



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

JUN 04 1984

Report Nos.: 50-250/84-13 and 50-251/84-13

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

Docket Nos.: 50-250 and 50-251

License Nos.: DPR-31 and DPR-41

Facility Name: Turkey Point 3 and 4

Inspection at Turkey Point site near Homestead, Florida

Inspector: *G. R. Jenkins*
C. M. Hosey

6/1/84
Date Signed

Approved by: *G. R. Jenkins*
G. R. Jenkins, Section Chief
Emergency Preparedness and Radiological
Protection Branch
Division of Radiation Safety and Safeguards

6/1/84
Date Signed

SUMMARY

Inspection on April 23-27, 1984

Areas Inspected

This routine unannounced inspection involved 35 inspector-hours on site in the areas of radiation protection activities associated with the refueling outage, including organization and management, training and qualifications, external exposure control, internal exposure control, radiation work permits, posting and control of radiological areas, radiological surveys, ALARA activities, post accident sampling and followup on previous inspector identified items.

Results

No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

C. K. Baker, Plant Manager-Nuclear
*D. W. Haase, Operations Superintendent-Nuclear
*P. W. Hughes, Health Physics Supervisor
J. S. Wade, Jr., Chemistry Supervisor
*M. J. Crisler, Quality Control Supervisor
*W. Bladow, Supervisor, Quality Assurance Operations
*J. A. Labarraque, Technical Department Supervisor
*E. R. LaPierre, Radiochemist
J. Danek, Corporate Health Physicist
*J. Arias, Jr., Regulatory Compliance Engineer
*R. M. Brown, Health Physics Operations Supervisor
J. R. Bates, Health Physics ALARA Supervisor

Other licensee employees contacted included three engineers, five technicians, two operators, three mechanics, and three office personnel.

NRC Resident Inspectors

T. Peebles, Senior Resident Inspector
D. Brewer, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 27, 1984 with those persons indicated in paragraph 1 above.

A violation described in paragraph 6, failure to report radiation exposure data to the NRC, was discussed in detail. Since the violation was identified by the licensee, and met the criteria of 10 CFR 2, Appendix C, a Notice of Violation will not be issued. Several inspector followup items relating to the post accident sampling system were discussed in detail (paragraph 5).

The licensee acknowledged the inspection findings.

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Radiological Protection Activities During Extended Outage (83729)

a. Organization and Management Controls

Technical Specification 5.2.2 describes the licensee's organization. The inspector reviewed the licensee's organization as it relates to radiation protection and chemistry. The licensee has not made organizational changes which would significantly affect the ability to control radiation exposures, radioactive material or plant chemistry.

No violations or deviations were identified.

b. Training and Qualifications

Technical Specification 6.3.1 requires that each member of the facility staff meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions. Paragraph 4 of ANSI N18.1 states, in part, that supervisors not requiring a license shall have a minimum of four years experience in the craft or discipline he supervises.

The licensee has recently selected a new individual for the position of Radwaste Supervisor within the health physics organization. The inspector reviewed the experience of the new Radwaste Supervisor and had no questions.

No violations or deviations were identified.

c. External Exposure Control

10 CFR 20.101 specifies the applicable radiation dose standards. The inspector reviewed the computer printouts (NRC form 5 equivalent) for January 1984 through April 24, 1984 and verified that the radiation doses recorded for plant personnel were well within NRC limits. The inspector selectively reviewed the occupational exposure histories (complete NRC form 4) for individuals who exceeded the limits of 10 CFR 20.101(a). The exposure histories were being completed and maintained as required by 10 CFR 20.102.

The inspector reviewed the following plant procedures which establish the licensee's program for personnel monitoring of external dose in accordance with 10 CFR 20.202:

Operating Procedure 11500, Health Physics Manual, Rev 4

Operating Procedure 11550.2, Radiation Rules of Practice (August 11, 1983).

Operating Procedure 11550.30, Personnel Monitoring of External Dose (May 12, 1983).

During tours of the plant the inspector observed workers wearing the appropriate personnel monitoring devices. The inspector discussed with license representatives the personnel monitoring which will be used during the upcoming steam generator work.

