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P.O. Box 14000, Juno Beach, FL 33408-0420



SEPTEMBER 2 1 1989

L-89-350

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

Re: Turkey Point Units 3 and 4 Docket Nos. 50-250 and 50-251, Inspection Report 88-15; Supplemental Response to September 13, 1988 SALP Report

Gentlemen:

On October 24, 1988, Florida Power & Light Company (FPL) responded to the NRC's Systematic Assessment of Licensee Performance (SALP) report for the Turkey Point facility covering the period June 1, 1987 to June 30, 1988. The purpose of this letter is to review activities undertaken and progress made by FPL in addressing particular issues identified in that last SALP report.

Over the past year, a number of significant changes have been made in the area of nuclear plant management, reflecting FPL's commitment to assuring that experienced individuals with successful track records occupy key management positions. Mr. Jerry Goldberg was recently appointed Executive Vice President and is now FPL's senior corporate nuclear officer, reporting directly to the President of FPL. Before coming to FPL, he oversaw the successful construction, start up, and operation of a two-unit nuclear facility at another utility.

I have been appointed Site Vice President for Turkey Point. I was formerly Site Vice President at FPL's St. Lucie nuclear facility. The St. Lucie nuclear units have established a performance record which is recognized as one of the best in the industry.

Reporting to Mr. Harris is Turkey Point Plant Manager, Mr. James Cross. Mr. Cross joined FPL and Turkey Point in May, 1988. He brings a record of 16 years of success in performing comparable functions at another nuclear utility.

Mr. John West has been appointed to the newly-created position of FPL Manager-Nuclear Security. Previously, Mr. West held the position of Security Supervisor at St. Lucie. In addition, Mr. Frank Timmons has been appointed Turkey Point Security Superintendent. Before coming to FPL and Turkey Point, Mr. Timmons successfully managed security programs at two other nuclear plants.

Mr. Ken Beatty has been appointed Training Superintendent at Turkey Point. He has held an SRO license at Turkey Point and has more than 17 years experience in the field of nuclear plant training.

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U. S. Nuclear Regulatory Commission L-89-350 Page two

Mr. Michael Wayland has been appointed acting Maintenance Superintendent. Mr. Wayland has solid experience with FPL and at Turkey Point. We expect him to provide the leadership necessary for improved performance.

On August 15, 1988, FPL provided the NRC with its initial response to the Independent Management Appraisal (IMA) prepared by Enercon Services, Inc. Each recommendation in the IMA, and in an evaluation of the IMA prepared by the NRC Office for Analysis and Evaluation of Operational Data, was analyzed, and a plan for implementation developed.

FPL management is implementing IMA recommendations in a prompt and effective manner. As part of its response to the IMA, FPL took action to assure that key management positions were staffed by qualified individuals with demonstrated skills. A number of the personnel changes mentioned above resulted from this initiative.

Performance indicators for measuring progress toward achieving plant goals have been established in accordance with IMA recommendations. Turkey Point's monthly indicator package tracks each department's performance. Additionally, departments maintain indicators reflecting performance in specific areas of activity associated with their functions. For example, the Maintenance department has established indicators measuring equipment out of service, corrective maintenance backlog, and control room deficiency tags, among others. Updated reports on FPL's response to IMA recommendations have been presented to the NRC on April 28, 1989, and in recent management meetings.

FPL has also undertaken a number of additional activities to address weaknesses identified in the September 13, 1988, SALP report. These activities are discussed in Attachment A to this letter under the separate functional areas to which they are primarily addressed. I believe we are making progress in addressing the problems identified in the last SALP report, and we will continue our efforts to make Turkey Point a first class nuclear facility in every respect.

Very truly yours,

NHASIN K. N\ Harris

Vice President Turkey Point Nuclear Plant

KNH/WEB/dh Attachment

cc: Stewart D. Ebneter, Regional Administrator, Region II, USNRC Thomas E. Murley, Director, Office of Nuclear Reactor Regulation, USNRC

Senior Resident Inspector, USNRC, Turkey Point Plant

ATTACHMENT A

ACTIVITIES TO ADDRESS ISSUES IDENTIFIED IN THE SEPTEMBER 13, 1988 <u>TURKEY POINT SALP REPORT</u>

I. Plant Operations

Turkey Point plant management has adopted an operationscentered philosophy in which the Operations department has the central role in the planning and scheduling of maintenance and other plant activities.

At the beginning of the shift, the Plant Supervisor-Nuclear (PSN) or Assistant PSN (APSN) meets with representatives of the various disciplines to prioritize and coordinate work to be performed. The PSN also plays a key role in the Plan of the Day meeting at which all major activities for the day are identified and scheduled. The Plant Manager or Operations Superintendent also participates in this meeting.

A Planning and Scheduling department was formed reporting to the Operations Superintendent and is responsible for prioritizing daily work activities and outage scheduling. Operations now establishes the priorities for maintenance and other support functions. In addition:

> A code of professionalism addressing "culture issues" has been prepared to delineate standards of demeanor and performance for operators. Operators have written their own code of conduct to meet these standards.

Plant management conducts periodic "open forum" meetings with operating crews in training to communicate management's expectations and goals, and to discuss issues of concern to the operators.

The Plant Manager performs formal walkthroughs during which a list of action items is generated, and other managers perform walkthroughs These walkthroughs periodically. and increased management presence in have provided the plant the opportunity for management to emphasize the leadership role of

Operations, the code of professionalism, and management's expectations concerning personal responsibility and accountability.

Personal performance is evaluated regularly, and personnel have been replaced when performance did not meet standards. Management recognizes that having qualified, experienced personnel is of the utmost importance.

As noted in the cover letter, a number of performance indicators are in place to measure performance quantitatively.

It is clear that there has been a "culture change" in operations; that the PSNs and operators accept accountability for the plant and its operation; that the entire plant has shifted toward an operations-centered philosophy; and that operators have moved away from accepting the concept of "operating around" degraded equipment or equipment out-of-service. After observing improved operator performance, FPL requested the discontinuance of the Management on Shift (MOS) Program, during which extra attention was focused on improving operation. The NRC concurred that discontinuance of the program was appropriate. Improvement has been confirmed by contract specialists who participated in the MOS program and returned to review operational performance.

FPL has also conducted a complete review and rewrite of Technical Specifications for Turkey Point. These modified Standard Technical Specifications have been submitted to the NRC for final approval. Their adoption will help facilitate plant operation.

A number of steps have been taken to improve system configuration control, particularly with respect to valve alignment, which was noted as a problem area in the 1988 SALP report. These efforts have been largely directed at stressing, in operations and throughout the plant, the importance and necessity of strict procedural compliance and receipt of appropriate authorization from the control room for valve realignments. Steps include the following:

> - Crew meetings are held during requalification for each crew to discuss recent operating events and to convey management's expectations for future performance. Discussions include consideration of root causes; the prevention of similar events; strict procedural compliance; the necessity of

procedural clearance prior to valve realignment; crew accountability for plant operation; and the need for documented procedural guidance for realignments.

Independent verification requirements governing clearances for valve realignments have been expanded to include selected quality-related systems as well as safety systems.

The requirement that valve realignments must be performed pursuant to written instruction has been emphasized to operating crews orally and in writing. This emphasis must be continued routinely.

Operating event reports are issued when deemed necessary to identify the root causes of valve misalignments to help prevent recurrence.

Information Bulletin No. 88-02, "Work Controls," was issued to department heads. This bulletin emphasizes the requirement that administrative documents (<u>e.g.</u>, plant procedures, plant work orders, radiation work permits and departmental procedures) be followed. Department heads were required to familiarize each member of their respective departments with this bulletin.

The subject of work controls has been incorporated into initial and continuing training.

FPL has made a commitment to expand the number of licensed operators in order to reduce operator overtime. There are currently approximately 57 people in licensed operator training. Including these trainees, the current complement of about 40 licensed operators, and turnover, it is projected that, in November, 1990, the total complement of licensed operators will be 63.

II. Radiological Controls

FPL has taken action to increase the size and experience of its radiation protection and health physics (HP) staff. The radwaste supervisor position and all three HP engineering positions have been filled with experienced personnel during the last year. The size of the permanent HP staff has also increased, with the addition of over 30 technicians and supervisory positions over the past year. This additional manpower will significantly reduce the dependency on contractor personnel during non-outage times.

HP procedures are being upgraded. The corporate staff is currently performing a documented technical review of these procedures. Additionally, two professional HP consultants have been contracted to assist in upgrading the HP procedures.

To help in the reduction of contaminated floor space, the HP department is now supervising the daily activities of maintenance helpers who perform decontamination in the plant. Additionally, the sources or causes of contamination are being evaluated, and corrective actions (short and long term) are being taken for contaminated areas based upon the results of this evaluation.

FPL has taken action to reduce the number of personnel contaminations and collective radiation dose to plant personnel. These measures have been effective. Man-rem and personnel contaminations are projected to be down approximately 30 percent and 60 percent, respectively, from 1988 levels.

FPL is also making improvements in the chemistry program for Turkey Point. The size of the chemistry organization has been increased from 16 technicians and 5 supervisors in early 1988, to 24 technicians and 6 supervisors currently authorized. Additionally, Turkey Point has installed a reverse osmosis pretreatment system to help control the chemistry of the secondary system and makeup water.

FPL has taken action to become more aggressive in the area of radiation protection. For example, a procedure has been prepared which details the system for reporting and documenting events and conditions adverse to radiation safety. The procedure describes events and conditions which must be reported; the mechanism for processing the information; the evaluation of the root cause and the corrective actions; the tracking and trending of the incident reports; and the final close-out of the report. Personnel contaminations are now classified under the radiological investigation reporting criteria and are documented, reviewed, tracked, and resolved in the same manner as other radiological incidents. Finally, a new computer spectroscopy system is currently being installed for more effective analysis of personnel contaminations.

III. Maintenance

As part of plant management's operations-centered philosophy, Operations is supported by Maintenance as the latter's primary customer, and Operations personnel now establish the priorities for maintenance.

A number of administrative modifications have been made to improve efficiency. To address the issue of the time lag between the identification of a deficiency in the field and the actual entry of the deficiency in the work control system, additional electronic terminals have been installed at field locations to provide ready access by non-licensed operators. This allows for direct entry of the Plant Work Order (PWO) into the Nuclear Job Planning System (NJPS) by the operator, and provides information to the originator concerning the progress of the work order.

