UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

JAN 2 3 1985

Report Nos.: 50-250/84-40 and 50-251/84-41

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 Conducted: December 17-21, 1984

Inspectors: G. R. Jenkins 1/17/85
for R. H. Albright Date Signed

G. R. Jenkins 1/17/85
for W. T. Cooper Date Signed

Approved by: G. R. Jenkins 1/17/85
G. R. Jenkins, Section Chief Date Signed
Division of Radiation Safety and Safeguards

SUMMARY

Scope: This routine, unannounced inspection involved 78 inspector-hours on site in the areas of external exposure control and personal dosimetry, internal exposure control, surveys, monitoring and control of radioactive material, the ALARA program, inspector followup items and IE Information Notices.

Results: One violation was identified: failure to perform a daily energy calibration for the GeLi spectrometer prior to use.

REPORT DETAILS

1. Licensee Employees Contacted

*K. N. Harris, Vice President
*C. J. Baker, Plant Manager, Nuclear
*J. Arias, Jr., Regulatory and Compliance Supervisor
*D. W. Haase, Chairman, SEG
*J. E. Price, SEG
*L. W. Bladow, QA Operations Supervisor
*V. A. Kaminskas, Reactor Supervisor
*E. R. LaPierre, Radiochemist
*J. A. Labarraque, Technical Department Supervisor
*D. C. Bradford, Representing the Service Manager
*F. A. Houtz, CASR Coordinator
*R. A. Longtemps, Mechanical Maintenance Supervisor
*P. W. Hughes, Health Physics Supervisor
*J. W. Kappes, Maintenance Superintendent
*B. A. Abrishami, System Performance Supervisor
*R. M. Brown, Health Physics Operations Supervisor
*W. C. Miller, Training Supervisor
*M. J. Crisler, Quality Control Supervisor
*W. R. Williams, Assistant Superintendent, Electrical Maintenance
*E. F. Hayes, I&C Supervisor
*J. L. Danek, Corporate Health Physics
*J. R. Bates, Jr., Health Physics ALARA Coordinator

Other licensee employees contacted included technicians and office personnel.

NRC Resident Inspector

*R. Brewer, Resident Inspector

* Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on December 21, 1984, with those persons indicated in paragraph 1 above. The violation of Technical Specification 6.8.1 for failure to follow procedures when the GeLi analyzer was used for air sample analysis without the required daily energy calibration was discussed with plant management who acknowledged the violation.

3. Licensee Action on Previous Enforcement Matters

(Closed) Violation (83-37-03) - This violation concerned an unauthorized reactor vessel sump entry. The licensee response dated March 5, 1984, was reviewed. The corrective actions and commitments described in the response were inspected and verified as complete.

4. External Exposure Control and Personal Dosimetry (83724)

10 CFR 20.101 specifies the applicable radiation dose standards. The inspector reviewed the computer printouts (NRC Form 5 equivalent) for the period January - October 1984 and verified that the radiation doses recorded for plant personnel were well within the quarterly limits of 20.101.

10 CFR 20.101(b)(3) requires the licensee to determine an individual's accumulated occupational dose to the whole body on an NRC Form 4 or equivalent record prior to permitting the individual to exceed the limits of 20.101(a). The inspector reviewed selected occupational exposure histories for individuals who exceeded the values in 10 CFR 20.101(a). The exposure histories were being completed and maintained as required by 10 CFR 20.102.

10 CFR 20.202 requires each licensee to supply appropriate personnel monitoring equipment to specific individuals and require the use of such equipment.

During tours of the plant, the inspector observed workers wearing appropriate personnel monitoring devices.

Technical Specification 6.8.1 requires the licensee to have written radiation protection procedures, including the use of radiation work permits. The inspector reviewed plant procedure HP-1, Radiation Work Permit, which provided detailed instructions on the preparation and processing of Radiation Work Permits (RWPs).

The inspector reviewed selected active RWPs for appropriateness of the radiation protection requirements based on work scope, location, and conditions.