The inspector observed a licensee representative perform the inventory of several emergency equipment lockers and noted that the personnel monitoring equipment dedicated for emergency use met the regulatory requirements, were operable, maintained and readily available for use.

No violations or deviations were identified.

d. Internal Exposure Control

10 CFR 20.103(a) establishes the limits for exposure of individuals to concentrations of radioactive materials in air in restricted areas. This section also requires that suitable measurements of concentrations of radioactive materials in air be performed to select and evaluate the airborne radioactivity in restricted areas and that appropriate bioassays be performed to detect and assess individual intakes of radioactivity.

The inspector selectively reviewed the results of general in-plant air samples taken during the months of March and April, 1984 and the results of air samples taken to support work covered by specific radiation work permits issued to support the outage.

10 CFR 20.103(b) requires that when it is impracticable to apply process or engineering controls to limit concentrations of radioactive material in air below 25% of the concentrations specified in Appendix B Table I, column 1 of this part other precautionary measures should be used to maintain the intake of radioactive material by any individual within seven consecutive days as far below 40 MPC-hours as is reasonably achievable. By review of records, observations and discussions with licensee representatives, the inspector evaluated the licensee's respiratory protection program, including engineering controls, MPC-hr controls, and the issue, use, and storage of respirators.

The inspector also reviewed the following plant procedures:

Operating Procedure 11550.60, Respiratory Protection Manual (June 3, 1982)

Operating Procedure 11550.65, Maintenance, Accountability, Cleaning, Inspection, Repair and Storage of Respiratory Protection Equipment (August 11, 1983).

Operating Procedure 11550.66, Detection, Use, Issue, Control and MPC-hour accountability of Respiratory Protection Equipment (June 2, 1983).

No violations or deviations were identified.

e. Radiation Work Permits

The inspector reviewed Operating Procedure 11550.1, Radiation Work Permits, (Nov. 17, 1983), which provides detailed instructions on the preparation and processing of Radiation Work Permits (RWP).

The inspector selectively reviewed active radiation work permits (RWP) for appropriateness of the radiation protection requirements based on work scope, location and conditions. During a tour of the plant, the inspector observed the adherence of plant workers to the RWP requirements and discussed the RWP requirements with plant workers at the job site.

No violations or deviations were identified.

f. Posting and Control of Radiological Areas

10 CFR 20.203 specifies the posting, labeling and control requirements for radiation areas, high radiation areas, airborne radioactivity areas and radioactive material. Additional requirements for control of high radiation areas are contained in Technical Specification 6.12. Operating Procedure 11500, Health Physics Manual, and Operating Procedure 11550.2 contain additional information on the posting and control of radiological areas.

During tours of the plant, the inspector reviewed the licensee's posting and control of radiation areas, high radiation areas, airborne radioactivity areas, contamination areas, radioactive material areas and the labeling of radioactive material.

No violations or deviations were identified.

g. Radiological Surveys

10 CFR 20.201(b) requires each licensee to make or cause to be made such surveys as (1) may be necessary for the licensee to comply with the regulations in this part and (2) are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present. The inspector reviewed the following procedures that relate to the licensee's survey program:

Operating Procedure 11550.20, Radioactive Surveys (Nov. 23, 1983)

Operating Procedure 11550.22, Airborne Contamination Surveys (Sept. 22, 1983)

Operating Procedure 11550.45, Release of Material from the Radiation Control Area.

The inspector selectively reviewed the records of radiation, contamination and airborne radioactivity surveys performed in March and April 1984 and discussed the survey results with licensee representatives. The inspector performed independent radiation and loose surface contamination surveys in the auxiliary building and in the restricted area outside the auxiliary building and verified that the areas were properly posted.

The inspector also discussed with the licensee the method used to release material from the restricted area and observed technicians performing release surveys for material. The inspector also observed personnel using the personnel frisker (RM-14/RM-16 with HP-210 pancake probe) to perform contamination surveys of themselves prior to exiting the controlled area.