The Operations department requires that operationally invalid or duplicate PWOs be returned to Operations prior to cancellation. This helps assure adequate tracking of PWOs. The PWO tracking system has been revised so that a PWO is reflected in the PWO backlog indicator after it is approved as a valid PWO, rather than at a later stage, after the completion of planning, as had been the case previously.

The status of equipment deficiency tags has been verified by walkdowns. In addition, deficiency tags must have a computer-generated number before posting. This assures that posting does not occur before items are listed in the computer.

To improve job packages, planners are now required to perform field walkdowns of corrective maintenance work orders, and to review the machinery history records in the job planning stage. Accountability for work-package quality has been assigned to the Planning Supervisor, who will ensure review of selected packages prior to issuance. In addition, the importance of timely work has been emphasized. Since early 1989, the percentage of jobs started on schedule has steadily increased and has not fallen below 70 percent since March.

For Preventive Maintenance items (PMs) to exceed the grace period by 25 percent, Maintenance Superintendent approval is required. For PMs to exceed the grace period by 50 percent, Plant Manager approval is required. The number of overdue PMs has fallen from 40 in June 1989 to about 20 as of September 1989.

A number of improvements have been made in the maintenance planning process. These include:

 Additional training on job planning techniques for job planners. Two backshift maintenance coordinators have been hired. These coordinators assure that maintenance work is properly coordinated with other site departments (such as Operations, Quality Control, and Security), so that all necessary clearances and personnel are in place to support maintenance work.

Additional maintenance planners have been hired to provide planning support to the backshifts.

Periodic meetings with department planning supervisors have been held to evaluate and develop measures to improve the maintenance planning process and its implementation. Beginning in March, 1989, these meetings have been used to review sample PWOs for errors, and action has been taken to prevent the recurrence of certain repetitive errors, such as inaccuracies in journeymen's work reports.

These improvements have resulted in an improved overall planning process. In addition, on-time job completion is being established as a performance indicator of the Scheduling and Maintenance departments' effectiveness. This indicator will be a measure of whether planning and scheduling was effective in facilitating the completion of work without delays.

Steps are also being taken to improve the quality of maintenance procedures, including the following:

The check lists used to assure that each new or 'revised maintenance procedure is processed through a proper preparation and review sequence have been reviewed and Procedure writers have improved. received training on the use of these check lists, as well as on general principles of good procedure This training writing. was completed in February, 1989.

The method of ensuring that plant changes are factored into procedures has been improved. A departmental instruction has been issued which requires a review of plant changes by both an Operations and a Maintenance procedure writer.

An improved process for validating . new procedures has been established. Pursuant to this process all new procedures clearly state that the procedure has not been used before, and have a formal feedback form included in them. As the work problems progresses, any in implementing the procedure are noted . recorded. Changes to and the then procedure are made, as necessary, to eliminate problems and incorporate journeyman feedback. Procedures formalizing this process were issued in July, 1989.

Maintenance management is encouraging workers to provide feedback on procedure problems so that procedures can be corrected.

A great deal of emphasis is being placed on increasing attention to detail and individual accountability:

- **A11** maintenance second level supervisors and above have been rated by experienced industry experts on their understanding of applicable standards and their to communicate ability those standards to subordinates. Individual coaching and counseling by FPL management is also being performed.
- Performance appraisals will include discussions of positive and negative trends with individual employees.
- Daily checklists have been established to reinforce to supervisors their responsibilities in measuring the performance of, and providing feedback to, their subordinates.

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INPO will perform periodic observations of maintenance activities in order to provide an independent measurement of FPL's success in improving individual accountability.

Action has also been taken to improve the availability of spare parts. A special team, headed by an assistant maintenance superintendent, was established to determine the causes of availability problems, and to identify ways of correcting them. The team continues to meet on a regular basis, with working groups meeting more frequently, as needed. The corrective actions which have been taken include:

- identifying parts needed for upcoming outages, ordering these parts, and entering them into the stores inventory list;
- initiating Purchase Orders for stores items that are currently below minimum stock levels;
- instituting a commercial grade dedication pilot program to allow the use of standard-grade parts for certain applications;
 - establishing blanket Purchase Orders with Westinghouse to reduce order time; and
- accelerating efforts to identify and remove obsolete parts from stores.

These actions have shown positive results. For ex

- The number of stores items below minimum stock levels dropped from 5,154 in May, 1988, to 4,779 as of July, 1989. Additional Purchase Orders for items below minimum stock levels are at vendor shops to be filled, which should further reduce this number.
- The six month average time it takes to issue a Purchase Order for spare parts has been reduced from 111.5 days, on September 1, 1988, to 77.8 days on July 1, 1989; representing

For example:

an improvement of approximately 25 percent.

The number of PWO's awaiting parts has dropped from over 300 in December, 1988, to a low of 168 in July, 1989.

From a programmatic standpoint, root cause analysis is a key to cutting equipment failure rates. Root cause analysis is being performed by System Engineers, and a procedure has been issued to formalize the process (see also Section XII).

Results of improved maintenance can be seen in an improved Preventive Maintenance to Preventive Maintenance plus Corrective Maintenance (PM/PM+CM) ratio which rose from 25 percent in mid-1988 to just under 60 percent at the end of June, 1989 (although some portion of this change has been due to the timing of unit outages). This figure has declined somewhat, primarily due to efforts to reduce the CM backlog. That backlog is currently at about 735 PWOs, down from approximately 1100 during the early part of 1989.

A comprehensive discussion of maintenance improvements was provided in the form of a "Supplemental Response to NRC Maintenance Team Inspection," dated July 31, 1989. A copy of that submittal is provided as Enclosure 1 to this Attachment.

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IV. Surveillance

FPL has elevated the level of attention devoted to the performance of surveillances. Surveillances are being scheduled in the Plan of the Day. On-time completion is emphasized. Any surveillances that are in the "grace period" are identified separately in the Plan of the Day, and reviewed at the 1:00 p.m. planning meeting to assure attention is directed toward their completion.

In addition, FPL is developing a computerized surveillance tracking system. The software has been developed, and trial implementation is expected to start by December, 1989. This system will emphasize accountability and assist in the ontime completion of surveillances.

<u>V.</u> <u>Fire Protection</u>

Several improvements have been made to the fire protection program. These include:

- Direct management involvement is accomplished through daily morning meetings held with key personnel. The plant's Plan of the Day is reviewed along with fire watch logs for the previous 24 hours activities. Hot items as well as routine assignments are also discussed.
- Training and performance evaluation of the fire watch personnel is an ongoing program.
 - The fire protection group has a dedicated individual whose sole responsibility is to write and update fire protection procedures. This individual reports directly to the fire protection supervisor.
- Fire protection impairments with Technical Specification limits are tracked on a computer under the direct control of the fire protection supervisor.
 - A new contract company has taken over the fire watch program, and reports directly to the fire protection supervisor. This new company brings greater industry experience and stronger supervision to the program. Since 1988, there have been no reported incidents of fire watch personnel sleeping on duty.
 - Training records for fire brigade members have been entered on a computer tracking system that maintains their qualification status. This system is set up to identify brigade members 8 days prior to the time their qualification expires. This eliminates having brigade members on shift without proper qualifications.

In addition, the fire protection group has identified long term goals for improvement of overall Fire Protection Program. The site Pre-Fire Plans are being updated, and Fire Protection Training program scheduling has been improved to ensure that timely and comprehensive Fire Brigade training is achieved.

FPL has also successfully demonstrated Alternate Shutdown capabilities to meet Appendix "R" requirements.

VI. Emergency Preparedness

Weaknesses identified in the previous SALP report have been corrected and closed by subsequent NRC inspections. Corrective actions are summarized below.

Actions necessary for completing the installation of new hardware and software, utilized to record meteorological data, have been performed. Procedures for coordinating any future changes to the system are being improved. Further, periodic checks are performed whereby actual meteorological data at the source is measured against readouts in the Control Room and on ERDADS terminals. In addition, references in dose calculation procedures have been added to remind users to verify that 15 minute averages are used in determining offsite dose.

A control system is in place for maintenance and control of the dose assessment model. Improvements have been made to the control system, and a validation and verification of the dose assessment model has been performed to ensure that the calculational method has been properly documented.

VII. Security and Safequards

Security at Turkey Point has received substantial management attention, and comprehensive action has been taken to improve Security performance. A description of improvements made in this area was provided to the NRC by letter dated September 19, 1989, a copy of which is included as Enclosure 2 to this Attachment.

A. <u>Management Improvements</u>

In July, 1988, an individual with a successful track record at the St. Lucie plant was appointed Manager-Nuclear Security. Since his appointment, this individual has devoted most of his time to upgrading security performance at Turkey Point. From May through August, 1989 this individual served as the Acting Security Supervisor at Turkey Point.

In July, 1989, an individual with more than 20 years of security and law enforcement experience, including 9 years of nuclear plant security experience, was hired to be the Security Superintendent at Turkey Point, a position to which he was appointed on September 1, 1989. This individual successfully managed security programs at two other nuclear facilities before coming to Turkey Point.

Five FPL shift specialists have been retained to oversee the activities of contractor security personnel. The shift specialists are scheduled so that a specialist covers each security shift.

These changes provide strong, experienced and responsible management of Turkey Point security activities and more direct control over the security contractor. The Manager-Nuclear Security and the Site Security Superintendent are taking the lead in directing security system upgrades; and assuring that regulatory commitments associated with Security are being completed. Security management is personally reviewing and tracking to completion regulatory commitments involving security.

B. <u>Personnel Performance</u>

Extensive action has been taken to assure that Security personnel fully understand and properly execute their responsibilities. In February 1989 a program for field evaluation of security personnel was initiated, pursuant to which the performance of security personnel in simulated security situations is evaluated. Examples of situations evaluated include:

> a request made for a badge with an incorrect number or a badge with a picture that does not match the requestor;

- response to security alarms in various plant areas;
 persons seeking access to the vital area with an improper badge;
 - establishment of compensatory posts;
 - attempted introduction of contraband into the protected area; and
- security barrier degradation (simulated hole in fence).

Individuals are rated on the quality of their response and are critiqued and coached by evaluators to improve their performance. Enhancements to this program will be completed by the end of the year.

