the assessment period.

2. Performance Rating

Category: 2

3. Recommendations

None

E. Security and Safeguards

1. Analysis

Authority and responsibilities associated with the security program are clearly delineated in site security plans and implementing procedures. The site's contract security force is adequately manned to provide protection of vital resources in accordance with licensee commitments and regulatory requirements. The facility Guard Training and Qualification Plan is implemented on a continuing basis by adequately utilizing the

appropriately staffed security training function. The licensee has provided the security force with adequate procedures. Security Plan changes, with one exception, have been submitted on a timely basis and security records and related documentation in general are adequately maintained.

Inspections conducted during this period identified the extent and scope of the security program deficiencies continued from the previous SALP period which were demonstrated by the repeated occurrence of violations relating to security personnel sleeping or being inattentive on post, failure to control access to vital areas, inadequate vital area barriers and compensatory measures, and failure to provide adequate protection for Safeguards Information. Evaluation and analysis by the licensee and licensee employed management consultants have identified several causative factors that contributed to the weaknesses and marginal performance of the security force. Inspections have shown however, that a lack of strong security management at the organization level and inadequate security shift level supervision, during the major portion of the period, have been the primary deterrent to security program effectiveness and in some respects, have contributed to the repeated occurrence of access control violations. During the latter part of the SALP period, the results of significant effort by senior corporate and site management to improve the security program have become apparent. Security compensatory measures are discussed in the POD meetings and are given priority for corrective action. A new experienced Security Manager was hired and reported on site in July 1989. All security shift supervisors have received training in leadership and personnel utilization functions, and several initiatives to enhance security personnel motivation and work ethics have been adopted. The draft upgrade plans are very thorough and will constitute a major improvement in existing hardware when implemented. Improvements also include redefinition of vital areas and new barriers to protect vital equipment. The licensee, as apart of their upgrade program, has relocated the site access road away from the perimeter fence and completed the construction and installation of the bridge across the discharge canal. The upgrade program modifications are scheduled to be completed and fully operational by December 1991.

Further efforts to improve the security program include the establishment of a joint corporate and site steering committee and task force that meet on a weekly basis to review the security program status and provide timely direction and guidance in the resolution of identified security issues and implementation of security program enhancements, and improvements. The task force action has resulted in a reduction in the security personnel turnover, compensatory hours, compensatory post, and loggable security events.

During the SALP period, one region-based inspection was conducted in the area of Material Control and Accountability

(MC&A) at the Turkey Point Nuclear Station. The inspection results indicated that the licensee had established, maintained and followed written MC&A procedures for controlling and accounting for fuel and non-fuel special nuclear materials (SNM). These procedures covered receipt, storage, shipment, internal transfers, inventory and inventory burn-up calculations, record keeping and reporting. Turkey Point adequately tracks and accounts for SNM onsite, including items containing less than one gram U-235. The licensee properly documented and reported required inventory change reports and material balance information, and has maintained an adequate staff which is familiar with their assigned functions.

While the nine physical security violations identified during this rating period was greater than the number for the previous period, a decrease in the significance and severity level of the violations was noted, although two of the violations were repeat occurrences of previously cited violations. Analysis indicates that the majority of the violations continue to be attributable to errors by individual members of the security force relative to adherence to procedural requirements. These violations indicate a need for additional management oversight and line supervision at the security shift level.

2. Performance Rating

Category: 3

Trend: Improving

3. Recommendations

Increased licensee attention to reduce compensatory measures is required to improve security performance.

F. Engineering/Technical Support

1. Analysis

The Engineering/Technical Support functional area addresses the adequacy of engineering and technical support for all plant activities. It includes licensee activities associated with plant modifications, technical support provided for operations, maintenance, configuration management and training. This evaluation is based on routine and special inspections conducted by the NRC in this area and related functional areas.

Management initiatives to improve engineering support have resulted in increased effectiveness of the support function during this SALP period. Florida Power and Light staffing of the corporate engineering organization has been increased. This increased staffing has resulted in a reduction of contract personnel, and has improved continuity of engineering expertise. In response to NRC identified deficiencies in initial

operability reviews of plant requests for engineering assistance, management has implemented programatic requirements for initial operability reviews. Additionally, an effective prioritization program for the backlog of engineering assistance requests was initiated. These programatic improvements resulted in more effective engineering support of plant goals (i. e. there were no open requests for engineering assistance (REAs) which presented an operability concern associated with the restart of Unit 4). In addition, a performance data trending program was initiated late in the assessment period to facilitate increased proactive engineering support and enhanced plant systems reliability.

