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

Report No. 50-335/81-30

Licensee: Florida Power and Light Company
9250 West Flagler Street
Miami, FL 33152

Facility Name: St. Lucie 1

Docket No. 50-335

License No. DPR-67

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

Inspectors: H C Dance/for — 1/5/81
S. A. Elrod — Date Signed

H C Dance/for — 1/5/81
H. E. Bibb — Date Signed

Approved by: H C Dance — 1/5/81
H. C. Dance, Section Chief, Division of Resident and Reactor Project Inspection — Date Signed

SUMMARY

Inspection on October 11, 1981 - November 24, 1981

Areas Inspected

This routine inspection involved 355 resident inspector-hours on site in the areas of followup of previous concerns, maintenance, surveillance, plant operations, refueling activities snubber inspection, local leak rate testing preparation for startup after refueling.

Results

Of the seven areas inspected, no violations or deviations were identified in 6 areas; 1 apparent item of violation was found in one area (Violation - inadequate local leak rate test procedure - paragraph 7).

Senior Residents Impressions

DETAILS

1. Persons Contacted

Licensee Employees

*C. M. Wethy, Plant Manager
J. H. Barrow, Operations Superintendent
*J. E. Bowers, Maintenance Superintendent
D. A. Sager, Operations Supervisor
N. G. Roos, Quality Control Supervisor
R. J. Frechette, Chemistry Supervisor
C. F. Leppla, Instrument and Control Supervisor
P. L. Fincher, Training Supervisor
R. R. Jennings, Technical Department Supervisor
B. W. Mikell, Outage Coordinator
C. A. Pell, Reactor Engineering Supervisor
H. F. Buchanan, Health Physics Supervisor
J. H. Ruby, Plant Administrative Supervisor
J. G. West, Security Supervisor
O. D. Hayes, Nuclear Plant Supervisor
L. W. Pearce, Nuclear Plant Supervisor
N. D. West, Nuclear Plant Supervisor
C. L. Burton, Nuclear Plant Supervisor
M. B. Vincent, Assistant Plant Superintendent - Electrical
T. A. Dillard, Assistant Plant Superintendent - Mechanical
A. W. Bailey, Quality Assurance Supervisor

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

NRC Resident Inspector
*S. Elrod
*H. Bibb

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on October 16 and November 25, 1981 with those persons indicated in paragraph 1 above. The licensee representative indicated that the local leak rate test procedure was being upgraded. The inspector agreed (having observed the work in progress).

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Previously Identified Areas of Concern

a. (Closed) Inspector Followup Item 50-335/78-PC-08. Spare Containment Pipe Penetrations.

This followup item required inspectors to personally inspect spare containment penetrations based on a finding at a PWR with a concrete containment that some spare penetrations were not capped on both ends as was committed to. Since St. Lucie 1 has a steel containment with shield building, the inspector reviewed the penetrations to ensure they were welded shut. There are no spares that extend from the containment through the shield building wall into the Reactor Auxiliary Building. All spare locations in the containment, both mechanical and electrical, are covered by a welded plate. The inspector had no further questions about this item.

b. (Open) Inspector Followup Item 50-335/80-36-01, Long Term Corrective Action for MSIV Bypass Valves.

This item concerned correction of valve stems apparently broken by the operation of the motor operator. Licensee investigation showed that the valve stems were broken under tension and that the motor operator is not strong enough to accomplish this. The manual operator not only has sufficient mechanical advantage to part the stem, the handwheel must also be turned counter clockwise to close the valve. Signs have been affixed to the handwheels warning of this condition. Stems made of improved material have been ordered but not received. This item remains open pending completion of the long-term corrective action

c. (Open) Inspector Followup Item 335/80-36-02 - Emergency Diesel Generator Timing Relay Drift.