The training curriculum has been substantially revised, and now includes a total of approximately 240 hours of training, approximately 30% of which is classroom training and 70% of which is field training. Field training includes:

- demonstrations of access control techniques at actual site entry barriers;
- simulated patrols;
- simulated alarm responses;
- demonstrations of observation tower techniques;
- demonstrations of search techniques; and
 - demonstrations of vehicle escort techniques.

During this training, students are required to perform simulations of these tasks, and are critiqued on their performance by instructors.

Actions taken to boost morale and reduce turnover among contractor security personnel include increased medical, dental and retirement benefits; and bonuses for good performance.

These and other actions have led to better security performance. The number of loggable security events has declined from an average of 49 per month in 1988, to 41 per month through August 1989; a decrease of more than 16%. This decrease is especially significant since it was largely achieved during a time when Security was required to cope with heightened levels of activity associated with the dual unit outage during the first half of 1989. Security personnel performance has improved, as reflected by the fact that no significant security event caused by the actions of security personnel has occurred since early May, 1989. In addition, recent NRC inspections (Report Nos. 89-30 and 89-33) have not identified any violations.

C. <u>Security System Upgrades</u>

Security hardware upgrades are proceeding, and efforts are being made to assure that compliance with the security plan is maintained while these upgrades are performed. A security upgrade project manager has been assigned in the Security department to oversee the upgrade. In May, 1989, new computer equipment was installed to replace older equipment with which reliability and parts availability problems had been experienced.

With respect to other hardware upgrades, engineering and scheduling work is generally complete. Bridge and site roadway construction associated with security boundary modifications included in the upgrades has been underway since March, 1989.

D. Compensatory Posts

A number of NRC violations in the recent past have involved security personnel stationed at compensatory posts. FPL has expended considerable effort to reduce the number of these posts and the number of compensatory post hours worked. Security equipment maintenance work requiring compensatory posts is now assigned priority A1, which requires that work begin within 24 hours. Also, dedicated maintenance personnel are assigned to perform work on security equipment. As a result of these actions, the number of compensatory post hours worked has dropped substantially, from an average of 1654 per month in 1988 to 542 per month through August, 1989 (since April, 1989 the average has been 280.6 hours per month).

In summary, although some significant security problems occurred early in the just-ended SALP period, there is evidence of considerable improvement as the SALP period progressed.

<u>VIII.</u> <u>Outages</u>

Outage planning has been aided by improved Engineering support. Plant Change/Modification (PCM) packages to be worked during outages are being prepared further in advance due, in large part, to proactive participation by Engineering on the plant outage planning team. Early issue of these packages greatly facilitates outage maintenance planning. For example, 60 days prior to the Turkey Point Unit 4 outage that commenced in the fall of 1988, approximately 35 percent of the PCMs planned to be worked during the outage had been prepared. To date, approximately 40 percent of the PCM packages identified for the Unit 3 1990 outage have been prepared. FPL's goal is to have 95 percent prepared 60 days prior to the commencement of the outage, and present schedules show Engineering approaching that goal.

Work planned for outages is directed, in part, at lowering equipment failure rates. FPL has identified valve problems as the major (44%) recurring contributor to unplanned days off-line. Typical problems were external leakage, internal leakage, and valve control problems. Root causes included inadequate preventive maintenance schedules, inadequate maintenance procedures, and weak maintenance worker training.

To address these problems, FPL is conducting a review of preventive maintenance for valves which influence reliability (both safety-related and balance-of-plant), and has developed new schedules for preventive maintenance where appropriate. Valve maintenance procedures are also being reviewed and upgraded where necessary. Instruction on the revised procedures has been provided to key journeymen.

During the recent refueling outages, more than 1,400 valves were worked using the revised procedures. This should help to significantly reduce the number of unplanned days off-line. The proportion of unplanned days off-line attributable to valve problems has decreased from 44 percent in 1987 to 16 percent in 1988. Further valve work is scheduled for 1990 outages.

<u>IX.</u> Quality Programs and Administrative Controls Affecting Quality

An analysis of Quality Control (QC) staffing and overtime has been performed. The approved QC staff for maintenance work inspection has been augmented during certain outage conditions. Approval for additional, permanent QC inspectors is being sought, consistent with the QC department goal of 16 percent overtime for 1989. Actual monthly overtime levels declined from 37 percent in January, 1989, to 10 percent in June, 1989.

FPL has also expanded and improved the method by which employees may express nuclear safety concerns. Training in the program is provided to personnel working in the nuclear area as part of FPL's General Employee Training. This program should enhance the sensitivity of employees with respect to detecting problems.

Actions have also been taken to enhance QC department activities. These include increased emphasis on field performance monitoring, recurring problem analysis, and periodic reporting of information to focus management attention on potential problem areas.

The QC department utilizes data from LERs, QA audits, NRC inspections, and previous QC findings to identify areas for further analysis and focus inspection and surveillance activities. are tracked, and analysis to determine Recurring problems potential causes is conducted to establish subsequent corrective Once action to solve problems is taken, follow up action. inspections or surveillances are evaluated to assure that the For example, in April, 1989, recurring action was effective. The types of defects items were noted in the area of welding. their identified and actions were taken to prevent were recurrence, including analysis of the weld data by mechanical maintenance and additional training of welders. QC performed indicated 1989 which that inspections in May, follow-up improvement had been made but that weld problems still existed. Surveillances were scheduled to observe welding, and it was determined that problems resulted from failures to implement The corrective actions certain welding program requirements. established to address this continuing problem included procedure reviews and upgrading, and supervisor and foreman training. Follow-up surveillances and inspections in August identified no welding problems. This process improves the effectiveness of the plant's corrective actions.

X. Licensing

A. NRC Open Items List

Starting in January of 1989, additional licensing resources were applied at the Turkey Point site to work directly with the NRC Resident Inspector's Office. Copies of the monthly NRC open items list were obtained, and documentation packages were developed for completed items. Copies of these documentation packages were made available to the NRC Resident Inspectors for review and closeout. Approximately 57 packages were provided for closeout during the first half of 1989. As a result, the NRC open items list is now much more current. In addition, an "in-process" file was developed to maintain current inspection packages for coordination with off-site NRC inspectors when they visit the plant site to determine the status of their open inspection items.

B. <u>Commitments</u>

FPL has significantly improved the commitment closeout process through implementation of the following actions:

- Additional resources were applied to reduce the Commitment Tracking System (CTRAC) backlog of reported overdue regulatory items to zero.
 - A "four-week look-ahead report" is issued on at least a bi-weekly basis to all department heads to alert them on upcoming due dates for licensing commitments.
- A policy memo was issued by management to specifically identify responsibilities for the closeout of commitments.
- The interfaces between the Juno Beach and Turkey Point licensing organizations concerning commitments were better defined, and FPL efforts to refine these interfaces are continuing.

C. Improvements in Licensing Process

FPL has introduced a number of changes that are intended to improve FPL's interaction with the NRC staff. A process is being adopted whereby Technical Specification changes are to be identified and submitted at least six months in advance of need, whenever possible. This process is designed to provide the NRC staff with adequate review time for all proposed changes.

In addition, a new process is being developed for responding to NRC generic letters and bulletins. The process

focuses on development of early action plans and follows through to the response preparation phase.

A subcommittee has been established to screen individual items submitted to the Plant Nuclear Safety Committee (PNSC) in order to reduce the time spent on routine reviews so that additional management attention can be directed to safetysignificant issues.

D. <u>New Standard Technical Specifications</u>

FPL submitted revised Technical Specifications for Turkey Point on June 5, 1989. This followed a thorough review of the Proof and Review and Final Draft versions developed by FPL in consultation with the NRC Technical Specification Branch. Wherever possible, FPL has adopted the wording of the Standard Technical Specifications. This review process met the established FPL targets, and supported NRC staff review schedules.

E. <u>Resolution of Unresolved Safety Issues</u>

FPL has been actively involved in a number of industry wide efforts directed at the resolution of Unresolved Safety Issues. FPL has participated in industry efforts on Station Blackout (A-44), Diesel Generator Reliability (B-56), Seismic Qualification (A-46), and Shutdown Decay Heat Removal (A-45). The effort and resources FPL has committed to the plant-specific resolution of these generic issues demonstrates heightened awareness to safety problems confronting the industry.

With respect to seismic qualification, the NRC staff has permitted licensees to develop plant specific programs, if they so desire, as an alternative to adopting a generic program developed by an industry group. FPL is one of the few utilities providing the staff with a plant specific program. This course of action by FPL should allow for closure of this issue in 1990, substantially in advance of the industry schedule.

XI. Training and Qualification Effectiveness

FPL has taken action to increase the experience level and size of its training staff. A new Turkey Point plant Training Superintendent has been appointed. He has held a SRO license at Turkey Point and has more than 17 years of training experience in the nuclear power industry. In addition, a new training manager with more than 16 years of training and educational experience, including eight years with INPO, has been hired to head FPL's corporate nuclear training department. Eighteen new permanent Turkey Point training instructor positions have been authorized to replace 15 contractors.

Improvements have also been made with respect to instructor training and qualifications. A goal has been set to have 80% of all FPL licensed operator instructors hold SRO licenses by 1992. Simulator instructors have been provided with additional training in student critique and evaluation methods. Hiring standards for training instructors are being revised to present instructor qualification and training requirements in more specific and objective terms, and to define required instructor training in terms of specific job and task elements. To assure that instructors are competent, FPL requires instructors to demonstrate their technical and instructional competence at least Results of these evaluations are systematically annually. evaluated to determine whether any remedial instructor training is required.

FPL has made improvements in its operator training program. For example, the minimum-acceptable aptitude test score required for non-licensed operator candidates has been raised to increase the quality of candidates entering the non-licensed operator training program. Training materials are being updated to reflect updated system description documents as well as plant and procedure changes. Guidance for instructors is being revised to provide:

- a matrix specifying the training methods, materials, and setting (<u>i.e.</u>, classroom or simulator) to be used to train particular groups on particular topics;
- a table of specifications providing objective sequencing and leveling; and
- a course design map and training plan, which explains the relationship of training course activities to the objectives being sought through the training, and how training should be sequenced to meet these objectives.

Improvements in operator training programs have begun to show positive results. For example, Turkey Point operator candidates (initial licensing from Group 11) achieved a 92% pass rate (11 of 12) on the NRC licensing examination administered during December 1988 (the most recent examination). Further, candidates taking the recent NRC Generic Fundamentals Examination achieved a 100% pass rate.