In response to drawing deficiencies identified early in the SALP period, resources were provided for a drawing update program which determined the scope of this weakness and resolved identified deficiencies. The corrective action plan for this deficiency was comprehensive and an NRC review of this activity later in the assessment period identified that although some deficiencies existed, the performance was adequate.

The Independent Management Appraisal (IMA) identified the need to strengthen the system engineer program. The reasons identified for this weakness were minimal system design training, frequent changes in responsibility for assigned systems, and insufficient physical walkdown of systems. Additionally, it was noted that the responsibilities for system engineers were not formally documented, resulting in undefined performance objectives. Management has increased the system engineering staff. These weaknesses demonstrate that although management readily assigned resources to improve performance of system engineering activities, more planning was required to effectively utilize these resources (i.e., programatic and administrative weaknesses existed in this program). The concerns identified by the IMA have been addressed by the licensee and have been scheduled for completion. System engineers are assuming an active role in maintaining systems reliability via real time involvement in system operational and design activity.

Although some deficiencies were identified, general plant support by the engineering organization has been adequate during this SALP period. The disposition of plant nonconformance reports, (NCRs) by engineering has improved with respect to timeliness and operability review performance. Management actions, previously discussed in this section, to address the backlog of plant requests for engineering assistance have been effective.

Followup and resolution of EQ findings demonstrated that the engineering staff was knowledgeable of EQ issues. Identified EQ findings were adequately resolved. The lack of design related ALARA training was identified as a programmatic deficiency. The investigation and resolution of chloride-induced stress

corrosion cracking of thimble guide tubes demonstrated timely and technically competent engineering support of plant issues.

Design change development activity of the engineering organization has been adequate with the exception of some implementation deficiencies and inconsistent post modification testing specifications in modification packages. For example, the implementation of the nitrogen back-up system modification to the overpressure mitigation system required numerous design changes before the implementation was accepted. An inability of engineering to substantiate design calculations for component cooling water heat exchanger replacements and failure to detect errors in thermoweld stress calculations resulted in a violation. In addition, a problem was identified with the IST program in that an open stroke time for the Power Operated Relief Valves (PORV) which exceeded the design basis for the Overpressure Mitigating System (OMS) was being used and the analysis to determine the required stroke time was not timely. This resulted in a violation being issued. However, the majority of plant modifications reviewed during the assessment period were adequately developed and documented.

In late 1988, the licensee decided to perform a Probabilistic Risk Assessment for the plant. In June 1989 a contract was awarded for the work. The licensee has formed its own permanent group which includes new staff from outside FPL to oversee and participate in the PRA study. The licensee has decided to go beyond the guidance of NRC Generic Letter 88-20 by including the risk of fire and hurricanes in the scope of the study. This effort should improve the licensee's understanding of the relative safety importance of various plant systems.

Inspections and examinations were conducted in operator licensing during this SALP period. These activities have identified a strong initial licensing program and a weak requalification training program. Additionally, the plant simulator was identified as a high quality training resource which provided accurate simulation of plant hardware and responses.

Early in the SALP period, initial examinations were administered to 11 SROs and three ROs. Only one SRO failed this examination. This success rate and the lack of identified generic weaknesses during this exam are attributable to the large amount of simulator time provided to the initial licensing group.

Requalification program weaknesses identified in this SALP period were primarily due to inadequate requalification training. Training program inadequacy was demonstrated by the high failure rate of requalification examinees. Twelve of 24 licensed individuals and three of six crews failed the requal examinations. Requalification program weaknesses identified included emergency operating procedures, operator immediate actions, emergency plan implementation, and insufficient simulator training.

The poor quality of the Training Department's requalification examination administration was an additional element of requalification program weakness. Several instructors were unsatisfactory in their evaluation of operator performance. For example, the instructors prompted the examinees into correct answers during walkthrough examinations. The NRC observation team had to significantly modify exam questions (i.e., questions lacked focus and were poorly worded). Some simulator scenarios improperly identified critical tasks required by NUREG 1021. Also, Emergency Operating Procedure Job Performance Measures were inadequately identified. For example, performance of local trip of main generator output breaker and closing of the Boron Injection Tank inlet isolation valves were not identified as Job Performance Measures.

