



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

November 12, 1982

Report Nos. 50-250/82-31 and 50-251/82-31

Licensee: Florida Power and Light Company
9250 West Flagler Street
Miami, FL 33101

Facility Name: Turkey Point

Docket Nos. 50-250 and 50-251

License Nos. DPR-31 and DPR-41

Inspection at Turkey Point site near Homestead, Florida

Inspector: C. M. Hosey
C. M. Hosey

11/9/82
Date Signed

Inspector: B. T. Debs
B. T. Debs

11/9/82
Date Signed

Approved by: K. P. Barr
K. P. Barr, Section Chief
Technical Inspection Branch
Division of Engineering and Technical Programs

11/12/82
Date Signed

SUMMARY

Inspection on October 18-22, 1982

Areas Inspected

This routine, unannounced inspection involved 73 inspector-hours on site in the areas of Radiation Protection Program, including qualification of staff, training, radiological protection procedures, instruments and equipment, external exposure control, internal areas, posting of notices, radiological surveys and notification & reports; followup on post TMI action items, followup on licensee event reports and followup on previous inspector identified items.

Results

In the areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

H. E. Yaeger, Site Manager
*D. W. Haase, Acting Plant Manager-Nuclear
*P. W. Hughes, Health Physics Supervisor
*J. L. Danek, Corporate Health Physicist
J. S. Wade, Jr., Nuclear Chemistry Supervisor
J. R. Bates, Health Physics ALARA Supervisor
*R. M. Brown, Health Physics Operations Supervisor
*T. A. Coleman, Health Physics Admin. Supervisor
A. E. Byrnes, Auxiliary Building Supervisor
E. J. Schmitt, Chemist
R. M. Givens, Health Physics
M. A. Ammerman, Health Physics Training

Other licensee employees contacted included ten construction craftsmen, eight technicians, three operators, mechanics, security force members, and three office personnel.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on October 22, 1982, with those persons indicated in paragraph 1 above. The inspector stated that the plant's health physics staff had established an exceptionally good organization and program for the Unit 4 steam generator replacement project.

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Followup on Previous Inspector Identified Items (IFI)

- a. (Closed) IFI (250/82-16-02; 251/82-15-02) Whole Body Count Procedure Change. The licensee revised plant procedure HP-31 on July 22, 1982, to lower the investigation level for bioassay from 20 percent of a maximum permissible organ burden to 10 percent. The inspector had no further questions.

- b. (Closed) IFI (250/251/82-05-01) Hard Piping for Portable Demins. The licensee has replaced most of the rubber hoses in the portable demineralizer system with stainless steel pipe. The use of rubber hose has been minimized. The inspector had no further questions.
- c. (Open) IFI (250/80-17-04; 251/80-15-04) Organizing and Documenting the Health Physics Retraining Program. A licensee representative stated that the licensee was in the process of reviewing bids on a contract to develop a technician training, qualification and periodic retraining program. He further stated that the vendor will probably be selected within the next month and that the program should begin shortly after the first of the year. The inspector stated that progress in developing training/retraining program will be monitored during subsequent inspections.
- d. (Open) IFI (250/80-17-27; 251/80-15-27) Evaluation of Ventilation Flow in the Auxiliary Building. A licensee representative stated that the engineering evaluation to identify and propose corrections for the problem with the auxiliary building ventilation system will be completed by December 24, 1982. Plant modifications, if any, will require additional time for material procurement, manpower scheduling, etc. The inspector stated that this item will be reviewed during subsequent inspections.
- e. (Open) IFI (250/82-26-01) Review Gaseous Radioactivity Sampling System. The inspector observed that the licensee has completed modification of the sample lines for the plant vent SPING-4 radiation monitor to eliminate 90° bends in the lines. Modification of the sample lines for the steam jet air ejector radiation monitor is awaiting the completion of an engineering study and final resolution of the moisture problem in the sample air stream. The licensee is also continuing to evaluate the effect of reduced pressure in the sample chamber where gaseous radioactivity is collected and analyzed. The inspector stated that this item will be reviewed during subsequent inspections.