Although good pass rates have been achieved during initial operator licensing examinations, low pass rates occurred during operator requalification examinations held in March, 1989. FPL has responded vigorously to improve its requalification training program, and made the following enhancements in preparation for the May 30, 1989, NRC requalification examinations:

- The amount of simulator training time was increased by Simulator practice exercises were upgraded to 50%. include practice on complex accident scenarios. During evaluations of trainees on the simulator, special emphasis was placed upon team performance. Also, plant management (including the Turkey Point Site Vice the Plant Manager, or the Operations President, observed crew performance Superintendent) on the simulator and provided feedback during evaluations.
- Students were specifically trained and evaluated on all Job Performance Measures issued since their last requalification or initial licensing (whichever was later).
- Approximately 120 hours of additional remedial classroom training was provided. This classroom training focused on those areas in which operators had difficulty during NRC requalification examinations held in March 1989.
- FPL in-house and practice examinations were held using the open reference format utilized during NRCadministered requalification examinations, so that operators would be familiar with the format.

As a result of these improvements, 100% (11 of 11) of the individuals who took the NRC requalification examinations during the week of May 30, 1989 passed. Additional upgrades to the 1989-90 program include:

- Third-party independent assessments of training effectiveness have been performed by Westinghouse, Enercon and INPO.
- Training materials have been reviewed and revised to provide better focus on information necessary for competent job/task performance.
- A license retention incentive program has been

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established which provides financial rewards to operators who pass the NRC requalification examination on the first try and otherwise maintain their qualification status.

FPL is also enhancing training in the area of security. In May 1989, security sergeants, lieutenants, and captains were provided with supervisory skills training. Based on the results of this training and feedback from participants, a training coursefor key security management personnel was developed and conducted on September 6-8, 1989. Additionally, a series of self-study and classroom training courses is under development to prepare security personnel for supervisory positions. Prior to becoming eligible for promotion to sergeant, lieutenant or captain, an individual must complete certain prescribed courses, including courses in leadership, and specific courses dealing with the particular responsibilities of each level of supervision.

The training curriculum for security officers has also been substantially revised and now includes a total of approximately 240 hours of training, of which approximately 30% is classroom training and 70% is field training directly related to the practical aspects of performing key security tasks. This area is discussed in Section VII, Security and Safeguards.

FPL has also taken steps to improve training for maintenance-related activities. For example, maintenance procedure writers have received training on the principles of good procedure writing, and on the use of checklists for preparing or revising maintenance procedures. Maintenance planners have received additional training. A program is being developed under which system engineers will receive training on their assigned systems.

Finally, a detailed description of training program improvements was provided earlier to the NRC, dated August 25, 1989. A copy of that letter is included as Enclosure 3 to this Attachment.

XII. Engineering and Technical Support

Nuclear Engineering activities are now organized outside of FPL Power Plant Engineering under a separate Nuclear Engineering department. The department has taken important steps toward more effective support of plant needs and requirements. The new Nuclear Engineering organization provides a dedicated staff, focused on nuclear plant issues, with substantial nuclear experience. Nuclear Engineering provides a technical focus for maintaining the design basis and configuration management of the plants. A well qualified individual with a proven performance record was obtained from outside of FPL to fill the Director of Nuclear Engineering position.

Nuclear Engineering, supported by the plant staff, is undertaking a Probabilistic Risk Assessment (PRA) for Turkey Point. A contract was awarded to Science Applications International Corporation (SAIC) for this work in June, 1989. A detailed schedule of PRA activities has been developed, and FPL is planning a meeting with the NRC to discuss the program.

In addition to the activities mentioned above, the following are ongoing, proactive efforts in Engineering to support Turkey Point.

- Self assessment of present programs to identify strengths and weaknesses. These programs include Equipment Qualification, Regulatory Guide 1.97, Appendix R, and comparisons to INPO guidelines regarding the conduct of design engineering. Also, quality indicators have been developed and are being tracked for Engineering's major processes.
- Engineering modifications to reduce demands on operators. These modifications include installation of improved automatic isolation of Intake Cooling Water (ICW) to eliminate the valve watch on CV-2201 (complete on Unit 4 and planned for implementation on Unit 3 at the next refueling outage), and the Main Steam Isolation Valve (MSIV) air accumulator modification on Unit 4 to eliminate operator surveillance requirements.
- Engineering initiated efforts. These efforts include coordinated assessment of Nuclear Plant Reliability Data System/Component Failure Analysis Report (NPRDS/CFAR) data, implementation of mode restriction cover sheets for NCRs, improved methods for temporary shielding requests, and one-on-one support of technical staff system engineers.

New programs in progress. These programs include reduction of engineering work backlogs, the drawing update program, and a commercial grade dedication program (implementation of Electric Power Research Institute/Nuclear Construction Issues Group (EPRI/NCIG) guidelines).

Engineering training programs, including 10 CFR 50.59 analysis, reliability techniques (including Weibull analysis), and seismic analysis methods.

Twenty-seven system engineer positions plus a support person (an increase from 16 in March, 1988) have been authorized. Initial staffing has been completed. Dependence on contractor engineers has been reduced significantly and will be eliminated as permanent FPL replacements are trained. A training program for system engineers has been developed and training is now underway.

Plant management has received feedback from plant operators that system engineer responsiveness and effectiveness has improved markedly, and further enhancements are planned, including additional training covering system integration; reliability analysis; and configuration control.

Selected plant systems have been assigned to specific system engineers. These engineers assist in enhancing reliability; identifying and eliminating the root causes of problems; and overseeing and prioritizing changes to their assigned systems. They also conduct periodic walkdowns of their systems to help in the identification of problems.

Goals for system engineers are directed at further improving the performance of plant systems. An example of such goals is minimizing the number of LCO hours due to system problems.



July 31, 1989

L-89-278

Enclosure 1

Mr. Stewart D. Ebneter Regional Administrator U.S. Nuclear Regulatory Commission, Region II 101 Marietta Street, Northwest, Suite 2900 Atlanta, Georgia 30323

Re: Turkey Point Units 3 and 4 Docket Nos. 50-250 and 50-251 Inspection Report 88-32 <u>Supplemental Response to NRC Maintenance Team Inspection</u>

Dear Mr. Ebneter:

On May 4, 1989, Florida Power & Light Company (FPL) responded to the Notice of Violation associated with the NRC's Maintenance Team Inspection (MTI) at Turkey Point. In addition, at our April 28, 1989 meeting with you in Atlanta, we committed to provide you with a description of our actions to address the broader areas of weaknesses noted during the inspection by June 15, 1989. An extension of this date to July 31, 1989 was subsequently agreed to.

The cover letter accompanying the MTI report noted "an improving from changes in management's trend...stemming approach to maintenance, and from newly instituted programmatic changes." We agree that there are indicators which show improvement, but it is also clear that the maintenance program at Turkey Point requires accelerated upgrading, particularly in the areas of weakness noted in the inspection report. In our July 19,1989, management meeting with the NRC at the Turkey Point Nuclear Plant, we provided you with a number of the indicators reflecting our performance in maintenance, and stated our objective of achieving demonstrable improvement against established maintenance performance measures In the attachment to this letter we describe the and criteria. major actions which we have taken to address the areas identified as weaknesses in the MTI, as well as the results achieved so far.

Stewart D. Ebneter L-89-278 Page 2

Please do not hesitate to call me should you wish to discuss these matters further.

Very truly yours,

K. N./Harris Vice/President

Vice/President Turkey Point Nuclear Plant

KNH/WEB/cas/daj

Attachment

cc: Dr. Thomas E. Murley, Director, Office of NRR U.S.N.R.C. Document Control Desk, Washington, D. C. Senior Resident Inspector, Turkey Point Plant

ATTACHMENT

The NRC team inspection of maintenance activities at the Turkey Point Nuclear Plant determined that the maintenance program for the plant was generally satisfactory from a programmatic standpoint, but that its implementation was poor. The report of the team inspection (Inspection Report Nos. 50-250/88-32 and 50-251/88-32) identified nine areas of weakness upon which the poor implementation conclusion was based. These were:

- 1. historically high equipment failure rates;
- 2. poor appearance of plant and equipment condition;
- 3. inadequate previous allocation of resources for parts, permanent staff, and especially technical support;
- 4. inadequacies in engineering support;
- 5. insufficient numbers of QC Inspectors;
- 6. newly developed good programs for job planning and work order control were poorly implemented;
- 7. inadequacies in procedure development;
- 8. poor spare parts controls; and
- 9. high personnel turnover rates, high overtime rates and the need for more timely personnel performance appraisals.

FPL's actions to improve performance in each of these areas, and results achieved to date, are described below.

I. Equipment Failure Rates

To lower equipment failure rates we have identified the major, recurring contributors to: (i) unplanned days offline; and (ii) Limiting Condition for Operation (LCO) hours (on a system basis). We have performed root cause analysis of these major contributors, and have developed and implemented actions to eliminate the identified root causes. In addition, we have taken action to improve our ability to analyze and correct root causes of equipment failures.

Nearly half of the equipment failures that contributed to unplanned days off-line in 1987 involved valve problems. Common problems were external leakage, internal leakage, and valve control problems. Root causes included inadequate preventive maintenance schedules, inadequate maintenance procedures, and weak maintenance worker training. To address these problems, FPL has conducted a review of valve preventive maintenance for valves which affect reliability (both safety-related and balance-of-plant) and has developed new schedules for preventive maintenance where appropriate. Valve maintenance procedures have also been reviewed and upgraded where necessary. Instruction on the revised procedures has been provided to key journeymen. During the recent refueling outages, more than 1,400 valves were worked using the revised procedures. This should help to significantly lower unplanned days off-line. The proportion of unplanned days off-line attributable to valve problems has decreased from 44% in 1987 to 16% in 1988.

The system which contributes most to LCO hours is the Component Cooling Water (CCW) system, which is responsible for more than 25% of all LCO hours on both units. To enhance the reliability of the CCW system, two System Engineers (one permanently assigned and one assigned as a special project) have been assigned to analyze system problems and identify means to resolve them.

A number of specific projects have been identified to enhance . the reliability of the CCW System:

- (i) Replacement of CCW heat exchangers.
 - (ii) Installation of a chemical injection system to reduce fouling of heat exchangers.
 - (iii) An improved program to calculate heat exchanger fouling.