Management support and involvement in the training program was inadequate, as evidenced by their failure to adequately assess the requalification needs of licensed operators. This inadequate assessment resulted in operator evaluation criteria being set too low and inadequate allocation of training resources, i.e. simulator time, to provide for development of required operator skills. In the latter portion of the assessment period, staff shortages were identified as a contributing factor to training deficiencies. The licensee is increasing staffing. The licensee has taken corrective actions to retrain operators, revise the requalification training program (including increasing simulator time 50%, adding JPM training and evaluations, and adding training in open reference exams), aggressively recruit new operators, and reorganize. In addition, a new Training Superintendent has been hired who has a strong background in training and came from a facility which had a highly rated training program.

Four violations were identified in this area.

2. Performance Rating

Category: 2

3. Recommendations

Additional management attention is required in the area of training. Specifically, more simulator time is required in the operator requalification program.

G. Safety Assessment/Quality Verification

1. Analysis

During the SALP period, inspections were performed by the resident and regional inspection staffs and licensing reviews were conducted by the NRR staff. Inspections evaluated the licensee's corrective action program, performance of appropriate safety evaluations, root cause analysis of plant events, the

corporate offsite independent review group's functions, the licensee's on-site safety committee functions, and the quality function as used in the monitoring of the overall performance of the plant.

The plant QA organization is divided into two sections. The Regulatory Compliance Section and the Performance Monitoring (PMON) Section. The Regulatory Compliance Section consists of eleven experienced auditors. This Section is responsible for performing the traditional QA audits. During this SALP period the group performed two Vertical Slice Audits, which are similar to NRC Safety System Functional Inspections. One was on the ICW System and the other on the Chemical and Volume Control System. These audits provided an in-depth look at all aspects of the system, from design through operations. The audits identified 15 and 13 findings, respectively. The Compliance Section also performed an extensive audit of the EQ program prior to the NRC EQ team inspection. Additionally, at the end of the SALP period, the compliance section was performing a Fire Protection audit in preparation for the NRC Appendix R inspection. They are also involved in the licensee's assessment of IMA corrective actions to assess program quality, implementation, and progress. One direct result of these licensee conducted inspections was the overall positive performance by the site on a subsequent NRC conducted EQ team inspection. Additionally, the group routinely reviews NRC violations cited against other licensees to determine if the same findings may be applicable to their facility. In one instance a similar problem was found and prompt corrective action was taken to resolve the issue.

The PMON Section consists of nine auditors that provide more of a Quality Control (QC) role by monitoring plant operation, maintenance, security, balance of plant, and root cause analyses on technical issues. During this period significant efforts were dedicated to event root cause analysis including: SFP pump failure, hydrogen seal oil failure, ICW pipe flange cracking, RHR pump seal failure, and chlorides on the seal table. During the first part of the SALP period, this group's efforts were geared mainly to operations with an auditor assigned to monitor control room activities for two manhours per working day. The priority now has been shifted to maintenance with auditors specifically assigned to monitor maintenance activities. In addition, the group assigned an individual dedicated to security with emphasis placed on reducing compensatory posts and securing safeguards information.

Licensee program weaknesses in the areas of maintenance and radiation control practices during the inspection included the inability of the maintenance staff to identify a common root cause of six essentially identical major failures of the SFP pump 4A from 1975 through 1981; failure to recognize and remedy the recurrent problems of radioactive or potentially radioactive water backing-up from the Auxiliary Building floor drains; and failure to identify and remedy Co-60 contamination to SFP water.

During this SALP period the licensee generally provided timely, sound responses to NRC generic letters and bulletins. However, there were several exceptions. The following are examples of these exceptions:

- In an August 10, 1988 letter, discretionary enforcement was sought by the licensee for replacement of a containment spray pump pull-out assembly. The technical justification was poor. It required a conference call for the NRC staff to establish the technical basis for granting the request. The licensee did not seem to be addressing the technical safety aspect as much as the administrative, regulatory, and licensing reasons for continuing to operate while the repair was being made.

- On September 19, 1988 a conference call was held to discuss discretionary enforcement because PORV stroke time did not meet the 2 seconds assumed in the HPCI pump overpressure analysis. Again, the licensee's request was based on administrative licensing reasons and did not discuss the technical bases which would justify continued operation.

