



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

JUN 08 1984

Report Nos.: 50-335/84-18 and 50-389/84-19

Licensee: Florida Power and Light Company
 9250 West Flagler Street
 Miami, FL 33102

Docket Nos.: 50-335 and 50-389

License Nos.: DPR-67 and NPF-16

Facility Name: St. Lucie 1 and 2

Inspection Dates: May 14-18, 1984

Inspection at St. Lucie site near Ft. Pierce, Florida

Inspector: John R. Wray
 J. R. Wray

6/7/84
 Date Signed

Approved by: G. R. Jenkins
 G. R. Jenkins, Section Chief
 Division of Radiation Safety and Safeguards

6/7/84
 Date Signed

SUMMARY

Areas Inspected

This routine unannounced inspection involved 34 inspector-hours on site in the areas of internal exposure controls, external exposure controls, solid radwaste, transportation, contamination high-range radiation monitors and action on previous inspector identified items.

Results

Violation - Failure to certify proper vendor calibration of containment High-Range Radiation Monitors as required by Technical Specifications prior to initial use (Unit 2).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*C. M. Wethy, Plant Manager
*H. F. Buchanan, Health Physics Supervisor
*J. J. Walls, Quality Control
*W. F. McGavic, Quality Assurance
*H. M. Mercer, Health Physics
R. M. McCullers, Health Physics
L. L. Large, Health Physics
L. R. Baker, Health Physics

NRC Resident Inspector

*C. D. Feierabend, Senior Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on May 18, 1984, with those persons indicated in paragraph 1 above. The violation, failure to certify proper calibration of the Unit 2 Containment High-Range Radiation Monitors prior to initial use, was discussed. The licensee acknowledged the inspection findings and took no exceptions.

3. Licensee Action on Previous Inspection Findings

(Closed) Deviation 335/82-33-02, Inadequate response to BU-80-10/Failure to comply with FSAR. This item was inspected in IE report number 335/83-12. During this inspection the inspector reviewed contamination and radiation surveys of the sewage waste treatment system following final disposal of its radioactive contents. Sample results of the disposed wastes were examined. This item is closed based on acceptable results from these reviews.

4. Internal Exposure Control (83725)

10 CFR 20.103(a) establishes the limits of 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 are performed to detect and assess individual intakes of radioactivity.

The inspector selectively reviewed MPC-hour logs, personnel records, body burden analyses, and urinalysis results for calendar year 1984. The inspector also selectively reviewed the 1983 body burden analyses (over 14,000 analyses were taken during the thermal shield/core barrel repair project).

The following plant procedures were reviewed for consistency with regulatory requirements and good health physics practices:

HP-35 Rev. 4	Bioassay Program
HP-36	MPC-hour Estimation from In Vivo Bioassay Data

No violations or deviations were identified. No regulatory limits or procedural action levels were exceeded.

10 CFR 20.103(b) requires each licensee to use process controls or other engineering controls to limit internal exposures.

The inspector reviewed the licensee's work in engineering control of airborne radioactivity areas. The licensee has manufactured a ventilation hood so that bags of trash can be opened and compacted without respiratory protection. Extensive decontamination inside the Unit 1 containment has reduced contamination levels such that steam generator snubber work was performed without respirators. Strippable paint was used on the Unit 1 reactor head so that tensioning of the studs was performed without respiratory protection. A water tank was built so that reactor coolant pump seal work can be performed underwater, thereby removing the necessity for respiratory protection, reducing personnel exposures and eliminating liquid radwaste effluents. No violations or deviations were identified.

The inspector reviewed the following radiation work permits for completeness in internal exposure administrative controls:

84-1560	General Cleanup of Containment
84-1473	Hydrolazing upper and lower containment
84-2102	Beta study in RCB and Battelle neutron study

No violations of regulatory requirements were identified.