During the fall 1981 refueling outage, several solid state control relays were obtained and installed in a main circulating pump controller for test purposes. They are being evaluated for potential future replacement in engineered safeguards timing service. Licensee Event Report (LER) 335/81-42 indicates that timing relay setpoint drift continues to be a problem. This item remains open pending resolution of the timing relay drift problem.

d. (Closed) Inspector Followup Item 335/80-36-03. - Followup Long Term Corrective Action to Improve Rod Drive Control Power Supplies.

During the fall 1981 refueling outage, redundant power supplies were installed in accordance with Plant Change/Modification 633-79. These power supplies were installed on stand-offs to improve cooling. This item is closed.

e. (Closed) Inspector Followup Item 335/81-14-02 - Sequence of DC Ground Isolation Procedure Revision 5.

Revision 7 of off normal operating procedure 0960030 was issued October 20, 1981. The sequence of actions have been corrected. The inspector has observed this procedure in use with apparently excellent results. This item is closed.

6. Licensee Event Reports Review

The following LER's were reviewed to verify that reporting requirements had been met, causes had been identified, corrective actions appeared appropriate, generic applicability had been considered, and the LER forms were complete. Additionally, for those reports identified by asterisk, a more detailed review was performed to verify that the licensee had reviewed the events, corrective action ahad been taken, no unreviewed safety questions were involved, and violations of regulations or Technical Specification conditions had been identified.

*LER 335/81-36 Containment Pressure Transmitter Failure
*LER 335/81-37 Containment Pressure Transmitter Failure
*LER 335/81-40 Engineered Safeguards Feature Setpoint Drift
*LER 335/81-41 Dose Equivalent Iodine Greater than 1.0 uCi/gram
*LER 335/81-43 1A Battery Charger High Voltage
*LER 335/81-44 Loss of Containment Integrity
*LER 335/81-45 Reactor Protection System Loss-of-load Pressure Switch

7. Containment Local Leak Rate Testing

During this inspection period and during September 1981, the inspector observed containment leak rate testing in accordance with operating procedure No. 1300051 Rev 4 - Local Leak rate Testing. Tests witnessed included:

a. Penetration 52C - Continuous Radiation Monitoring Retest of valve I-FCV-26-6 which had been repaired.

b. Penetration 43 - Reactor Drain Tank V-6301 and V-6302

c. Penetration 9 - Instrument air backup. I-MV-18-1, I-V-18193, and I-V-18195 - Retest

d. Penetration 23 - Component cooling water to reactor coolant pump I-HCV-14-1, I-HCV-14-7

e. Maintenance hatch seal

f. Personnel airlock inner and outer seals per OP 1300052 Rev 10 Appendix A - Air lock periodic leak testing

g. Personnel air lock inner seal automatic tester function per OP 1300053 - Air lock automatic leak tester functional test.

Initially, procedure OP 1300051 Rev. 4 was found by the inspector to be inadequate in that the procedure did not always provide an atmospheric vent path downstream of the valve under test, did not provide for demonstration that other pressure sources that could affect the test were in fact isolated and not leaking into the test area, and did not address all valves requiring alignment in order to conduct a valid test.

The inspector considered the above situation to be a violation of Technical Specification 6.8.1.c and informed licensee management at that time. (Violation 335/81-30-01)

During the performance of local leak rate testing the test engineer was observed correcting the inadequacies discussed above and observed conducting walk-down of systems being leak tested. Temporary procedure changes were extensively utilized. Detailed records of valve lineups and areas for permanent procedure improvement were observed to be maintained. The inspector had no further questions concerning the actual performance of testing during this 1981 outage. The revised procedure will be reviewed upon receipt.

8. Inspection of Hydraulic and Mechanical Seismic Restraints

The inspector reviewed the visual inspection and functional test activities conducted during this outage in accordance with General Maintenance Procedure M-0006, Rev. 7, dated August 13, 1981, Inspection of Hydraulic and Mechanical Seismic Restraints. The applicable plant work orders were: 3622, 3555, 3596 and 3640. A plan to replace all Bergen Patterson hydraulic snubbers with mechanical snubbers was deferred until next outage because license amendment No. 44 did not arrive in time to accomplish the modification. The inspector observed portions of the functional testing and the condition of many snubbers during plant tours.