- On September 21, 1988 the licensee submitted a license amendment to revise Pressure/Temperature (P/T) limits to apply to 20 full-power years. The existing licensed P/T limits were to expire for Unit 3 on October 28, 1988. This amendment request was not timely and should have been submitted earlier in order to support the NRC review process. In addition, the No Significant Hazards Consideration Analysis (NSHC) was technically weak, citing the regulations but without much technical bases for the stated conclusions.

- On February 21, 1989 a formal response to Generic Letter 88-14 (instrument air) was due to the NRC. Late that same day the staff was notified verbally that the response would be late. The next day a response date commitment of March 10 was made, which was then met.

Further improvements can be made, by getting firm control of submittals, and by improving the technical safety bases for NSHC evaluations and justifications for continued operation.

Overall, the licensing staff has improved its interface with NRC during this SALP period. Following the IMA in early 1988, a noticeable improvement began to develop in responsiveness, attitude, and communications with the NRC staff, and this has continued to improve.

An area of improved performance is the Technical Specification Improvement Project. In this SALP period, with the involvement of the new Plant Manager, decisions were made, and an FPL final draft TS, was completed and certified to NRC to be consistent with the FSAR and as-built plant. The licensee demonstrated

appropriate management involvement during the series of meetings on proposed upgrades to the technical specifications by ensuring that a proper mixture of licensing and technical expertise was present. Several meetings were held on this subject and, in all cases, the attendees were responsive to NRC concerns and had an appropriate understanding of the technical issues.

The licensee was responsive in supporting several special NRC audits. These included audits of: the boric acid corrosion problem, pipe thinning due to erosion/corrosion, the use of Rosemount transmitters, implementation of the IMA recommendations, and 50.59 evaluations. In all of these areas, the licensee's performance was satisfactory. The licensee also supported several large management meetings with NRC at the site to discuss progress in a wide range of issues. These meetings required significant preparation and resources by the licensee. The technical presentations were generally substantive, well-prepared, and helpful.

Generally, the analysis in LERs are more in depth and more thorough than in previous SALP periods. In addition the licensee has shown improvements in identifying previous occurrences (repeat events).

In response to the IMA recommendations, which were developed in early 1988, the licensee submitted its response (commitments) to the NRC in August 1988. This has been followed up with detailed internal management plans to implement the commitments. Individual responsibilities and schedules have been established for each commitment. In discussions with the site and corporate Quality Assurance organizations, it is clear that there is a careful and detailed quality verification process underway to assure complete implementation. The NRC has initiated plans to verify the IMA commitments have been met.

Prompted by employee concerns, the licensee has developed an expanded program for employees to report any safety concerns about the plant. The NRC has reviewed this program and found it to be adequate. This program should be of great assistance in identifying problems, assuring they are resolved, and boosting employee morale and confidence in the management.

Two violations were identified in this area.

2. Performance Rating

Category: 2

3. Recommendations

None

V. SUPPORTING DATA

A. Escalated Enforcement Actions

1. Civil Penalties

Severity Level III violation, 50-250,251/88-31-01, $100,000 civil penalty issued for failure to control access to a vital area.

2. Orders

None

B. Management Meetings

August 18, 1988 - Meeting held at NRC headquarters to discuss the Technical Specifications revision project.

August 30, 1988 - Meeting held at NRC headquarters to discuss planned improvements to the emergency electrical system.

November 14, 1988 - Enforcement Conference held at Turkey Point to discuss the failure to control access to a vital area.

November 14, 1988 - Meeting held at Turkey Point to discuss overall plant status, equipment issues, and the management on shift program.

January 12, 1989 - Meeting held at Turkey Point to discuss overall plant status, technical specifications, drawing update program, spare parts, and configuration control.

January 25, 1989 - Meeting held at NRC headquarters to discuss the Technical Specifications revision program.

March 16, 1989 - Meeting held at Turkey Point to discuss overall plant status, recent operational events, spare parts, maintenance, and security.

March 29, 1989 - Meeting held at Region II to discuss the unsatisfactory results from the operator requalification examinations.

April 18, 1989 - Meeting held in Region II to discuss the emergency plan and emergency classification table.

April 28, 1989 - Meeting held in Region II to discuss the implementation of the independent management appraisal recommendations.

