



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

December 10, 1982

Report No. 50-389/82-70

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

Facility Name: St. Lucie 2

Docket No. 50-389

License No. CPPR-144

Inspection at St. Lucie 2 site near Ft. Pierce, Florida

Inspector: John R. Wray
J. R. Wray

12/10/82
Date Signed

Approved by: K. P. Barr

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

12/10/82
Date Signed

SUMMARY

Inspection on November 29 - December 3, 1982.

Areas Inspected

This routine, unannounced inspection involved 32 inspector-hours on site in the areas of process and effluent radiation monitors, valve actuating radiation monitors, spent resin transfer lines, gaseous radwaste system, plant tours, new fuel receipt, and licensee action on Bulletins, Circulars, Information Notices and inspector follow-up items.

Results

Of the seven areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *B. J. Escue, Site Manager (Unit 2)
- C. M. Wethy, Plant Manager
- *G. J. Boissy, Startup Superintendent
- *E. Priest, Engineering
- H. F. Buchanan, Health Physics Supervisor
- R. Frechette, Chemistry Supervisor
- R. Dawson, Mechanical Startup Supervisor
- *H. M. Mercer, Health Physics
- *B. W. Kelsey, Chemistry
- *L. L. Large, Health Physics
- *K. E. Beichel, Chemistry
- *R. A. Symes, Supervising QA Engineer
- *H. S. Ruff, Quality Control
- *E. Case, Quality Control
- *W. F. Jackson, Construction
- L. Cornman, Startup Engineer
- D. Walton, Startup Engineer

Other Organizations

- *R. W. Zaist, Project Superintendent, Ebasco
- *G. H. Krauss, Project Engineer, Ebasco
- *G. E. Grace, Licensing Engineer, Ebasco
- *J. C. Orłowski, Licensing, Combustion Engineering

NRC Resident Inspector

- *S. A. Elrod, Senior Resident Inspector
- *H. E. Bibb, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on December 3, 1982, with those persons indicated in paragraph 1 above. Licensee management acknowledged the inspector's comment on helium leak testing the waste gas system prior to startup and stated that they will evaluate the recommendation.

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Process and Effluent Radiation Monitors

FSAR Table 11.5-1 lists the process monitors to be installed through out the plant. The inspector toured the facility with a licensee representative to determine the status of the process monitor installation. Most monitors have not been tested at the time of this inspection and therefore have not been turned over to the startup group from construction. The following is the status of the process and effluent monitoring system at the time of the inspection:

	<u>Monitor</u>	<u>Status</u>
RS-26-5	Steam Generator Blowdown	Piped; no electrical
RS-26-6	Steam Generator Blowdown	Piped; no electrical
RS-26-18	Waste Gas Discharge	Piped; no electrical
RS-26-4	Waste Liquid Discharge	Installed; not tested
RS-26-11	Condensor Air Ejector	Installed; not tested
RS-26-12	Fuel Handling Bldg. Stack	Preoperational
RS-26-13	Plant Vent Stack	Piped; no electrical
RS-26-14	Plant Vent Stack	Piped; no electrical
RS-26-67	Laundry Room	Not on site; Backfit
RS-26-25	Containment Atmosphere	Piped; no electrical
RS-26-26	Containment Atmosphere	Piped; no electrical
RS-26-69	ECCS Area Exhaust A	Not piped; no electrical
RS-26-70	ECCS Area Exhaust B	Not piped; no electrical
RS-26-90	Plant Vent Stack (wide range)	Piped; no electrical
RS-26-71	Main Steam #1	In the warehouse
RS-26-72	Main Steam #2	In the warehouse
RS-26-1	A Component Cooling Water	Preoperational
RS-26-2	B Component Cooling Water	Preoperational
RS-26-3	CVCS Letdown	Piped; no electrical
RS-26-7	Boric Acid and Water Evap Condensate	Installed; no tested
RS-26-15	Mobile Unit 2	Not onsite; backfit
RS-26-16	Mobile Unit 1	Not onsite; backfit
RS-26-73	Main Steam Line Background	In the warehouse

The inspector informed a licensee representative that the installation status will be examined during subsequent inspections (82-70-01).