On November 6, 1981, the inspector observed areas on the fluid-addition fittings of three Bergen-Patterson hydraulic snubbers located in the pipe penetration room of the reactor auxiliary building. Licensee management was promptly informed. Subsequent licensee investigation concluded that the grease was of recent origin since no changes to hydraulic fluid color had occurred. The grease had not been added during snubber maintenance. The grease was found only in eight of ten snubbers located in either the pipe penetration room or letdown heat exchangers rooms. All other safety-related hydraulic snubbers appeared free of grease. Because of the number of persons performing back fit work in these areas, the responsible party could not be identified.

The investigation consisted of removing the fluid - addition fitting and inspecting the interior of the fitting for grease. Grease had been observed to adhere to the interior of those fittings that had external evidence of grease. This technique was discussed with NRC Region II technical staff

members and deemed appropriate. All eight snubbers found to contain grease were removed, rebuilt and functionally tested in accordance with General Maintenance Procedure M-0006 Revision 7.

Since the inspector observed portions of the visual inspection effort and earlier functional testing there were no further questions in this area.

9. Followup of Licensee Actions with Respect to a Confirmation of Action Letter Dated June 30, 1981

This is a continuation of the followup discussed in paragraph 6 of Inspection Report 335/81-18. On November 9, 1981, the inspector reviewed the status of actions with the responsible Health Physics supervisor. Also reviewed were procedures HP 202 Rev. 1 dated September 25, 1981 Off Site Environmental Monitoring During Emergencies; HP 102 Rev. 0 dated September 25, 1981 - Operation and Calibration of Ludlan Model 2218 Dual Channel Analyzer; EPIP 3100033E Rev 3, dated August 24, 1981 Off Site Dose Calculations; and EPIE 3100035E Rev. 0, dated July 13, 1981 - Offsite Radiological Monitoring and Dose Assessment. It appears that the actions committed to were taken. Additionally FPL letter L-81-505 dated December 1, 1981 (Uhrig-O'Reilly) confirms the licensee's actions taken. This item is closed.

10. Improper Radiography Exclusion Area

On October 17, 1981 the inspector found the upper turbine platform to not be posted for radiography while being conducted on the mezzanine level below by U. S. Testing Co. Quality Control personnel. Because the inspector had crossed the area in question during radiography, an investigation was conducted which included calculation of potential exposure. The result of 1 millirem or less potential exposure to the inspector was indication that a "re-shot" was not needed to measure actual exposure. The "re-shot" would have caused more radiation exposure to the radiographer than warranted in this circumstance. Since U. S. Testing Co. is holder of the radiography license under the State of Florida NRC Region II Health Physics personnel indicated that the State would be notified. This matter is considered closed with respect to FPL activities.

11. Refueling Activities

The inspector daily observed activities conducted while still in Mode 6 (Refueling) to assure compliance with the Technical Specifications. Areas inspected included: Periodic testing of refueling related equipment, witnessing two shifts or more of fuel handling operations, maintenance of good housekeeping, staffing, and containment integrity.

During this period, two incidents occurred which compromised containment integrity. The first dealt with both containment airlock doors being open simultaneously for a few seconds during fuel moving operations. The second dealt with two penetrations being drilled in a feedwater line external to the containment while a steam generator manway cover was removed (in

containment) during fuel moving operations. Both of these occurrences put the plant into an action statement.

The first event occurred when the inspector, in an effort to exit containment after a routine inspection tour, opened the inner airlock door and immediately felt a blast of air coming from the airlock into containment. The inspector stepped into the airlock and noted that the outer airlock was ajar about 6 inches, closed against its own locking pawl. The inspector immediately stepped back into the containment and closed the inner door (elapsed time about 15 seconds). Fuel movement operations were in progress at the time, but closing the inner door took the plant back out of the action statement in a much shorter time than attempting to contact the refueling operations personnel and halt fuel movement. The inspector then cycled the outer door operating handle open and closed slowly and then reopened the inner door. This time the outer door was properly closed and latched. The inspector completed proper exiting of containment and immediately informed the mechanical maintenance supervisor of the interlock problem.