The new heat exchangers have been installed in Unit 4. The Unit 3 heat exchangers will be replaced during the next refueling outage. The chemical injection system has been installed and is being used on a trial basis on Unit 3. After confirmation of its effectiveness, chemical injection will be implemented in Unit 4. The improved program to calculate heat exchanger fouling has been implemented on both units. These actions are expected to reduce CCW system LCO hours substantially.

Other significant contributors to LCO hours have included problems with Residual Heat Removal (RHR) pump seals and with the Emergency Diesel Generator Fuel System. Design and operational changes have been made to address these problems. The originally specified RHR pump seals have been replaced with cartridge seals in Unit 4; the new seals have operated for over 1,000 hours without problems. Replacement seals for the Unit 3 RHR pumps are scheduled to be installed during the next refueling outage.

With respect to the diesel generator fuel system, corrective actions have included changes in fuel filter operation methods, cleaning of the fuel tanks, use of chemicals to prevent biological degradation of fuel, and improvements in chemical analysis of fuel condition. These actions are expected to reduce LCO hours associated with these components.

Other actions have been taken to improve reliability of the "black start" diesels shared by the Turkey Point fossil and nuclear units. These include implementation of an action plan for material condition upgrade of the diesels, (work pursuant to this plan has been completed on the number 5 "black start" diesel) and the assignment of a system engineer to site diesers. Also, new instructions ror the maintenance of electrical equipment associated with the diesels are under development.

From a programmatic standpoint, root cause analysis is one of the keys to cutting equipment failure rates. A number of steps have been taken or are planned to expand and sharpen our root cause analysis capability:

- (i) The role of System Engineers in root cause analysis (and other system engineer responsibilities) is clearly defined in plant procedures O-ADM-501 and O-ADM-509.
 Pursuant to O-ADM-501, system engineers also participate in the review and approval of plant changes and modifications (PC/Ms) to their systems.
- (ii) FPL has hired several additional System Engineers on a permanent basis -- 25 permanent System Engineers are now on site.
- (iii) Training will be provided to System Engineers on their specific assigned systems and in root cause analysis techniques. This training is scheduled to begin in September, 1989.
- (iv) Maintenance and operations personnel have been provided with a directory which gives the names of System Engineers to be contacted in the event of problems on particular systems, and are calling upon them more frequently.
- (v) Teamwork between Design and System Engineers has been enhanced by the assignment of specific System Engineers in the Corporate Staff Engineering group as counterparts to plant System Engineers. Staff Engineers assist their site counterparts in performing error modes and effects analysis, frequently performing their tasks on site.

We believe that the enhanced use of System Engineers for root cause analysis and for devising solutions to prevent the recurrence of problems, in addition to the other steps described below, will improve equipment reliability. The PM/PM+CM ratio has improved from 25% in mid-1988 to just under 60% at the end of June, 1989 (some portion of this change is attributable to the timing of unit outages). Also, as described above, the proportion of unplanned days off-line attributable to valve problems has decreased significantly. Preventive maintenance accomplished during the 1988 Unit 4 reliability outage should result in a further reduction in this figure for 1989.

Other corrective actions which should help reduce failure rates include:

- (i) Steps to reduce the I&C backlog (see Section III).
- (ii) Improved maintenance planning and scheduling (see Section VI).
- (iii) The provision of additional Maintenance and System Engineering resources (see Section III).
- (iv) Improvements in maintenance procedures (see Section VII).
- (v) Enhancing personal accountability (see Section II).

II. Plant Materia_ condition

Plant material condition does not yet meet management standards. The HHSI pump room has been established as a "model area" to exemplify the material conditions expected in the plant. The establishment of other model areas is under consideration. Our aim is to improve overall plant conditions over time to match conditions in model areas.

In terms of appearance, a substantial effort has been undertaken to clean up, paint, and make insulation lagging repairs. Contract painters have been hired to systematically perform needed painting in the plant, with primary focus on the secondary plant. A coating specialist has been retained to oversee the quality of this effort.

In addition, a number of steps have been taken to improve the "real" (operational) condition of the plant as well as its appearance. For example, System Engineers are performing walk-downs of their systems to identify problems that should be corrected. As noted in Section I above, several actions have been taken to enhance system reliability by improving the condition of plant equipment, such as valves. Progress in this area is reflected in the increased numbers of preventive maintenance man-hours being worked (up to 2184 average per week in the second quarter of 1989 from 1166 average per week in the last quarter of 1988, an increase of 87%) and the increase in the PM/CM ratio as discussed in Section I.

The achievement of lasting improvements in material condition requires that personnel at every level understand management's standards and their personal responsibility for attaining plant material condition standards. We are taking the following steps to reinforce the concept of personal accountability for plant material condition:

- Weekly tours by plant management will be reinstituted now that the dual unit outage is over.
- Personnel are rated on their understanding of management standards and of their personal and department accountabilities during annual performance appraisals.
- Check lists have been developed which require Maintenance management and supervisors to perform evaluations and provide feedback to their subordinates on the quality of their performance in specified areas on a daily basis.
- INPO has been requested to perform periodic appraisals of our success in improving implementation of the maintenance program.

As noted in the July 19, 1989 management meeting, the material condition of Turkey Point is improving; however, more progress must be made. Plant material condition will continue to be the focus for intensified monitoring by site management. In particular, as noted in the materials submitted to Region II on April 28, 1989, a comprehensive plan for site material condition upgrades is under development.

III. Allocation of Resources for Parts and Permanent Staff

A. Spare Parts

On April 12, 1989, a team of representatives 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.

. The following were identified as reasons for problems with spare parts availability:

- Some often-needed spare. parts were not in Stores.
- Items with long procurement lead times were not in Stores.
- Stores contained large numbers of obsolete or unqualified parts.
- Purchase Order processing times was often lengthy.

The team initially met on a daily basis to identify and implement solutions to these problems. It now meets on a biweekly basis and working groups still meet on a daily basis. Among the corrective actions taken have been:

- Identifying parts needed for upcoming outages, ordering these parts, and entering them into the Stores inventory list.
- Initiating Purchase Orders for Stores items that are currently below minimum stock levels.
- Instituting a commercial grade dedication program to allow the use of standard-grade parts for some applications (see Section IV).
- Negotiating a blanket Purchase Order with Westinghouse to cut down Purchase Order approval time.
- Accelerated efforts to identify and remove obsolete parts from Stores.

These actions are showing positive results. In particular:

- (i) The number of Stores items below minimum stock levels dropped from 5,154 in May, 1988 to 4,779 as of July, 1989. Approximately 2300 Purchase Orders for items below minimum stock levels are at vendor shops to be filled, which should further reduce this number.
- (ii) The average procurement cycle time for inventory items has been reduced from 111.5 days to 77.8 days (approximately a 25% decrease).
- (iii) The proportion of procurement requests for items that are needed on an "urgent" basis is starting to fall (from a peak of 44% in March, 1989 to 30% in June, 1989) due to the availability of more parts in Stores and the completion of the dual unit outage.
- (iv) Obsolete parts are being deleted from Stores. More obsolete parts (772) were cancelled in the first six months of 1989 than in all of 1988. Four hundred (400) additional cancellations are currently in process for cancellation approval.
- (v) The number of PWO's awaiting parts has dropped from over 300 in December, 1988 to a low of 168 in July, 1989.

Efforts to improve our performance in this area are continuing.

B. Permanent Staff

In the area of staffing, the NRC noted an excessive use of contractors in Health Physics and System Engineering, along with high turnover rates in I&C.

Although we will continue to require contractors in these areas during peak work activities and for special projects, FPL has made significant progress in hiring permanent employees. The Health Physics authorized staffing level has been increased from 45 to 88 permanent FPL employees; 68 permanent Health Physics personnel are currently on site, an increase of approximately 25 since December, 1988. Staffing to the authorized level is expected to be complete in December, 1989. A job fair to recruit Radiation Protection Technicians for the Health Physics department will be held in August. Twenty-two candidates have signed up for the job fair Similarly, in the area of Technical Support, as so far. discussed in Section I, progress has been made in hiring System Engineers. The authorized complement of System Engineers was increased to 28 from 16 in March, 1988. Twentyfive of these 28 are now on site; the remaining three have been hired and will arrive in the next three months.

The authorized number of I&C Specialists is set at 65, which is ten greater than actual needs, in order to assure that

sufficient numbers of specialists are available to compensate for turnover. Present actual staffing is at 50 specialists. A job fair planned for August, 1989 should allow sufficien'. new hires to meet authorized levels. To date, 21 interviewees are scheduled to participate in this job fair. Job fairs of this type were very successful in attracting recruits for Turkey Point Operator training.

Operator training opportunities have accounted for about one half of all departing I&C Specialists. Because the currently filled Operator training class should supply Turkey Point's Operator needs for some time, departures for this reason should decrease. In addition, recent selection of more experienced individuals for I&C supervisory positions (I&C Supervisor, Assistant I&C Supervisor, Production Supervisor, and Planning Supervisor) should improve the working atmosphere within the department. Overtime reduction should also help reduce turnover (see Section IX).

IV. Engineering Support

A broad range of actions has been taken to improve engineering support of maintenance. In addition to the steps taken to hire additional System Engineers, the additional System Engineer training and the enhanced role of System Engineers in resolving equipment problems described in Section I, Maintenance, Site Engineering, and Technical Support personnel participate in weekly meetings at which engineering work schedules are reviewed. This allows Maintenance to provide its input to the prioritization process and to maintain cognizance of ongoing engineering activities which may impact maintenance workloads.

Engineering has also provided a dedicated team to help in the work of the Control Room "green tag" backlog. Approximately 50 PCMs have been initiated that should prevent a substantial number of Control Room equipment problems from recurring (44 of these have been issued). Implementation of these PCMs (9 have been implemented) should reduce the "green tag" backlog significantly. Daily discussions between Maintenance and Engineering personnel have been taking place since June, 1988 to develop and plan actions to reduce the number of Control Room "green tags". Engineering is also providing personnel to support procurement activities associated with maintenance efforts to reduce the number of "green tags". The number of control room instruments out of service for both units has declined from 83 in December 1988 to 62 as of June 1989.