May 5, 1989 - Meeting held in Region II to discuss health physics issues.

May 10, 1989 - Meeting held at Turkey Point to discuss significant programatic issues.

May 15, 1989 - Meeting held in Region II to discuss the operator requalification program.

July 19, 1989 - Meeting held at Turkey Point to discuss management issues, maintenance, engineering, training, and security.

C. Confirmation of Action Letters (CAL)

March 30, 1989 - CAL issued regarding the actions to be taken to assure the qualifications of reactor operators.

D. Review of Licensee Event Reports (LERs)

During the evaluation period, 41 LERs for Units 3 and 4 were analyzed. The distribution of the events by cause, as determined by the NRC staff, was as follows:

Cause	Total
Component	10
Design	9
Construction, fabrication or installation	2
Personnel:	
- operating activity	6
- maintenance activity	1
- Test/calibration activity	5
- Other	1
Other	7
	41

The NRC office for Analysis and Evaluation of Operational Data (AEOD) reviewed the LERs received during the SALP period for Turkey Point Units 3 and 4. Of the LERs reviewed, six were considered to be significant by AEOD's screening process. It was noted that five of the LERs involved spurious or inadvertent actuation of the control room and/or containment ventilation system for different reasons. The licensee has modified the control room ventilation system radiation monitors to preclude this type of event in the future. Three LERs were associated with defeating a safety system during maintenance or testing activities (i.e., taking dissimilar cross-tie equipment out of service or closing a valve common to both trains). Also, several LERs, including LERs in previous SALP periods, discussed the failure of a seal in a boric acid transfer pump. LERs 250/88-15 and 250/88-18 were scheduled for supplements on December 31, 1988 and April 1, 1989 respectively however, no supplemental reports have been submitted to date. The licensee is currently preparing the supplements to these

LERs. One event in August, 1988, "Leak due to Failure of Spent Fuel Pit Cooling System at Turkey Point Unit 4", was reported to Congress as an Abnormal Occurrence, Appendix C Item, NUREG-0090, Volume 11, No.3, January, 1989.

E. Licensing Activities

During the evaluation period, the staff completed 32 licensing actions. Of these there were 10 licensee amendments, 2 exemptions, 6 multi-plant actions, and 14 other licensing actions. There were no relief requests made by the licensee.

F. Enforcement Activity

Functional Area	No. of Deviations and Violations in Each Severity Level					
	Dev.	V	IV	III	II	I
Plant Operations	1/1	2/2	7/8			
Radiological Controls		1/1				
Maintenance/Surveillance			6/7			
Emergency Preparedness			1/1			
Security			8/8	1/1		
Engineering/Technical Support			4/4			
Safety Assessment/Quality Verification			2/2			
TOTAL	1/1	3/3	28/30	1/1		

G. Reactor Trips and Unplanned Shutdowns

Unit 3 experienced three unplanned manual shutdowns and one unplanned reactor trip this evaluation period. Unit 4 experienced three unplanned manual shutdowns, was manually taken off line once and had one unplanned reactor trip during this evaluation period. The unplanned trip and shutdowns are listed below.

1. Unit 3

Reactor Trips

February 10, 1989, the unit scrammed from Mode 2 (0% Power) due to procedural deficiency while conducting a steam generator protection channel periodic test.

Unplanned Reactor Shutdowns

October 1, 1988, the unit was manually shut down due to excessive leakage from the 3A residual heat removal pump.

February 9, 1989, the unit was manually shut down to repair a ruptured steam line to the 4A feedwater heater.

March 29, 1989, the unit was manually shut down as specified in a confirmation of action letter dated March 30, 1989, until operating crews could be evaluated as stated.

2. Unit 4

Reactor Trips

August 19, 1988, the unit was inadvertently scrammed from 100% power due to personnel error in placing the steam flow control switch and the feedwater flow control switch to the channel being tested.

Unplanned Reactor Shutdowns

August 12, 1988, the unit was manually shut down due to a small leak from an old pressurizer spray valve body.

June 17, 1989, the unit was manually shut down due to a main generator exciter ground that resulted when a copper line carrying turbine plant cooling water to the exciter coolers broke.

July 17, 1989, the unit was manually shut down when a valve in the B intake cooling water header failed causing low flow to the component cooling water heat exchangers.