The inspector reviewed Unit 2 Chemistry Operating Procedures 2-C-62A through F, 2-C-66A and B, and 2-C-77 with regard to operation of the process and effluent radiation monitors. The procedures appeared adequate for their function.

While walking down sample lines to the process monitors, the inspector noted, that the lines to the CVCS letdown monitor located on the 45 foot elevation extended from the boronometer on the 19.5 foot elevation and ran unshielded through the floor and over the corridor on the 45 foot elevation

the monitor. This sample line (and return line) will contain reactor coolant and may be highly radioactive under certain conditions. The inspector stated that the sample line should be shielded or the monitor moved to a more appropriate location. A licensee representative stated that a change request has been initiated to shield the line. The inspector stated that this item will be examined during future inspections (82-70-02).

6. Valve Actuating Radiation Monitors

Section 11.5.2.2 of the FSAR describe the liquid and gaseous waste discharge monitors and the function they perform on a high radioactivity signal. The section states that one of the purposes of the monitors is to prevent radioactivity in excess of applicable limits from being released to the environment.

Figure 11.2-5 of the FSAR shows the configuration of the liquid waste discharge line, process monitor RS-26-4, and isolation valves FCV6627X and FCV6627Y. Figure 11.3-1 of the FSAR shows the configuration of the gaseous waste discharge line, process monitor RT-26-18, and isolation valve V6565.

The inspector reviewed the relative as-built locations of the monitors and the valves they control and noted that in both systems, the monitor is sampling the effluent downstream of the isolation valve. The inspector stated that the design will not prevent out-of-specification releases. Modifications must be made such that the effluent causing the process monitor to actuate the isolation valve is contained within the discharge piping and not released. In addition, measures must be provided to flush this out-of-specification effluent back to the discharge tank for resampling. Licensee management acknowledged the inspector's comments. This item will be examined during future inspections (82-70-03).

7. Spent Resin Transfer Lines

Figure 11.2-9 of the FSAR shows the resin transfer line from the Spent Resin Tank to an outside shipping container. Figures 11.2-2 and 11.2-5 of the FSAR show the resin transfer line from the Pre-concentrator and the Boric Acid Condensate Ion Exchangers to the Spent Resin Tank respectively. The inspector walked the transfer lines from the ion exchangers to the Spent Resin Tank (SRT) and from the SRT to the connection to be used for transfers to an outside shipping container. No obstruction which would be likely to cause impaction of the resin during resin transfer were observed. In addition, capability to flush these lines if some inadvertent plugging developed was observed. All lines appeared to be installed as designed. The inspector was informed that the Steam Generator Blowdown Processing System demineralizers were located with those for Unit 1. The Unit 1 Steam Generator Blowdown Processing system is located in a separate building inside the radiation controlled area. The inspector had no further questions.

During the inspection the inspector observed portions of the preoperational test verifying resin flow between some of the aforementioned equipment. The pre-op procedure was reviewed and available results examined. No discrepancies were identified in testing technique or results.

8. Gaseous Radwaste System

NUREG publications 0578 and 0737 recommended that systems outside of containment likely to contain radioactive materials be leak tested. The Waste Gas System (WGS) was specifically mentioned as one system whose test should include helium leak detection or equivalent testing method. The licensee was also requested to establish and implement a preventive maintenance program to include periodic leak tests at intervals not to exceed each refueling cycle.

During this inspection the inspector reviewed construction records of hydrostatic "snoop" tests performed on WGS joints and welded pipe. This did not meet the helium or equivalent leak test method. The St. Lucie Unit 2 Safety Evaluation Report appears to remove this requirement from the licensee due to post-accident design features. However, non-accident conditions may cause high airborne radioactivity in the Auxiliary Building if the system is not leak tight. The inspector stated that the Waste Gas System should be leak tested with helium or equivalent test method before start-up to keep exposure to airborne radioactivity as low as reasonably achievable (ALARA). A licensee representative stated that they will evaluate the possibility of performing the test and establishing a periodic test program (82-70-04).