6. Licensee Event Reports

LER 82-009/03L-0, Routine Weekly Tritium Sample. The LER reported that the analyses of the weekly reactor coolant samples for Tritium Activity for Units 3 and 4 were not performed within 10 days of the previous samples as required by Technical Specifications. The previous samples were collected and analyzed June 6, 1982. The licensee collected the samples on June 14, 1982. At that time the analysis equipment was out-of-service. The licensee thought the analysis equipment could be repaired and returned to service prior to the expiration of the 10 day period. However, this was not the case. Analyses of the samples collected on June 14 and June 21 were found to be well within normal ranges. A licensee representative stated that the analysis equipment is old and repair is increasingly more difficult. A new

Liquid scintillation counter had been budgeted for, and will be procured in early 1983. Off site analysis will be used in the event the analyzer is down. The inspector stated that this item would be reviewed during subsequent inspection (250/82-31-01).

7. Qualifications

Technical Specification 6.3.1 requires that each member of the facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions. Paragraph 4.5.2 of ANSI N18.1 states in part that technicians in responsible positions shall have a minimum of two years of working experience in their specialty. An inspector reviewed the experience and training records for selected contract senior health physics technicians. All the senior technicians apparently met the minimum experience and training requirements. The inspector had no further questions.

8. Training

Health Physics Procedure HP-81 specifies the health physics training and retraining required for the plant staff. Plant procedure HP-81 states that health physics personnel will receive approximately 10 hours of lectures, demonstrations and practical exercises. A licensee representative stated that this refresher training was received each year. The inspector selectively reviewed the training records for the health physics staff to determine if they have received the required refresher training in the last year.

No violations or deviations were identified.

9. General Employee Health Physics Training

The inspector completed the plant specific portion of the general employee health physics training (GET). During the training, the inspector asked the trainer how the licensee is assured that personnel have read and understand the RWP under which they are entering since there is no RWP signature sign in. The trainer stated that the GET exam contains a "Go/No-Go" question regarding this requirement. If an individual fails this question, he has failed the entire exam and must retake the course. If the individual answers the question correctly, he must then achieve a passing score on the remainder of the exam.

No violations or deviations were identified.

10. Instruments and Equipment

The inspector observed a variety of radiological instruments (portable survey instruments, portable monitors, personnel friskers) in use, or available for use. The inspector checked calibration stickers, source response check records, performed battery checks for selected equipment in

the health physics office and various control points. The inspector discussed the radiation survey instrument calibration program with licensee representatives.

No violations or deviations were identified.

11. External Exposure Control

During tours of the plant, the inspector observed workers wearing personnel monitoring devices (pocket dosimeter and/or TLD). The inspector discussed the dose monitoring program with licensee representatives. The inspector also reviewed computer printouts for several plant departments and verified that the radiation dose recorded for 1982 appeared to be well within NRC limits. The licensee was maintaining the records of radiation exposure required by 10 CFR 20.401.

On October 19, the inspector observed whole body frisking performed by personnel who had exited the containment building and removed their protective clothing. Generally, personnel frisking was inadequate due to fast movement of the probe over the body. This practice is contrary to the slow, deliberate technique (less than two inches per second at less than one quarter inch probe to body distance) taught by Health Physics to trainees during general employee training. The inspector notified licensee management of his observations. Licensee management acknowledged the inspection observations and stated that National Nuclear Corporation Gamma 10 Portal Monitors had been installed at RCA exits and were used as a final check. A licensee representative presented the inspector with a plant performance evaluation of this solid scintillation detector. Although no point source tests were run, the monitor would alarm with a confidence of 100% with a Co^{60} contamination level of 4K dpm/scan (determined with a RM-14 and HP-210 probe) on a cloth cap. The inspector stated that health physics personnel stationed at the exit point for the controlled area should observe frisking techniques and correct poor practices, thus reinforcing the training each worker received.

On October 21, the inspector again observed frisking techniques at contamination control points. The inspector noted that whole body frisking practices had markedly improved. The inspector concluded that licensee management emphasis on proper frisking technique had resulted in the improvement during the inspection period and had no further questions.

No violations or deviations were identified.