5. External Exposure Control (83724)

10 CFR 20.101 specifies the radiation dose standards applicable to each licensee's facility. The inspector reviewed the computer printouts (NRC Form 5 equivalent) for calendar year 1984 and verified that the radiation doses recorded for plant personnel were well within NRC limits. 10 CFR 20.102 requires that each licensee obtain a certification on a NRC Form 4 or equivalent, signed by the individual showing each period of time after the age of 18 in which the individual received an occupational dose of radiation prior to permitting, pursuant to 20.101(b), any individual in a restricted area to receive an occupational radiation dose in excess of the standards specified in 20.101(a). 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.

10 CFR 20.202 requires that the licensee provide personnel monitoring equipment to, and require the use of, such equipment by each individual who enters a restricted area and receives or is likely to receive a dose in any calendar quarter in excess of 25% of the applicable value in 20.101(a), who

is under the age of 18 and receives or is likely to receive a dose in excess of 50% of the standard in 20.101(a), and each individual who enters a high radiation area.

During tours of the plant, the inspector observed workers wearing the appropriate personnel monitoring devices. The inspector was informed that no one under 18 years of age is permitted in the plant.

On May 16, 1984, the inspector accompanied licensee representatives and their contractor into the unit 1 containment at 25% power and observed the proper wearing of TLD/Albedo dosimeters for neutron exposure records.

10 CFR 20.405 describes the report to be submitted to the NRC in the case of an overexposure. 10 CFR 20.407 requires each licensee to submit an annual personnel monitoring report. 10 CFR 20.408 describes individual termination reports. 10 CFR 20.409 requires that reports submitted to the NRC pursuant to 10 CFR 20.405 and 10 CFR 20.408 be forwarded to the individual. Technical Specification 6.9.1.5 requires the licensee to submit an annual man-rem report.

The inspector reviewed the annual reports submitted for 1983 pursuant to the regulations and Technical Specifications. The inspector also selectively reviewed personnel termination reports. No violations or deviations were identified.

The inspector noted that one termination letter contained a calculated whole body equivalent exposure based on an internal exposure (through a puncture wound-Region II daily report March 14, 1984) in compliance with internal exposure reporting requirement of 10 CFR 20.409 and 10 CFR 19.13. The inspector had no further questions or comments.

6. Containment High-Range Radiation Monitors (25564, 92701, 92706)

Following the accident at Three Mile Island, the NRC required all licensees to upgrade their accident radiation monitoring in containment. Specifications for high range containment monitors were first presented in NUREG 0578, Item 2.1.8 (Table 2.1.8.b.3) and further clarified in NUREG 0737, Item II.F.1, Attachment 3 (Table II.F.1-3). In March 1983, each operating facility was issued a Confirmatory Order establishing the status and/or the completion dates for each NUREG 0737 action item. New facilities were required to meet each NUREG 0737 item prior to issuance of an operating license. If an action item could not be completed before a license was issued, the action item completion status was made a condition of the license.

The licensee purchased high range containment radiation monitors shortly after NUREG 0578 was published, satisfying the requirements of that document. However, these monitors did not meet all the requirements of NUREG 0737 Item II.F.1, Attachment 3, (Table II.F.1-3) in that the vendor did not calibrate each detector on at least one point per decade of range between 1 R/hr and 10^3 R/hr. The vendor did conduct a one point source calibration over this range and performed an electronic calibration over the entire range of the instrument (up to 10^7 R/hr).

On March 14, 1983, unit 1 was issued an order confirming that all the requirements of NUREG 0737, Item II.F.1, Attachment 3, had been completed. During Region II inspection 335/84-05, the licensee was asked to provide certification of the required three point vendor calibration. Based on this request, the licensee investigated the issue and determined that the installed monitors in Units 1 and 2 had not been source calibrated in accordance with the requirements. During this inspection, the inspector verified that the licensee has since procured replacement detectors, properly calibrated for each unit, and has installed the new detectors in Unit 1 containment. Because Unit 1 has been in an extensive maintenance outage since before March 14, 1983, and therefore has not operated under the order with improperly vendor calibrated containment high-range radiation monitors, no enforcement action will be taken against that license. This review closes inspector followup item 335/84-05-02.

