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**SUBJECT:** Documents improvements made in util operator training program for plant, particularly regualification training.

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FPL

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AUGUST 25 1989

L-89-306

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:

- o a fifth operating crew, tested after an enhanced requalification training program, achieved a 100% pass rate on requalification examinations administered by the NRC during the week of May 30, 1989, and is now on shift rotation;
- o 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.

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

- o 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;
- o in-house operator training tests include the use of the "open book" format that is utilized during the NRC-administered requalification tests;
- o training materials have been upgraded and unnecessary and redundant material has been eliminated, thus providing better focus on important topics;
- o FPL has arranged for third-party assessments of training effectiveness by Westinghouse, Enercon and INPO;
- o 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.

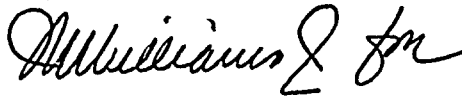
Finally, changes have been made to strengthen the management of the operator training program. A new Turkey Point plant training superintendent has been appointed who has held a SRO license and who has more than 17 years of training experience in the nuclear power industry. Also, a new training manager 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

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department. This strengthened management team is already 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,



C. O. Woody  
Acting Senior Vice President-Nuclear

Attachment

COW/JRH/cm

cc: Stewart D. Ebnetter, 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. Operator Staffing

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:

- (1) A fifth shift of operators completed requalification testing and began shift rotation on June 24, 1989. Members of this shift benefitted from an enhanced requalification training program prior to taking an NRC-administered 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 those who took the NRC-administered remedial 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 cut-off 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.
- (5) To reduce turnover, FPL has instituted an operator 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, the increased number of operators should reduce individual operator workloads, stress and fatigue. Operations Department overtime has decreased from 28% in January 1989 to 23% in July 1989.

## B. Training Management and Instructors

### 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. Training Instructors

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.
- (c) Job requirements for training instructors included 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 more specific criteria for exemptions from 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 qualifications:
  - 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 Regualification Training

In order to achieve regualification of a fifth shift of operators for Turkey Point, FPL initiated an enhanced regualification 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 regualification 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 regualification examinations held in March 1989.



- (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 requalification 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. Other Improvements to Operator Training Content and Standards

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, the candidates who took the recent NRC Generic 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 (*i.e.*, 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.