12. Internal Exposure Control

The inspector selectively reviewed general in-plant air sample results and results of air samples taken to support work covered by specific radiation work permits (RWP). By review of records, observations and discussions with licensee representatives, the inspector evaluated the licensee respiratory

protection program, including engineering control, bioassays, MPC-hr controls and issue and use of respirators. The inspector reviewed the current performance of RWP #82-613, Remove/Reinstall Insulation on "A,B,C" Steam Generators, associated ALARA reviews, respiratory protection issue logs, survey data and test designs. The inspector also reviewed Operating Instruction, Scheduling of periodic SGRP Health Physics activities, which requires air samples to be drawn for initial system opening and/or as directed by the Health Physics Supervisor; every four hours in various locations on the 58 foot, 30 foot 6 inch and 14 foot elevations of the containment buildings and the recording of constant air monitors readings each shift.

No violations or deviations were identified.

13. Posting, Labeling and Control

The inspector reviewed the licensee's posting and control of radiation areas, high radiation areas, airborne radioactivity areas, contamination areas, and radioactive material areas, and the labeling of radioactive material during tours of the plant. The inspector toured the on-site storage areas for radioactive material. The inspector observed that a large volume of radioactive material is stored in a newly constructed warehouse and in numerous truck trailers located inside the radiation control area. The inspector expressed a concern to plant management regarding the ability of the trailers and warehouse to maintain their integrity on location within RCA during a hurricane. Plant Management stated that concrete holddowns available on site would be positioned near the trailers. The trailers would be secured to the concrete blocks with wire rope. The inspector observed that the entire concrete floor of the warehouse is equipped with tie-down pads to which radioactive material would be secured in the event of a hurricane. The inspector had no further questions.

No violations or deviations were identified.

14. Notification and Reports

The inspector reviewed the licensee's records to determine if exposure data had been provided to terminated employees as required by 10 CFR 19.13(d). The inspector selected several names of recently terminated employees and verified that each employee had been sent a letter regarding his exposure history.

No violations or deviations were identified.

15. Posting of Notices

10 CFR 19.11 requires, in part, that each licensee post current copies of 10 CFR 19 and 10 CFR 20 or if posting of the documents is not practicable, the licensee may post a notice which describes the document and states where

it may be examined. 10 CFR 19.11 further requires that copies of any Notice of Violation involving radiological working conditions be conspicuously posted within two working days after receipt of the documents from the Commission. The inspector observed the posting of notices required by 10 CFR 19.11.

No violations or deviations were identified.

16. Radiological Surveys

The inspectors selectively reviewed the records of radiation and contamination surveys performed in October, 1982 to support the Unit 4 steam generator replacement project and discussed the survey results with licensee representatives. The inspectors performed independent radiation and contamination surveys in the auxiliary building and in the outside part of the radiation controlled area. No problems were identified except as discussed in paragraph 17.

17. Pipe trench containing the Radioactive Effluent Discharge Line.

On October 21, the inspector removed a silt sample from the pipe trench containing the radioactive effluent discharge line. The trench runs from the auxiliary building inside the RCA and travels outside the RCA fence for approximately fifty yards. The sample was taken approximately twenty feet outside the RCA fence. Site analysis of the silt indicated low level radioactivity (67 picocuries per gram) principally Co^{60} . The inspector observed that the trench had approximately four inches in-depth of thermally hot water. Licensee Health Physics personnel were unsure of the source of contamination or where the trench drains to. Licensee representatives thought the contamination was probably the result of a gradual buildup over the operating life of the plant. Licensee management stated that they would investigate a means of removing the contaminated silt. They further committed to determining where the trench drains to and would provide this information to the inspector by October 29, 1982. The inspector stated that the results of the investigation and licensee actions would be reviewed during a subsequent inspection (82-31-02).

18. Radiation Work Permits

The inspectors reviewed active radiation work permits (RWP) for appropriateness of the radiation protection requirements based upon work scope, location and conditions. During tours of the plant, the inspectors observed the adherence of plant workers to the RWP requirements. Particular attention was given to the steam generator replacement project. IE Inspection Report 50-250/82-26 discussed in detail the licensee RWP system. As stated in that inspection report the licensee had revised plant procedure HP-1 to strengthen the RWP system, including establishing specific guidelines as to

when a specific RWP was required. During the current inspection a licensee representative stated that further changes to the RWP procedure were necessary to improve the system. These include providing detailed instruction as to when a specific or general RWP was required, what types of task can be performed under each type and a specific set of conditions which must be present before a health physics technician could change an RWP or set it aside in its entirety. The licensee representative stated that these changes to the procedure would be completed and the procedure submitted to the plant nuclear safety committee for review by December 1, 1982. The inspectors noted an improvement in the quality of the RWPs issued over the last 6-8 weeks. More Specific RWPs were prepared and of those specific RWPs prepared, more use was made of specific radiological survey data, and more detailed requirements. The inspector stated that the revised procedure and implementation of the revised RWP system would be reviewed during subsequent inspections (82-31-03).