9. Plant Tours

The inspector toured the facility and observed the general plant construction and equipment installation. The inspector noted two problem areas concerning potential radiation streaming through walls. The east wall of the 2A Boric Acid Condensate Ion Exchanger cubicle contains a penetration approximately eight inches in diameter and chest high which does not appear to be required. On the minus 0.5 foot elevation instrument lines for the Spent Resin Tank from the valve gallery pass through a penetration much larger than appears to be required. In both instances, radiation streaming from high dose rate areas (as presented in FSAR Figures 12.3-8 and 12.3-7 respectively) is possible. A licensee representative stated that methods for rectifying the situations will be investigated. The inspector stated that this item will be examined during future inspections (82-70-05).

10. New Fuel Receipt

- a. During the inspection, the licensee received the first shipment of nuclear fuel. The inspector observed the licensee's practices in conducting surveys, establishing control areas around the fuel, posting of notices, providing personnel dosimetry and general health physics practices. The inspector noted no major problems. Minor comments on survey techniques were made by the inspector and acknowledged by the licensee.

- b. The fuel license (SNM-1902) requires radiation protection procedures be prepared and followed. The inspector reviewed health physics procedures applicable to the fuel receipt and stated they appeared adequate. The inspector had no further questions.
11. Licensee Action on Bulletins, Circulars, Information Notices, and Inspector Follow-up Items

(Closed)(82-38-02) Portable Instrument Procurement. The inspector reviewed the licensee inventory of portable survey instruments and verified that most of the instruments ordered for Unit 2 are operational. Some instruments, including the neutron rem meters are onsite but being calibrated. The inspector had no further questions.

The following bulletins, circulars, and information notices have been closed for Unit 2 because they address programs common with Unit 1. Licensee actions were found adequate in their initial responses. These initial responses for Unit 1 were reviewed during this inspection and found to be appropriate for Unit 2.

BULLETIN

78-07 Protection Afforded by Air-line Respirators and Supplied-air Hoods

CIRCULARS

78-03 Packing Greater Than Type A Quantities of Low Specific Activity Radioactive Material for Transport

79-09 Occurrences of Split or Punctured Regulator Diaphragms In Certain Self Contained Breathing Apparatus

79-15 Bursting of High Pressure Hose and Malfunction of Relief Valve "O" Ring in Certain Self-Contained Breathing Apparatus

81-07 Control of Radioactively Contaminated Material

INFORMATION NOTICES

79-09 Spill of Radioactively Contaminated Resin

80-19 NIOSH Recall of Recirculating-Mode (Closed Circuit) Self-Contained Breathing Apparatus (Rebreather)

80-22 Breakdowns in Contamination Control Programs

80-24 Low-Level Radioactive Waste Burial Criteria

- 80-32 Clarification of Certain Requirements for Exclusion-Use Shipment of Radioactive Materials
- 81-26 Compilation of Health Physics Related Information Items
- 82-18 Assessment of Intakes of Radioactive Material by Workers
- 82-36 Respirator Users Warning for Certain 5-Minute Emergency Escape Self-Contained Apparatus
- 82-42 Defects Observed in Panasonic Model 801 and Model 802 Thermoluminescent Dosimeters

The following circulars were also closed for Unit 2

- 72-21 Prevention of Unplanned Releases of Radioactivity. The inspector reviewed the licensee's response to this circular and verified that applicable Unit 1 procedures were appropriately modified. Unit 2 procedures are written using Unit 1 procedures as a basis, thereby addressing the issues of this circular for Unit 2. The inspector had no further questions.
- 80-14 Radioactive Contamination of Plant Demineralized Water System and Resultant Internal Contamination of Personnel. The inspector reviewed the response to this circular and agreed that it appeared no direct physical interconnections between the service water and demineralized water systems exist. The licensee maintains adequate administrative control over jumpers which should prevent any potential for siphoning from one system to another. In addition the inspector verified that potable water containers are available throughout the plant. The inspector had no further questions.
- 80-18 10 CFR 50.59 Safety Evaluations for Changes to Radioactive Waste Treatment and Systems. The inspector verified that the circular was reviewed by the appropriate licensee personnel responsible for performing Safety Evaluations. The inspector had no further questions.
- 81-09 Containment Effluent Water That Bypasses Radioactivity Monitor. The inspector reviewed the licensee's response to this circular and noted that the design of the St. Lucie Unit 2 cooling water system in containment precludes an event such as the one addressed. The inspector had no further questions.