No violations or deviations were identified.

h. ALARA Program

10 CFR 20.1c states that persons engaged in activities under licenses issued by the NRC should make every reasonable effort to maintain radiation exposure as low as reasonably achievable (ALARA). The recommended elements of an ALARA program are contained in Regulatory Guide 8.8, Information Relevant to Ensuring that Occupational Radiation Exposure at Nuclear Power Stations will be ALARA, and Regulatory Guide 8.10, Operating Philosophy for Maintaining Occupational Radiation Exposures ALARA.

The inspector reviewed Operating Procedure 11550.6, ALARA PROGRAM: Concepts, Responsibilities and ALARA Review Board, and discussed the administrative aspects of the program with licensee representatives. The inspector reviewed the ALARA evaluations for several major jobs performed during the current outage.

The inspector reviewed the 1983 summary of occupational exposure. The total exposure received in 1983 was approximately 3300 person-rem with approximately one-half received during the Unit 3 refueling outage in the 4th calendar quarter and 654 person-rem for the Unit 4 steam generator replacement work. Approximately two-thirds of the total exposure received in 1983 was the result of special maintenance (hanger repairs, SGRP, ICCS modifications). The exposure in 1983 was approximately 19% higher than 1982. The licensee estimates that approximately 1400 person-rem will be received in 1984. The inspector noted during the review that the highest dose received by any worker for calendar year 1983 was 4.880 rem. As of April 22, 1984, the actual exposure received for 1984 was approximately 65% of the estimated exposure.

No violations or deviations were identified.

5. Post Accident Sampling (TMI Action Item II.B.3) (25544)

NUREG 0737, Item II.B.3 specified that all licensee's perform a review of reactor coolant and containment atmosphere sampling systems to determine the capability of personnel to promptly obtain a sample under accident conditions without incurring a radiation exposure to any individual in excess of the limits. If the review indicated that personnel could not promptly and safely obtain the sample, additional design features or shielding should be provided to meet the criteria.

The licensee's post accident sampling system was also discussed in Region II Inspection Reports 50-250/82-31 and 50-250/83-31. At the time of the inspection reported in Inspection Report 50-250/83-31 the licensee had not declared the system to be fully operational. At that time, the oxygen and chloride analyzers were inoperable.

The inspector reviewed the Test Procedure for performing the functional acceptance test of the post accident sampling system (PASS) and discussed the test with licensee representatives. This procedure had been reviewed and approved in accordance with plant procedures. During the review, the inspector noted that a containment atmosphere sample was not collected from Unit 3 or 4 for analysis by the PASS. A licensee representative stated that the licensee could not open the containment isolation valve for the system and collect a sample without violating Technical Specification 3.3. The inspector stated that the licensee should verify that a sample can actually be drawn from each of the containments. Licensee management stated that since both units would be down on April 26, 1984, the licensee would verify that with the system aligned in accordance with the Operating Procedure a sample could be drawn from each of the units.

The inspector reviewed the calibration data for the hydrogen analyzer, pH meter and the oxygen analyzer.

The inspector reviewed the Nuclear Chemistry procedure NC-23A, Operation of the Post Accident Sampling System (PASS) for Reactor Coolant (RCS) (March 27, 1984) and a request for procedure change to correct discrepancies identified in the procedure during the functional test.

Plant procedures have not been prepared which specify the requirements for periodic surveillance testing, calibration methods, frequency of calibration and surveillance testing. The inspector stated that will be carried as an inspector followup item and the procedures reviewed during a subsequent inspection (250, 251/84-13-01).

During the inspection, the system was operated by a chemistry technician selected by the inspector. A Unit 3 reactor coolant sample was collected from the hot leg sample point. The samples were subjected to all the tests that would normally be run by the system.

The results indicate that for reactor coolant, the licensee met the acceptance criteria for direct measurement of pH, oxygen, chlorides and boron, as well as for gamma isotopic measurements. The reactor coolant hydrogen did not meet the acceptance criteria (± 5 CC/kg). At the close of the inspection the licensee had not determined why the hydrogen analysis failed to meet the acceptance criteria. The inspector stated this would be carried as an inspector identified item and that the evaluation and corrective measures would be reviewed during a subsequent inspection (250, 251/84-13-02).