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 shall 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. 10 CFR 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. 10 CFR 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. Such records shall be kept on NRC Form 5 or equivalent.

The inspector discussed the reporting requirements with licensee representatives and reviewed selected individual exposure records maintained by the licensee and copies of exposure reports sent to the NRC and to individuals during the period November - December 15, 1984.

10 CFR 20.402, 20.403 and 20.405 establish reporting requirements in the event of the loss or theft of licensed material, personnel overexposures, excessive concentrations and radiation levels.

The inspector discussed the reporting requirements of 10 CFR 20.402, 20.403 and 20.405 with licensee representatives and determined that the licensee had not had an event during 1984 which required reporting in accordance with these sections of 10 CFR 20.

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.

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.

5. Internal Exposure Control (83725)

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 detect and evaluate the airborne radioactivity in restricted areas and that appropriate bioassays be performed to detect and assess individual intakes of radioactivity.

The inspector reviewed selected results of general in-plant air samples taken during the period October - November 1984 and the results of air samples taken to support work authorized by specific radiation work permits.

The inspector reviewed selected results of bioassays (whole body counts/ urinalyses) and the licensee's assessment of individual intakes of radioactive material performed during the period October - November 1984.

10 CFR 20.103(b) requires the licensee to use process or other engineering controls, to the extent practicable, to limit concentrations of radioactive material in air to levels below that specified in Part 20, Appendix B, Table I, Column 1 or limit concentrations, when averaged over the number of hours in any week during which individuals are in the area, to less than 25 percent of the specified concentrations.

The use of process and engineering controls to limit airborne radioactivity concentrations in the plant was discussed with licensee representatives.

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 1, Column 1,

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 training, medical qualifications, fit-testing, MPC-hour controls, quality of breathing air, and the issue and use of respirators.

The inspector reviewed the following plant procedures which established the licensee's internal exposure control and assessment program and verified that the procedures were consistent with regulations, Technical Specifications and good health physics practices:

Operating Procedures, Number 11500 - Health Physics Manual
11550.1 - Radiation Work Permit
11550.22 - Airborne Contamination Surveys
11550.33 - Operation of Whole-Body Counter
11550.34 - Matrix Calibration of the Whole-Body Counter
O-HPA-031 - Personnel Monitoring of Internal Dose
11550.81 - Health Physics Training.

A review and discussion with licensee representatives of the body burden analysis program indicated that the program was not established to ensure that body burden analyses are reviewed to determine if personnel have exceeded 40 MPC-hours in a seven day period. The inspector determined that there were investigation points which would cause internal dose evaluations. However, at the established investigation points an MPC-hour calculation was not required by the licensee program. The inspector reviewed selected body burden analyses for the period October - December 15, 1984, and found no indications that personnel had been exposed to greater than 40 MPC-hours in a seven day period. The calculation of MPC-hours for individuals who have body burdens which could be the result of greater than 40 MPC-hours in a seven day period is required so that the required investigation and corrective action can be identified and documented. Licensee management acknowledged the need for the program to be changed. This will be evaluated in the corporate office and the program should be established by March 31, 1984. The inspector stated that this is an inspector followup item and will be reviewed during the next inspection (250/84-40-01, 251/84-41-01).

6. Surveys, Monitoring, and Control of Radioactive Material (83726)

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 and (2) are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present.

The inspector reviewed the following plant procedures which established the licensee's radiological survey and monitoring program and verified that the procedures were consistent with regulations, Technical Specifications and good health physics practices:

Operating Procedures, Number 11550 - Health Physics Manual
11550.4 - Scheduling of Periodic Health Physics Activities
O-HPT-010 - Calibration and Operation of HP Lab Counting Equipment
11550.18 - Calibration of Survey Instruments
11550.20 - Radiation Surveys
11550.21 - Surface Contamination Surveys
11550.22 - Airborne Contamination Surveys
11550.82 - Steam Generator Entry Exposure Controls.

The inspector reviewed selected records of radiation and contamination surveys performed during the period of October - December 15, 1984 and discussed the survey results with licensee representatives.