Engineering is also playing a substantial role in the efforts to reduce spare parts unavailability problems, which impact the ability of Maintenance to complete work. The group working on parts availability (see Section III) includes representatives from Site Engineering, who participate in daily Procurement Coordination meetings. Additionally, in

March, 1989, Engineering initiated a pilot Commercial Grade Dedication program. Under this program, Engineering prepares "dedication packages" which provide the technical justification for the use of commercial grade replacement parts in particular applications. To date, 5 dedication packages have been issued, primarily for Electrical and I&C items. Use of commercial grade parts makes procurement much simpler and reduces procurement times.

Another area in which Engineering support for Maintenance has improved is in the preparation for plant outages. Plant Change/Modification (PCM) packages to be worked during outages are being prepared further in advance to facilitate outage maintenance planning. For example, 60 days prior to the Turkey Point Unit 4 outage that commenced in the fall of 1988, approximately 35% of the PCMs planned to be worked during the outage had been prepared. To date, 45.8% of the PCM packages identified for the Unit 3 1990 outage have been prepared, and our goal is to have 95% prepared 60 days prior to the commencement of the outage.

Finally, Engineering will be performing a Probabilistic Risk Assessment (PRA) for Turkey Point. A contract was awarded to Science Applications International Corporation (SAIC) for this work on June 23, 1989. A detailed schedule of PRA activities is due to be issued in early August, after which we plan to schedule a meeting with the NRC to discuss the PRA.

In sum, Engineering support of maintenance has shown significant improvement, and actions are planned to further enhance Engineering's support role.

V. Insufficient Numbers of OC Inspectors

The MTI noted that QC inspectors were accomplishing proper control of quality related activities, but that there were insufficient numbers of QC inspectors and those inspectors have been working excessive amounts of overtime. An analysis has been performed of QC staffing levels and overtime. The approved QC staff for maintenance work inspection was augmented by 3 individuals during portions of the dual unit outage, and approval for additional permanent QC inspectors is now being processed. Also, overtime goals for the QC Department have been set at 16% for 1989. Actual overtime levels declined from 37% in January, 1989 to 10% in June, 1989.

VI. Work Order Controls and Job Planning

Several improvements have been made to the maintenance planning process. These include:

- Additional training on job planning techniques for job planners. This training was completed April, 1989. A review of the effectiveness of this training is underway.
- Enhancements to the Nuclear Job Planning System (NJPS) which permit the recording of more informative work history data.
- Two Backshift Maintenance coordinators have been hired. One is now on board, the other is due to arrive in August. These coordinators assure that maintenance work is properly coordinated with other site departments (such as Operations, QC, Health Physics, and Security) so that all necessary clearances and personnel are in place to support maintenance work.
- Two Maintenance planners per discipline (a total of 6) have been hired to provide planning support to the backshifts.
- Periodic meetings attended by all department planning supervisors have been held to evaluate and develop measures to improve the maintenance planning process and its implementation. Beginning in March, 1989, these meetings have been used to review sample PWO's for errors, and action has been taken to prevent the recurrence of certain repetitive errors such as inaccuracies in journeymen's work reports.

These improvements should result in a better overall planning process. In addition, the Scheduling and Maintenance Departments will soon begin to track on-time job completion for plan of the day "hot items" as a performance indicator. This indicator will be a measure of whether planning and scheduling was of sufficient quality to permit completion of work without delays.

VII. Procedure Development

Inadequacies in procedures remain the major cause of maintenance violations, and substantial focus is being placed on improving the quality of maintenance procedures.

1. Check lists used to assure that each new or revised maintenance procedure goes through a proper preparation and review sequence have been reviewed and improved. Procedure writers have received training on the use of these check lists, as well as on general principles of good procedure writing. This training was completed in February, 1989.

- 2. The proc. for ensuring that plant changes are factored into procedures has been improved. A departmental instruction has been issued which requires a review of plant changes by both an Operations and a Maintenance procedure writer.
- 3. An improved process for validating new procedures has been established. Pursuant to this process, procedure writers are present to observe the work the first time a new procedure is utilized. As the work progresses, any problems in implementing the procedure are noted and recorded. Changes to the procedure are then made as necessary to eliminate problems. Procedures formalizing this process were issued on July 20, 1989.
- 4. Maintenance management is encouraging workers to provide feedback on procedure problems so that inadequate or ambiguous procedures can be corrected. In the electrical discipline, a pilot program has been established under which a team of Maintenance craft personnel, maintenance supervision, and a procedure writer are reviewing and revising "problem" procedures. If successful, consideration will be given to extending this program to the other maintenance disciplines.

VIII. Spare Parts Control

Activities to improve spare parts control are described in Sections III and IV above. As noted in Section III, performance indicators in this area are showing significant improvement.

IX. <u>Turnover Rates, Overtime Rates, and Performance Appraisals</u>

Maintenance management recognizes the need to reduce turnover and overtime rates for Maintenance personnel. Turnover rates for the various Maintenance disciplines during January through July, 1989 were:

Electrical	8.9%
Mechanical '	12.6%
I&C	23%

The rates of turnover in I&C are not satisfactory; however there is reason to believe that this turnover level will move lower. Approximately one-half (7 of 15) of the individuals leaving the I&C Department during the first half of 1989 entered Turkey Point's most recent Operator training class. This class is now full and no new classes are planned for the near future. Thus the single largest cause of turnover has been eliminated in the near term. Also, overtime levels for I&C personnel are declining, from over 40% in January through March, 1989 to less than 30% for the month of June. A target of 26% has been established for 1989. Finally, 10 I&C positions over the actual number needed are authorized, so that staff will be available to mitigate the effects of turnover. Job fairs to be held in August are expected to result in hires to fill these positions.

With respect to overtime, new controls were instituted at. the beginning of 1989. These include a requirement for weekly pre-approval of overtime for Maintenance supervision responsible supervisor, and tracking by each and reconciliation of overtime against an overtime budget. Since the end of the dual-unit outage, management has focused significant effort on reducing overtime and Maintenance overtime levels have generally decreased. Electrical discipline overtime went down from over 40% in January through February, 1989 to less than 30% for June, 1989; Mechanical discipline overtime dropped from nearly 50% in January through February, 1989 to less than 20% in June, 1989 (rates in I&C are discussed above). In sum, good progress is being made in reducing Maintenance overtime.

Regarding personnel evaluations, performance appraisals for maintenance management personnel are up-to-date. To assure that performance appraisals are completed in a timely fashion, appraisal completion is being tracked by department so that departments responsible for delinquent appraisals are identified. Although the backlog of delinquent appraisals is still too high, efforts to bring appraisals up-to-date are progressing. In December, the NRC found that 35% of bargaining unit maintenance employees had not had an appraisal in the last six years. As of July 1989, this figure had been reduced to 7.1%. Similarly, the percentage of delinquent two-year appraisals dropped from 81% in December 1988 to 23% in July 1989.

In summary, FPL has taken action to address each of the major areas of weakness noted in the MTI. In nearly all of these areas, FPL has established or will soon have available clear performance measures that will demonstrate whether progress is being made. Although it is clear that more improvement is needed in some areas, many of these indicators are now showing positive trends.



L-89-345 September 19, 1989

Mr. Stewart D. Ebneter Regional Administrator - Region II U. S. Nuclear Regulatory Commission 101 Marietta Street - Suite 2900 Atlanta, GA 30323

Dear Mr. Ebneter:

an FPL Group company

Re: Turkey Point Units 3 & 4 Docket Nos. 50-250 and 50-251 Security Program Improvements

In the past year, Florida Power & Light Company (FPL) has taken several steps to upgrade the Turkey Point security program and its implementation. A number of FPL's actions have been described to you at the management meetings between FPL and the NRC, most recently during the September 19, 1989 meeting. The attachment to this letter provides a comprehensive description of the security improvements made by FPL and the performance results have been achieved.

These upgrades are being reflected in improved performance. Since early May 1989, there have been no significant problems caused by the actions of security personnel and the number of loggable security events has steadily declined during the last few months from an average of 46 per month in December 1988 through April 1989 to 35 per month during May through August 1989. In addition, the number of compensatory post hours worked has declined; since the beginning of 1989, an average of 542 compensatory post hours have been worked each month, compared to 1654 per month during 1988. (Since the beginning of April 1989, the average has been 280 compensatory post hours per month.)

In addition, FPL has hired a new Security Superintendent for Turkey Point, Mr. Franklin R. Timmons. Mr. Timmons has more than 20 years of security and law enforcement experience, including 9 years in the nuclear industry, and has successfully managed or been involved with security programs at four other nuclear power facilities. Mr. Timmons has been on site at Turkey Point since July 21, 1989, and was appointed Security Superintendent on September 1, 1989. We believe that Mr. Timmons is a strong leader who will help continue the recent good performance achieved in security. Page: Two To: Mr. S. D. Ebneter L-89-345

Please call me if you wish to discuss these matters further.

Very truly yours,

J. H. Goldberg Executive Vice President

JHD/rat

Attachment

cc:

Dr. Thomas E. Murley, Director, Office of Nuclear Reactor Regulation, USNRC

Senior Resident Inspector, USNRC, Turkey Point Plant U. S. Nuclear Regulatory Commission, Document Control Desk, Washington, D. C.

ATTACHMENT

The actions that FPL has taken to improve security programs at Turkey Point, along with performance results that have been achieved, are described below.

An overall indicator of security performance is loggable security incidents. In general, when plant security is functioning smoothly, the number of these incidents will be low. The number of Turkey Point loggable security events has declined from an average of 48 per month in 1988 to 41 per month through August, 1989, a decrease of approximately 16%. This decrease is especially significant because it was largely achieved during a time when the security system had to cope with large numbers of craft and contractor personnel on site performing maintenance and modification work during the recent dual unit outage.

The number and frequency of incidents involving the actions of security personnel has also decreased. Since early May 1989, no significant repetition of such problems has occurred and recent NRC inspections of Turkey Point security activities (Inspection Report Numbers 89-30 and 89-33) have not identified any violations.