H. Effluent Release Summary

	Activities Released by Year (Curies)		
	1986	1987	1988
Gaseous	(Ci)	(Ci)	(Ci)
Fission and Activation Gases	8.66E+03	1.72E+03	1.25E+03
Iodine-131 +	4.12E-02	2.62E-02	4.83E-03
Liquid			
Fission and Activation Products	8.40E-1	7.48E-01	3.30E-01
Tritium	1.03E+03	5.38E+02	2.99E+02

of vessel embrittlement. (This hearing has been rescheduled for February 27, 1990.) The staff will continue to monitor the extent of reactor pressure vessel embrittlement at the Turkey Point plant and will take appropriate action should embrittlement become a concern in the future.

Based on this information, we do not believe that the shutdown of the Turkey Point plant or the replacement of its reactor vessels is warranted. I hope this information adequately responds to your request. If I can be of further assistance to you, please do not hesitate to contact me.

Sincerely,

Original Signed By:
James M. Taylor

James M. Taylor
Executive Director
for Operations

Enclosures:
1. Ltr dated 6/8/89
2. SALP Report

*SEE PREVIOUS CONCURRENCE

OFC	:LA:PDII-2*	:PM:PDII-2	:PM:PDII-2*	:D:LPEB*	:D:PDII-2*	:AD:PDII-2*	:Tech Editor*
NAME	:DMiller	:SHoffman	:GEdison	:AGody	:HBerkow	:GLainas	:BCalure
DATE	:1/3/90	:1/5/90	:1/3/90	:12/28/89	:1/3/90	:1/4/90	:1/4/90

OFC	:DRP/DRSP*	:ADP*	:DONRR	:EDO	:	:	:
NAME	:SVarga	:JPartlow	:TMurley	:JTaylor	:	:	:
DATE	:1/4/90	:1/4/90	:1/9/90	:1/ /90	:	:	:

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1/8/90

hearing Ms. Edelson referred to in her letter is related to this amendment and the litigation of limited issues concerning the licensee's determination of vessel embrittlement. (This hearing has been rescheduled for February 27, 1990.) The staff will continue to monitor the extent of reactor pressure vessel embrittlement at the Turkey Point plant and will take appropriate action should embrittlement become a concern in the future.

Based on this information, we do not believe that the shutdown of the Turkey Point plant or the replacement of its reactor vessels is warranted. I hope this information adequately responds to your request. If I can be of further assistance to you, please do not hesitate to contact me.

Sincerely,

Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

Enclosures:
1. Ltr dated 6/8/89
2. SALP Report

cc w/o enclosures:
Senator Graham

*See Previous Concurrence MAC for

OFC	:LA:PDII-2	:PM:PDII-2	:PM:PDII-2	:D:LPEB*	:D:PDII-2	:AD:PDII-2	:Tech Editor
NAME	:DMiller	:SHoffman:sl	:GEdison	:TGody	:HBerkow	:GLainas	:B.Calvo
DATE	:1/3/90	:1/3/90	:1/3/90	:12/28/89	:1/3/90	:1/4/90	:1/4/90

OFC	:OGC	:DRP/DRSP	:ADP	:DONRR	:	:	:
NAME	:	:SVarga	:JPartlow	:TMurley	:	:	:
DATE	:12/ /89	:12/ /89	:12/4/89	:12/ /89	:	:	:

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Point reactor pressure vessels. The scheduled hearing referenced by Ms. Edelson in her letter (now rescheduled for February 27, 1990) is related to this amendment and the litigation of limited issues concerning the licensee's determination of vessel embrittlement. The staff will continue to monitor the extent of reactor pressure vessel embrittlement at the Turkey Point Nuclear Plant and will take appropriate action should embrittlement become a concern in the future.

Based on the above, we do not feel that the shutdown of the Turkey Point Nuclear Plant or the replacement of its reactor vessels is warranted. I hope this information adequately responds to your request. If I can be of further assistance to you, please do not hesitate to contact me.

Sincerely,

Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

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NAME	:DMiller	:SHoffman/sl	:GEdison	:AGody for	:HBerkow	:GLainas	:
DATE	: 12/27/89	: 12/27/89	: 12/27/89	: 12/28/89	: 12/29/89	:	:

OFC	:DRP/DRSP	:ADP	:DONRR	:	:	:	
NAME	:SVarga	:JPartlow	:TMurley	:	:	:	
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