The inspector performed independent radiation surveys in the auxiliary building and in the restricted area outside the auxiliary building and verified that the areas were properly posted.

The inspector 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.

The inspector reviewed procedure HP-18, Calibration of Survey Instruments, and discussed the program with licensee personnel. 1984 calibration records for selected instruments were reviewed. The Teletector and neutron rem-ball are calibrated offsite by a vendor. A licensee representative stated that prior to placing these instruments in service an acceptance test is run on the instruments. The acceptance tests ensure that the instruments were not damaged during shipment after being calibrated. The vendor calibrates the Teletector up to 149 R/hr on the 1000 R/hr scale. The licensee representative stated that the acceptance test for the Teletector 1000 R/hr scale is performed at 480 R/hr. The acceptance test performed by the licensee is higher than the vendor calibration point and the inspector stated that the calibration check at 480 R/hr should be documented to show that the 1000 R/hr range is still linear near the midpoint of this range. The licensee representative who performs the acceptance check on these instruments stated that during October 1984 it was determined that the acceptance tests should be documented; however, this is not a procedural requirement. The inspector stated that the acceptance test criteria and the documentation of the acceptance test should be included in a procedure. The Health Physics Supervisor agreed and stated that the instrument acceptance test procedure should be completed by March 31, 1985. This is an inspector followup item (250/84-40-02, 251/84-41-02).

Technical Specification 6.8.1 requires that written procedures shall be established, implemented and maintained. Health Physics Operating Procedure 11550.12, Operation of the ND 6650 GeLi Spectrometer requires a daily detector energy calibration to be performed. On October 13 and 14, 1984, a detector energy calibration was not performed and the instrument was used to analyze six iodine samples collected in Unit 4 containment. The GeLi Spectrometer in question had been labeled as out of service on October 13 and 14. Procedures require that when the instrument is labeled as out of

service, samples are to be transported to the chemistry section for analysis using their detector. Through technician error, the Health Physics GeLi Spectrometer was operated without the proper energy calibration being performed. This failure to adhere to procedures is a violation of Technical Specification 6.8.1. (250-84-40-03, 251/84-40-03)

In regard to the above violation, the inspector stated that there was no method currently in place to identify the individual who operated the GeLi Spectrometer. Five individuals are currently qualified through Technical Specification 6.3.1 and ANSI 18.1 to operate the equipment. Licensee representatives stated that the software currently in use with the GeLi Spectrometer would be modified to provide an area for the operator signature, initials, or other form of identification to insure that only qualified individuals are operating this equipment.

7. ALARA Program (83728)

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 discussed the ALARA goals and objectives for the current year with licensee representatives and reviewed the man-rem estimates and results for the current year.

As of December 17, 1984, the actual collective exposure for calendar year 1984 was 1424 man-rem which represented 99 percent of the estimated exposure for the year.

The inspector reviewed the ALARA evaluation for several major jobs performed during the periods of October - December 15, 1984.

The inspector discussed with licensee personnel their involvement in outage planning and reviewing accumulated exposure for work in progress.

No violations or deviations were identified.

9. IE Information Notices

The inspector reviewed and discussed with licensee personnel IE Information Notice 84-75: Calibration Problems - Eberline Instrument Model 6112B Analog Detectors.

The inspector determined an appropriate evaluation of the IE Information Notice had been made. The inspector had no further questions.

10. Inspector Follow-up Items

a. (Closed) Inspector Followup Item (IFI) (84-08-04) - This item concerned the need to formalize training requirements for personnel who would operate the Post Accident Sampling System (PASS) Procedure number NC-120 was revised to assure chemistry technicians are trained in the operation of PASS and are requalified on system operation semi-annually. NC-120 also requires that new chemistry technicians will receive PASS training within nine weeks of their entry on duty.

b. (Closed) IFI (84-13-01) - This item concerned the need for a procedure that would define periodic surveillance requirements for the PASS. Nuclear Chemistry Procedure number 23A has been implemented which specifies that periodic surveillance of the PASS, calibration methods and frequency of calibrations and testing should be performed quarterly.