The second incident occurred when two 3/16" penetrations were drilled in the "A" main feed piping between the main feed isolation valve and containment during fuel movement and while the "A" steam generator manway covers were removed for maintenance. The Nuclear Plant Supervisor immediately ordered a stop to fuel movement operations and had the two 3/16" penetrations plugged before resuming refueling operations. This was reported, as required in licensee Event Report 81-44.

These incidents were fully discussed with NRC Region II management and the licensee's corrective action for these isolated occurrences was appropriate.

12. Preparation for Startup After Refueling

a. The inspector verified that technically adequate procedures were available for the following activities from startup to full power operation:

Proc. Number	Rev.	Title
OP 0030122	20	Reactor Startup
OP 0030221	4	Initial criticality following refueling
OP 0110052	3	Zero power physics tests
OP 0010133	2	Reactor Engineering Power Ascension Program
OP 0030123	5	Reactor Guidelines during load changes
OP 0030124	14	Turbine Generator Startup - Zero to full load
OP 3200020	9	Primary system manual Calorimetric
OP 1200051	7	Nuclear and Delta T Power Calibration

OP 3200050	5	Calibration of fixed incore detector alarm setpoint
OP 3200054	5	Surveillance requirements for total integrated radial peaking factor
OP 0120051	5	RCS flow determination by Calorimetric
OP 3200058	1	Surveillance requirements for Total Planar Radial Peaking Factor
OP 3200057	1	Calculation of PDQ RMS deviation
OP 3200051	8	At power determination of Moderator temperature coefficient and power coefficient
OP 3200059	3	Forced Xenon Oscillation Test
OP 0030120	8	Pre-start check list
OP 0030126	5	Estimated critical condition and inverse count rate ratio
I&C 1220052	7	Linear Power range safety and control channel monthly calibration

A few typographical errors were noted, but none of such a nature as to make the procedure technically unworkable. These errors were identified to Reactor Engineering. No violations or deviations were found in this area.

13. Surveillance Observation

a. The inspector reviewed records for periodic check of seismic monitoring instrumentation in accordance with Operating Procedure 1400058. The past four surveillance records were checked to confirm that the required surveillance frequency was being met. The inspector verified that testing was performed in accordance with adequate procedures, test instrumentation was calibrated, limiting conditions for operation were met, removal and restoration of the affected components were accomplished, test results met requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

No violations or deviations were identified in this area.

14. Monthly Maintenance Observation

The inspector observed maintenance work being performed on plant safety-related equipment. One component, V-3628 in the safety injection system, was selected for an in-depth look at eleven attributes including compliance with limiting conditions for operation, proper removal from service, use of approved procedures, qualified personnel, use of certified parts, proper radiological controls, equipment properly tested prior to

return to service, etc. No violations or deviations were identified in this area.

15. Review of Plant Operations

The inspector observed routine control room operations, reviewed applicable logs and conducted discussions with control room operators during the report period. The inspector verified the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components. Tours of the auxiliary and turbine buildings were conducted to observe plant equipment conditions including potential fire hazards, fluid leaks, and excessive vibrations and to verify that maintenance requests had been initiated for equipment in need of maintenance. The inspector, by observation and direct interview, verified that the physical security plan was being implemented in accordance with the station security plan.

The inspector observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls.

The inspector observed an I&C technician inserting new data setpoints in the reactor protection system per I&C procedure 1400155, Rev. 5, channel calibration - thermal margin/low pressure - refueling. The work was being performed under an authorized plant work order with an approved up-to-date procedure, proper equipment, and qualified personnel.

These reviews and observations were conducted to verify that facility operations were in conformance with the requirements establishment under technical specifications, 10 CFR and facility procedures.

No violations or deviations were found in the area.