Development of a formal training/retraining program for plant personnel who will operate the post accident sampling system was discussed in Inspection Reports 50-250/83-31 and 50-250/84-08.

The inspector reviewed the special shielding installed to ensure vital area access in the vicinity of the PASS system.

Based on the review, which included operating procedures, functional test, instrumentation calibration and direct observation of sample collection and analysis by the inspector, it appeared that the licensee had the capability to obtain a reactor coolant liquid sample and perform the required analysis within the time limits specified. However, the licensee's capability to obtain and analyze a containment atmosphere sample with the plants operating was not verified during this inspection.

6. Licensee Identified Item (83724)

10 CFR 20.408(b) requires that when an individual terminates employment with a licensee, or an individual assigned to work in a licensee's facility but not employed by the licensee completes the work assignment, the licensee furnish the NRC a report of the individual's exposure to radiation and radioactive material incurred during the period of employment or work assignment, containing information recorded by the licensee pursuant to 20.401(a) and 20.108. 20.409 requires that the licensee send a report to the individual if the report is sent to the NRC in accordance with 20.408. 20.401(a) requires each licensee to maintain records showing the radiation exposure of all individuals for whom personnel monitoring is required under 20.202 of the regulations in this part. Such records shall be kept on Form NRC-5 or equivalent.

During a review of the termination letters sent to the NRC in 1984 the inspector noted that the licensee did not report radiation exposure to the skin of the whole body or to the extremities. In discussion with the licensee, the inspector ascertained that the omission of the skin and extremity exposure on termination letters was identified during an annual review of the plant's health physics program performed by the corporate office health physics staff. The licensee was in the process of making corrections to the letters to be sent in May 1984. During the review of the problem it was determined that the omission of the additional information began about the time the issuance of the reports was transferred to the plant from the corporate office, and can be directly linked to a change in

computer hardware and software. The licensee agreed to review the previously submitted reports for inclusion of the required data and to submit corrected reports, if appropriate.

The inspector stated that failure to include radiation exposure to the skin and extremities on the termination letters sent to the NRC was a violation of 10 CFR 20.408. However, since the violation was identified by the licensee, is a severity level IV or V violation, was promptly corrected and was not a violation that could reasonably be expected to have been prevented by the licensee's corrective actions for a previous violation, no enforcement action will be taken in accordance with Appendix C to 10 CFR 2.

7. Followup on Previous Inspector Identified Items (92701)
- a. (Closed) IFI (83-31-04), Establish method for analysis of grab samples taken from RCS and containment atmosphere after an accident. The licensee has made formal arrangements with Oak Ridge National Laboratory to analyze post accident samples. In addition, several utilities and Chem-Nuclear Systems, Inc. have agreed to provide additional shipping casks within one day to ensure casks are available for shipment of samples for analysis at the frequency specified by NUREG 0737, Item II.B.3. The inspector had no further questions.
 - b. (Closed) IFI (83-31-07) Review Vendor calibration of Containment High Range Radiation Monitor (Range $10^{-1}E+8$ R/HR). The inspector reviewed General Atomic Report E-255-978 (Rev 1) dated May 1981 entitled "Energy Response Test and Dose Rate Calibration of Model RD-23 High Range Radiation Monitor Detector." This report documented the vendor's type-test which demonstrated linearity of the monitor through all scales and verified the monitor's design characteristics. The inspector had no further questions.
 - c. (Closed) IFI (83-37-02) Frisking Practices. This item concerned the use of improper frisking techniques by workers when they exited the undress area outside Unit 3 containment. During this inspection, the inspector observed workers frisking prior to exiting unit 4 containment and the RCA. Most workers were using good techniques. Those that were not, were being corrected by the health physics technicians assigned to the control points. The inspector had no further questions.
 - d. (Closed) IFI (84-08-02) Results of Fe-55 analysis. This item pertains to the laboratory analysis of samples removed from various waste streams to validate the scaling factors used. The inspector reviewed the results of the Fe-55 analysis and had no further questions.