Unit 2 Technical Specification Table 3.3-6 states that the Containment High-Range Radiation Monitors must be installed and operable prior to exceeding 5 percent of rated thermal power. Section 22 of SER, Supplement 3, (NUREG 0843), for St. Lucie Unit 2, provided relief from the requirement to have this item properly installed and operable prior to fuel load and established the 5 percent deadline. Because the licensee had not certified, prior to initial use, proper calibration of each detector in Unit 2 containment for at least one point per decade of range between 1 R/hr and 10^3 R/hr, and, in fact, purchased and installed two containment high range radiation monitors in fulfillment of the NRC position in NUREG 0737, Item II.F.1(c), which were calibrated at only one point in this range, the inspector stated that the licensee is in violation of Unit 2 Technical Specification (389/84-19-01).

7. Solid Radwaste (84722)

The inspector reviewed the licensee's program for processing, control, and storage of radwaste. The inspector was informed that approximately 100,000 cubic feet of contaminated material and equipment remains onsite following the thermal shield/core barrel repair project. A licensee representative stated that a task force has been formed to eliminate this volume of waste by September 1984. The inspector reviewed the plan which includes burial of non-compactables in sea cargo containers and decontaminating reusable equipment. The inspector reviewed shipments of compactable trash and was informed that the last resin shipment was made from the repair project during this inspection. No violations or deviations were identified.

8. Transportation (86721)

On February 23, 1984, the licensee received a radioactive material shipment from Chem-Nuclear Systems, Inc. comprised of an empty Chem-Nuclear 3-55, Serial No. 2, radioactive waste shipping cask. Removable contamination up to 22,000 disintegration per minute per 100 square centimeters was discovered on the initial survey and up to 41,460 disintegrations per minute per 100 square centimeters was subsequently found. Region II and the carrier were notified immediately pursuant to 10 CFR 20.205(b)(2). The States of Florida and South Carolina were also notified and Region II submitted a Morning Report on this event on February 24, 1984. During this

inspection, licensee response and reporting of this event were examined. The inspector determined that the licensee's actions were thorough and timely and met regulatory requirements. No violations or deviations were noted.

9. Licensee Audits and Appraisals (83723, 83724, 83725, 83726, 83728)

The inspector discussed the audit and surveillance program related to radiation protection, radioactive waste management and transportation with licensee representatives. The inspector reviewed the following Quality Control audits performed within the past year.

QC-10078	HP Documentation
QC-10083	Procedural compliance (locked high rad areas, portable survey meters, frisking)
QC-10084	Procedural compliance (HP-32)
QC-14302	Procedural compliance (HP-40)
QC-12779	Calibration of instruments
QC-12762	Procedural compliance (HP-20)
QC-10088	Procedural compliance (HP-6; HP-41)

The inspector reviewed a "Corporate Appraisal of the Health Physics Program" conducted by the health physics group from the licensee's general office dated April 23, 1984. The appraisal showed no significant problems. The inspector had no further questions.

10. Licensee Action on Previous Inspector Identified Items (92701B)

(Closed) (335/83-12-01) PASS training. During the inspection the inspector verified that an adequate number of personnel from the Chemistry Department had been retrained on the modified Unit-1 Post-Accident Sampling System prior to restart. The inspector had no further questions.

(Closed) (335/84-05-01) Pocket dosimeter acceptance test. The inspector verified that procedure HP-32, "Source and Drift Check Pocket Dosimetry," was revised to set the acceptable drift error to plus or minus 12% (rather than 16%). The change was approved by the Facility Review Group on April 23, 1984. The inspector had no further comments.

(Closed) (335/84-05-02) Calibration of Containment High-Range Radiation Monitors. See paragraph 6.