Specific improvements to Turkey Point security programs have been made in the following areas:

A. MANAGEMENT CHANGES

Improvements in Security Department management include:

- -a new Security Superintendent who has more than 20 years of security and Law Enforcement experience, much at supervisory levels, including nine years in the nuclear industry. This individual successfully managed security programs at the Clinton and Vogtle nuclear power stations.
- -an individual with successful security experience at the St. Lucie plant was appointed to the newly created position of Corporate Security Manager in July, 1988. This individual has devoted substantial time to improving security performance at Turkey Point, including serving as Acting Security Supervisor from May 8, 1989 through August 31, 1989.
- -five security shift specialists were appointed to provide on-site FPL security management supervision over contractor security activities on all shifts. The full complement of these specialists has been in place since September 6, 1988, and placed on shift October 8, 1988.

These management changes add depth of experience to the security management team for Turkey Point, and provide more direct control over security contractor activities.

B. COMPENSATORY POSTS

A number of security incidents at Turkey Point have involved persons stationed at compensatory posts due to security equipment out of service. In March 1989, a task force was formed to identify ways to improve security performance, including ways to reduce compensatory post hours. The task force determined that compensatory post hours could be reduced by increasing the priority of maintenance of security hardware (see page 5), and by meeting daily with maintenance personnel to review security equipment problems. These actions were implemented in March, 1989. Additionally, in May, 1989, new security computer hardware was installed to replace older equipment with which there had been problems with reliability and spare parts availability. As a result, FPL has succeeded in reducing compensatory post hours worked from an average of 2030 hours per month during June through December 1988 to 542 hours per month in January through August 1989. (Since the beginning of April, 1989, an average of 280 compensatory post hours have been worked each month.)

C. SUPERVISOR SELECTION, TRAINING AND PROMOTION

FPL has taken several actions to improve the quality of security supervision, including:

- 1. In May 1989, security Sergeants, Lieutenants, and Captains were provided with supervisory skills training, including training on:
 - -supervisory style development
 - -motivating personnel
 - -management of priorities
 - -client/contractor relations
 - -constructive disciplinary procedures
 - -professional conduct/equal employment opportunities

Based on the results of this training and feedback from participants, a training course on these topics for key security management personnel was developed and conducted on September 6-8, 1989.

- 2. On April 13, 1989, a new promotion policy was developed which specifies the eligibility and proficiency requirements for promotion to each level of security supervision. When a supervisory position becomes available, an interview is conducted during which a promotion board poses a series of questions to each eligible candidate who is interested in the position. This promotion policy was further expanded on July 1, 1989, to include a more comprehensive security personnel evaluation program and to better describe security personnel career paths.
- 3. A letter was issued on June 1, 1989 delineating the responsibilities of each group within the security organization.

4. A series of self-study and classroom training courses is being developed to prepare security personnel for supervisory positions. Prior to becoming eligible for promotion to sergeant, lieutenant or captain, an individual must complete certain prescribed courses, including courses on leadership as well as specific courses dealing with the particular responsibilities of each level of supervision.

D. TRAINING FOR SECURITY OFFICERS

The training curriculum has been substantially revised, and now includes a total of approximately 240 hours of training, of which 30% is classroom training and 70% is field training that is directly related to the practical aspects of performing key security tasks. This training includes:

-demonstrations of access control techniques at actual site entry barriers;

-simulated patrols;

-simulated alarm responses;

-demonstrations of observation tower techniques;

-demonstrations of search techniques; and

-demonstrations of vehicle escort techniques.

During this training, trainees are required to perform simulations of these tasks themselves, and are critiqued on their performance by instructors.

E. FIELD PERFORMANCE EVALUATIONS

A trial program for field evaluation of security personnel was implemented in February 1989. This program tests the performance of security personnel, on an unannounced basis, in simulated security situations. Examples include:

-requests made for incorrect badge number or a badge with a picture that does not match the requestor;

-security alarms in various plant areas and response by security personnel;

-access to the vital area with an improper badge;

-establishment of compensatory posts;

-attempted introduction of contraband into the protected area;

-security barrier degradation (simulated hole in fence).

Individuals are rated on the quality of their response and are critiqued and coached by evaluators to improve their performance. Implementation of this program on a permanent basis will occur by the end of 1989.

F. SECURITY FORCE TURNOVER

A survey was performed of security personnel to determine the reasons for excessive turnover. Survey results indicated the following as possible causes:

> °Perceived supervisory insensitivity °Lack of a clear promotion policy °High overtime

Action has been taken to address each of these concerns:

-Supervisors were given training on personnel handling and sensitivity to employee concerns, which was completed in early May, 1989. In addition, a security team was formed on July 6, 1989 which meets weekly to address security force members' concerns. The team includes elected security force members from each shift, a contractor shift supervisor and management representative, and an FPL security shift specialist. Minutes of each meeting are kept and each concern is documented and the reasoning behind the disposition of the concern is provided.

-The security force contract was changed effective July 24, 1989 to provide for increased medical, dental and retirement benefits; the new contract also provides financial incentives for remaining with the security force and bonuses for outstanding performance. Performance ratings are based upon personnel errors leading to loggable or reportable events, lost time due to accidents, attendance, and disciplinary actions.

-As noted on page two, a new security contractor promotion policy was issued on April.13,1989 which establishes clear promotion eligibility criteria and standards for choosing individuals to be promoted. This policy is now being enhanced to include better performance evaluation methods.

-Overtime has been reduced during the last several months, from an average of 19.8% per month during 1988 to 15.9% per month to date during 1989. A goal of 15% overtime has been established.

To date, these actions have had only moderate effect on turnover rates; however, a number of these actions were instituted only very recently, and FPL expects turnover levels to decline in the next several months.

G. SECURITY HARDWARE UPGRADES

FPL is proceeding with substantial upgrades to the security system. These upgrades will simplify security boundaries, reduce the need for compensatory and other manual security posts (including towers), and improve the reliability of security hardware. Components of the program include:

-New protected area perimeter fences;

-New electronic primary intrusion detection systems;

- -Fixed closed circuit television cameras that will replace existing fencing and defensive positions (towers);
 - -Revision of the protected area boundary to exclude the two fossil fired generating units at the Turkey Point plant; and

-Construction of a new centralized access facility.

In general, engineering studies and scheduling of installation for these upgrades has been completed; installation of the upgrades is scheduled to be finished by the end of December 1991. Construction is now underway on a bridge and roadway modifications that will permit reconfiguration of the protected area boundary.

H. CONTINGENCY RESPONSE PROGRAM

On July 5, 1989, individuals selected to make up dedicated contingency response teams began receiving special training on response to identified threats, including training on sealing off intrusion areas, coordinating and performing area searches, detention of intruders, and communication during incident response. Teams for each shift were formed on July 17, 1989. Response team members are scheduled to undergo comprehensive Strategic Reaction Team (SRT) training next year. There is an active program on all three shifts to conduct contingency drills to permit us to implement training concepts that are being taught.

I. MAINTENANCE OF SECURITY HARDWARE

A maintenance crew has been dedicated to servicing security equipment in order to reduce equipment down time. Also, security maintenance items that require compensatory measures have been upgraded from priority level A2, which allows 48 hours for work to be performed, to priority level A1, which requires that work be performed within 24 hours. The success of this approach in keeping security equipment available is reflected in the lower number of compensatory post hours (see page 2).

J. COORDINATION OF MAINTENANCE ACTIVITIES

Efforts have been made to assure that maintenance personnel are aware of their security responsibilities during the performance of their work, and to coordinate maintenance planning with site security so that appropriate security arrangements can be made to accommodate maintenance work. Personnel in each of the Maintenance disciplines have been briefed on their security responsibilities by the Security Supervisor. A Security representative attends the morning Plan of the Day meetings at which maintenance and other significant site activities are scheduled. This participation permits Security to anticipate and prepare for site activities that may require additional or modified Security coverage.

K. UPGRADED SECURITY ORIENTATION TRAINING

Security Orientation Training (SOT) for all personnel badged to enter the Turkey Point Vital or Protected areas has been revised to provide in-depth instruction on each person's security responsibilities. SOT now includes instruction on:

-access control process

-escort responsibilities

-reaction to unbadged/improperly escorted persons

-notification of security when assistance is needed

This training emphasized that plant security is the responsibility of all site personnel, not just the security department.

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

Gentlemen:

Re: Turkey Point Units 3 and 4 Docket Nos. 50-250 and 50-251 Training Program Improvements

The purpose of this letter is to document improvements made in Florida Power & Light Company's (FPL's) operator training program for the Turkey Point nuclear plant, particularly in the area of requalification training, and results achieved to date. Many of these improvements were described during the July 19, 1989 meeting between the NRC and FPL at Turkey Point.

In part because of concerns with the operator requalification program at Turkey Point, the NRC conducted an inspection of operator training activities On May 1-5, 1989 (Inspection 50-250/89-23 and 50-251/89-23). During the inspection, no violations of NRC requirements were identified, but several areas needing improvement were noted.

On May 15, 1989, FPL presented a long-term requalification training recovery plan to the NRC which described the specific actions that had been taken and were planned to improve requalification training at Turkey Point. FPL has made significant progress in implementing this plan and in achieving improved operator staffing levels and test pass rates:

- a fifth operating crew, tested after an enhanced regualification training program, achieved a 100% pass rate on regualification examinations administered by the NRC during the week of May 30, 1989, and is now on shift rotation;
- personnel to increase shift manning are currently in training and are scheduled to complete training and testing and be available for shift work in December 1989. To date, this group has achieved a 100% pass rate on periodic class examinations.

Enclosure 3

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a group of 32 potential license candidates achieved a 100% success rate on the recent NRC pilot Generic Fundamentals Examination;

FPL has recruited 32 individuals with engineering, physical science, or plant backgrounds to undergo training for one-step licensing as Senior Reactor Operators (SRO's). This class began training on July 31, 1989 and is presently scheduled for licensing in October 1990.

Improvements in the requalification training program for 1989-90 have also been made:

- the amount of simulator practice time has been increased by 50%, and simulator exercises now include complex scenarios, with malfunctions occurring after the major event;
- in-house operator training tests include the use of the "open book" format that is utilized during the NRC-administered regualification tests;
- training materials have been upgraded and unnecessary and redundant material has been eliminated, thus providing better focus on important topics;
- FPL has arranged for third-party assessments of training effectiveness by Westinghouse, Enercon and INPO;
- a license retention compensation program has been instituted that provides incentives for good performance by operators.

We believe that these improvements should help continue the success achieved during the most recent requalification testing.