19. Post TMI Action Items

a. Post accident sampling (II-B-3)

The licensee has installed an in-line monitoring system for the sampling and analysis of reactor coolant and the containment atmosphere from Unit 3 or 4 following an accident. This system will include the capability to perform in-line qualitative and quantitative radioactivity analysis of reactor coolant and containment atmosphere, quantify hydrogen levels in the containment atmosphere and quantify chloride levels in reactor coolant. A licensee representative stated that the system would be operated all the time, to eliminate the problems which may result from starting up a system that has been shut down for long periods. A licensee representative stated that the system is approximately 95% functional. The only part of the system which is not functional is the chloride analyzer, which is being repaired by the vendor. The inspector reviewed the actual installation of the in-line monitor and compared the installation with the system drawings. The system appears to be installed in accordance with the engineering drawings. The system has the capability of drawing a grab sample of the reactor coolant and containment atmosphere. The sample is drawn into a 10 ml sample bomb located in a shielded container. The shielded container can be easily removed from the post accident sampling room. The licensee has not determined who will analyze the grab sample. A licensee representative stated that he thought it would be sent to an off-site laboratory. A licensee representative stated that the fluid sections of the systems have been hydrostatically tested to ensure system integrity. The licensee representative also stated that the radioactivity analysis section of the in-line monitor was being used to collect and analyze samples and that comparisons with normal sampling and analysis methods were reasonably close. However, changes would be made to improve the agreement between the two methods.

During the walk-down of the system, the inspector noticed that most of the valves in the in-line monitor were solenoid-operated valves. Even acquiring the grab samples required that these valves function properly. Licensee representatives could not determine at the time of inspection whether or not the system received electrical power from a vital or non-vital bus. The inspector stated that the licensee should ensure that the post accident sampling system continues to be powered during a loss of off-site power (82-31-04).

A licensee representative stated that procedures for the operation of the systems have not been proposed, neither has training of the chemistry personnel been conducted. Both tasks should be started in the next several weeks.

The inspector stated that the post accident sampling system will be reviewed in more detail during subsequent inspections.

b. Training in Mitigating Core Damage (II-B-4)

The inspector reviewed the records of training in Mitigating Core Damage provided to the health physics staff in August and September, 1982. The inspector had no further questions.

20. Other Areas Inspected

The inspector discussed a 10 CFR 21 notification received by the Commission concerning a defect in a central processing unit in the micro computer based radiation monitoring system (SPING Series 3 and 4) which are in use at the plant. A licensee representative stated that the equipment manufacturer had notified the plant of the problem and had provided the plant with replacement parts, which had been installed. The inspector had no further questions.

The inspector discussed a problem at another facility where a spent resin line had become blocked during a resin transfer. Service air was being used to push the resin out of the storage tank to a snipping liner. Demineralized water was used to clear the transfer line. Plant personnel failed to close the valve on the service air line to the spent resin storage tank. The demineralized water pressure exceeded the service air pressure and the contaminated water and resin was forced into the service air system. The service air system was also used at the facility for breathing air. The inspector toured the plant radioactive waste facilities and discussed the potential for a similar event to occur at Turkey Point. A licensee representative stated that resin are sluiced from the storage tank to the liner rather than being blown with high pressure air. The inspector observed the installation of check valves to prevent back flow of contaminated resin or water into the demineralized water system. During a review of radiation dose records, the inspector noted that the plant personnel assigned to handle radioactive waste had some of the highest radiation doses. A

licensee representative stated that this was principally attributable to the loading of spent resin into shipping liners. He further stated that this was because an individual must get in close proximity of the liner to observe the filling operation in order to stop the filling to prevent overflow. The licensee also manually spreads the resin in the liner during the filling operation. A licensee representative stated that other methods for monitoring were being considered to reduce the exposures. The inspector stated that this area would be reviewed during subsequent inspections (82-31-05).