Finally, changes have been made to strengthen the management of the operator training program. A new Turkey Point plant training superintendent has been appointed who has held a SRO license and who has more than 17 years of training experience in the nuclear power industry. Also, a new training manager with more than 16 years of training and education experience, including eight years with INPO, has been hired to head FPL's corporate nuclear training U. S. Nuclear Regulatory Commission Page 3

This strengthened management team is already department: contributing to improved training effectiveness.

In sum, FPL has placed substantial effort into improving its operator training programs, and this effort has begun to show positive results in terms of the number of licensed operators and examination pass rates. The attachment to this letter describes in more detail the improvements made and results achieved in the areas of operator staffing, training management and instructors, and training content and standards.

Very truly yours,

Ulilian X

C. O. Woody Acting Senior Vice President-Nuclear

Attachment

COW/JRH/cm

cc:

Stewart D. Ebneter, Regional Administrator, Region II, USNRC Thomas E. Murley, Director, Office of Nuclear Reactor Regulation, USNRC

Senior Resident Inspector, USNRC, Turkey Point Plant

Attachment

This Attachment describes the improvements that have been made in FPL's operator training program for the Turkey Point nuclear plant in three major areas: A. Operator Staffing; B. Training Management and Instructors; and C. Training Content and Standards. These improvements address the operator requalification training program and the concerns and weaknesses identified during the NRC's May 1-5 inspection of operator training (Inspection 50-250/89-23 and 50-251/89-23).

A. <u>Operator Staffing</u>

The number of licensed operators for Turkey Point has been increased, and steps have been taken to assure an adequate complement of operators in the future. Specifically:

- A fifth shift of operators completed requalification (1) testing and began shift rotation on June 24, 1989. Members of this shift benefitted from an enhanced requalification training program prior to taking an NRCadministered requalification examination during the week of May 30, 1989. Those individuals having identified weaknesses were remediated to counter the deficiencies. This program included an increased amount of simulator training time using complex scenarios, and approximately 120 hours of classroom remedial training. All practice requalification tests utilized the open reference format used during NRC-administered examinations. Training for the fifth shift was successful: 100% (11 of 11) of who took the NRC-administered remedial those requalification examination passed.
- (2) Personnel to increase shift manning are now in training. This group includes six individuals seeking Reactor Operator (RO) licenses and four individuals seeking to upgrade from RO to Senior Reactor Operator (SRO). To date, this group has achieved an average pass rate of 100% on periodic FPL in-house tests. Also, a number of individuals in this group were among those who achieved a 100% pass rate on the recent NRC Generic Fundamentals Examination (GFE). Licensing examinations for this group are scheduled for November 1989, and assignment to shift rotation is expected to commence in December 1989.
- (3) To assure that sufficient numbers of operators are available for future needs, FPL has initiated another licensing class, which started training on July 31, 1989. This licensing class consists of 32 individuals (out of approximately 60 candidates interviewed). The license candidates have engineering or physical science degrees, or have previous plant experience, and are

degrees, or have previous plant experience, and are consequently eligible for training to become SROs. The new license class is scheduled to complete training in October 1990, and is expected to provide 15-25 SROs.

- (4) Action has been taken to improve the quality of license candidates and reduce operator class attrition. The required Plant Operator Selection System (P.O.S.S.) aptitude score for acceptance into the non-licensed operator program was raised to 11 from the previous cutoff level of 9. The NRC GFE also provides an early indication of the likelihood of candidate success. Several of the individuals in the new license class participated in the NRC GFE administered on June 28, 1989, in which a 100% pass rate was achieved.
- To reduce turnover, FPL has instituted an operator (5) license retention incentive program. Under this program, operators are rewarded based upon their performance in retaining their licenses each year and upon the length of time they retain their licenses. Incentives are graded based upon whether operators pass requalification examinations on the first attempt or require remediation prior to passing. This program has been well-received by plant operators. FPL believes that this program will result in lower operator turnover and better requalification test results. In addition, increased number of operators should reduce the individual operator workloads, stress and fatique. Operations Department overtime has decreased from 28% in January 1989 to 23% in July 1989.

B. <u>Training Management and Instructors</u>

1. Training Management

Management changes have been made in both the Turkey Point and corporate staff training departments as discussed in the cover letter.

2. <u>Training Instructors</u>

FPL is taking action to replace contractor training instructors with permanent FPL employees, increase the number of training instructors, and improve their training and qualifications.

Eighteen new permanent Turkey Point training instructor positions have been authorized to replace 15 contractors. To date, four of these 18 positions have been filled, and three additional offers have been accepted. Six positions are scheduled to be filled with individuals from the SRO class due to be licensed in October 1990. Efforts to fill the remaining five positions are ongoing. Until these positions are filled, contractor personnel will continue to be utilized. In the future, as more licensed individuals become available than are required for operations, there will be an additional pool of personnel from which to draw qualified instructors.

Improvements have also been made with respect to instructor training and qualifications:

- (a) A goal has been set to have 80% of all FPL licensed operator instructors hold SRO licenses by 1992. Currently, 47% hold SRO licenses. The availability of the SROs scheduled to be licensed in October 1990 will contribute to reaching the goal.
- (b) Simulator instructors have been provided with additional training in student critique and evaluation techniques.
- Job requirements for training instructors included (C) in Administrative Guideline AG-001, "Instructor Training and Qualifications," are being revised to set forth instructor qualification and training requirements in more specific and objective terms, to define required instructor training in terms of specific job and task elements, and to incorporate from more specific criteria 💈 for exemptions instructor training which are based upon the knowledge, skills and abilities needed to accomplish particular training tasks. Revisions to AG-001 are scheduled to be completed during August 1989.
- (d) With the revisions to AG-001, FPL is also upgrading its training documentation. A separate file for each instructor (and trainee) is now maintained which generally includes the following information concerning his or her training and gualifications:
 - 1. A cover sheet identifying completed qualifications
 - 2. Resume
 - 3. Contractor Certification Form (if applicable)
 - 4. Technical Evaluation(s)
 - 5. Instructional Evaluation(s)
 - 6. Course Completion Records
 - 7. Examinations/Job Performance Measures
 - 8. Licenses (e.g. RO, SRO) if applicable
 - 9. Description of In-plant activities (if applicable)
 - 10. Exemption or extension documents (if applicable)

These records provide a comprehensive training and qualification profile of each individual, and permit efficient determination of whether instructor training qualification requirements have been met.

- (e) To assure that instructors are competent, FPL requires instructors to demonstrate their technical and instructional competency at least annually. Results of these evaluations are systematically evaluated to determine whether any remedial instructor training is required.
- (f) Student feedback is used to improve instructor performance. Students have been requested as classes are scheduled to evaluate the quality of the training they receive (including instructor performance) and provide suggestions on how it might be improved. Plant training department management has found this feedback useful for evaluating and coaching instructors.

C. Training Content and Standards

1. Improvements to Requalification Training

In order to achieve requalification of a fifth shift of operators for Turkey Point, FPL initiated an enhanced requalification training program, incorporating the following as necessary to remediate areas of identified weakness:

- (a) Additional hours of simulator training time were provided. Simulator practice exercises were upgraded to include practice on complex accident scenarios. During evaluations of trainee simulator performance, special emphasis was placed upon team behavior. Also, plant management (including the Turkey Point Site Vice President, the Plant Manager, or the Operations Superintendent) observed crew performance on the simulator and provided feedback during evaluations.
- (b) Students were specifically trained and evaluated on all JPMs issued since their last requalification or initial licensing (whichever was later). This training assured their preparedness to perform well on these measures.
- (c) Approximately 120 hours of additional remedial classroom training was provided. This classroom training focused on those areas in which operators had difficulty during NRC requalification examinations held in March 1989.

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(d) FPL in-house and practice examinations were held using the open reference format utilized during NRC-administered requalification examinations so that operators would be familiar with the format.

As a result of these improvements, 100% (11 of 11) of the individuals who took the NRC requalification examination during the week of May 30, 1989 passed.

In addition, the following actions are being taken to further improve requalification performance:

- Third-party independent assessments of training effectiveness have been performed by Westinghouse, Enercon and INPO. These assessments were conducted over the past several months.
- Training materials have been reviewed and revised to provide better focus on information necessary for competent job/task performance.
- A license retention incentive program has been established which provides financial rewards to operators who pass the NRC requalification examination on the first try and otherwise maintain their qualification status.

The following goals/performance measures have been established for the 1989-90 regualification program:

- O Ultimate Goal -- achieve 90% Pass Rate on NRC Requalification Examination.
- o Interim Goals
 - achieve 95% pass rate on weekly internal examinations
 - achieve 95% pass rate on FPL annual examination (first try)
 - individuals successfully complete all assigned JPM's

crews perform critical steps on the simulator without error and be evaluated as satisfactory overall

The average pass rate on weekly requalification training examinations has been 98.8%. Success in meeting other interim goals will be determined when the relevant tests/evaluations take place. The next NRC-administered requalification examination is scheduled for March 1990.

2. <u>Other Improvements to Operator Training Content and</u> <u>Standards</u>

FPL has made other improvements to operator training programs which have begun to show positive results. Turkey Point operator candidates (initial licensing from Group 11) achieved a 92% pass rate (11 of 12) on the NRC licensing examination administered during December 1988 (the most recent examination). Also, as noted above, candidates who took the recent NRC Generic the Fundamentals Examination achieved a 100% pass rate. Student feedback indicated that training had prepared them well for the examination. Additional improvements to sustain this good performance include:

- (1) The score on the POSS aptitude test required for non-licensed operator candidates has been raised from 9 to 11 to assure that better quality candidates enter the non-licensed operator training program. This change should help reduce attrition during training classes and improve pass rates on licensing examinations.
- (2) A schedule has been developed for systematic updating of all task analyses and training materials by March 1, 1991. The interim schedule prioritizes material based upon when it will be needed for a course. Training materials currently in use are up to date.
- (3) Improvements have been made to methods used to select the contents of tests and evaluations. Administrative Guide AG-015, "Design" is being revised to provide instructors with guidance by means of:
 - a matrix which specifies what training methods, materials, and setting (<u>i.e.</u>, classroom, simulator) are to be used to train particular groups on particular topics.
 - a table of specifications which provides objective sequencing and leveling.
 - a course design map and training plan which explains the relationship of training course activities to the objectives sought to be achieved through the training, and how training should be sequenced to meet these objectives.

This revision is scheduled to be approved during August 1989.