UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

JUN 20 1992

Report No.: 50-335/92-12 and 50-389/92-12

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 Units 1 and 2

Inspection Conducted: May 18-22, 1992

Inspector: R. B. Shortridge 6/17/92
R. B. Shortridge Date Signed

Approved By: John P. Potter 6/18/92
John P. Potter, Chief Date Signed
Facilities Radiation Protection
Section
Radiological Protection and
Emergency Preparedness Branch
Division of Radiological Safety
and Safeguards

SUMMARY

Scope:

This was a routine, unannounced inspection of the Radiation Protection (RP) program and included a review of organization and management controls, external exposure control, internal exposure control, control of radioactive material, surveys and monitoring, the program to maintain occupational exposure As Low As Reasonably Achievable (ALARA) and followup of previously identified items.

Results:

Within the areas inspected, no violations or deviations were identified. Radiological performance on jobs inside containment was good. Based on observation of outage work, records review, and interviews with management and staff, the inspector determined that the RP program was implemented using high standards and was effective in protecting the health and safety of the public.

REPORT DETAILS

1. Persons Contacted

*G. Boissy, Plant General Manager
*H. Buchanan, Superintendent, Health Physics
*C. Burton, Manager, Operations
*J. Danek, Corporate Health Physics
*R. Dawson, Manager, Maintenance
*J. Dyer, Supervisor, Quality Control
*J. Holt, Engineer, Licensing
*L. Jacobus, ALARA Coordinator, Health Physics
*L. Large, Supervisor, Health Physics
*D. Lowens, Engineer, Quality Assurance
*R. McCullens, Operations, Supervisor, Health Physics
*L. McLaughlin, Manager, Licensing
*H. Mercer, Technical Supervisor, Health Physics

Other licensee employees contacted during this inspection included technical administrative personnel.

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S. Elrod, Senior Resident Inspector
*J. Norris, Project Manager, NRR
*M. Scott, Resident Inspector

*Attended Exit Interview

2. Organization and Management Controls (823729)

a. Organization

The inspector reviewed and discussed with licensee representatives the Radiation Protection (RP) organization, staffing levels and lines of authority as they relate to the RP and verified that the licensee had not made organizational changes which would adversely affect the ability to control radiation exposures and radioactive material.

Technical Specification (TS) 6.3.1 requires that each member of the unit staff shall meet or exceed the minimum qualifications of ANSI/ANS-3.1, 1978 as endorsed by Regulatory Guide 1.8, September 1975 (revised May 1977), except for (1) the Health Physics Supervisor who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975. The inspector reviewed an audit performed by Quality Assurance (QA) annually to verify the training and qualifications of the facility staff. The audit, QSL-OPS-91-8222, dated September 18, 1991, referenced procedures applicable to TS and ANSI/ANS requirements and determined that facility staff met all requirements.

b. Management Controls

The inspector reviewed other QA audits and Radiological Deficiency Reports (RDRs), important documents used by management in maintaining RP program oversight/control.

QSL-OPS-91-791 Performance Monitoring Audit-January 1991

QSL-OPS-92-869, Performance Monitoring Report for April 1992.

The audits focused on specific RP activities and in general centered on compliance with established procedure requirements. The audits did not appear to probe for programmatic problems in any depth.

In previous inspections the inspectors found that the licensee did not utilize the RDR system fully to bring about RP program improvement through the identification and correction of RP performance problems. The licensee had shown some improvement in this area. To date in 1992, the licensee had written approximately nine RDRs. Licensee representatives stated that Health Physics (HP) procedure HP-101, Radiological Deficiencies Reports had been changed to the extent that violators names were no longer required to be recorded. This was done to encourage greater use of the RDRs system.

The inspector reviewed nine RDRs and noted that one documented the willful disregard by an operator for HP verbal instructions. The event occurred when an operator was sitting half in and half out of a contaminated area and refused to move inside the area when requested by an HP technician. The inspector reviewed the event in detail and interviewed several people involved. Based on the review, the inspector determined that appropriate corrective actions were taken when the Operations Manager documented the event and his expectations in the Operations Night Order Book. The inspector discussed this event in the exit and informed the licensee that this appeared to be a negative event that resulted in positive corrective action and a strengthening of compliance with RP program requirements.

No violations or deviations were identified.

3. External Exposure Control (83729)

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

10 CFR 20.203 specifies the posting, labeling, and control requirements for radiation areas, high radiation areas, airborne radioactivity areas, and radioactive material areas. Additional requirements for control of high radiation areas are contained as TS 6.12.

During tours of the auxiliary building and Unit 2 containment to observe outage RP activities, the inspector noted that all personnel were wearing personnel dosimetry as required. All postings and labelings of the various radiologically controlled areas (RCA) of the plant were as required by 10 CFR 20 and the site procedures. The inspector performed radiation and contamination surveys in the RCA and Unit 2 containment and noted that the results did not differ from the licensee performed/posted surveys.

The inspector attended a pre-shift briefing for the repair of a 3-inch Safety Injection Stop Check Valve (SISCV) V3525. The valve was located on the 19' elevation of Unit 2 containment. The valve was located in the reactor coolant system (RCS) approximately 3 feet from and connected directly to a 12" reactor coolant line which was connected directly to the hot leg coming off the reactor vessel. Since the refueling cavity water level was established for defueling and no other valves were located in between to provide isolation of the system, a freeze seal was required. The preshift briefing for the job was comprehensive and pointed out the radiological implications if problems were experienced with the freeze seal. Specifically, if the freeze seal did not hold and the valve top or plug could not be installed, the water inventory in the refueling cavity and reactor vessel (defueled) to the nozzles could drain through this opening.

A special radiation work permit (RWP) was developed, 92-3539, for the repair of the subject valve. Area surveys showed that temporary shielding would be required and once installed, the dose rates in the immediate work area dropped from 80-120 millirem/hour (mR/hr) to 20-65 mR/hr. General Maintenance Procedure No. M-0005, Revision 11, dated April 6, 1992, Freeze Seal Application, provided job requirements which included: invoking another procedure for the control of infrequently performed tests; that only trained personnel be utilized; and requirements and contingency plans in the event they were needed. The contingency plans required that the control room be notified

immediately if the freeze seal was lost; steps to establish system integrity; and backup of pipe plugs, freeze seal equipment, and ample liquid nitrogen be on the job site. The contingency plan was reviewed and approved by the Plan Facility Review Group and was posted at the job site.

The inspector monitored radiological and operational aspects of job performance and noted all equipment to support the specific contingency plan for freeze seal failure was staged at the job site. In addition, mechanical and contract freeze seal and personnel were on standby at the job site to perform any contingency necessary while the valve top was removed.

Upon removal of the valve top and flapper the dose rates inside the valve were 3.5 Rem/hour (R/hr) contact and 350 R/hr at 18 inches. General Area dose rates were 15-45 mR/hr in the immediate area of the valve. The flapper and the seat in the valve were both heavily damaged (pitted and cut). Contamination levels inside the valve were up to 10 mrad/hour beta. Inspectors found the valve too damaged to repair and it was not decided what would be the disposition of the valve during the inspection. The valve top was installed and the freeze seal was terminated. All radiological operations performed concerning the RWP were well performed.

The inspector reviewed the administrative control for high radiation area keys. TS 6.12.2, in part, requires that for areas accessible to personnel with high radiation levels such that a major portion of the body could receive in one hour a dose greater than 1000 mRem/hr, shall be provided with locked doors to prevent unauthorized entry, and the keys shall be maintained under the administrative control of the shift foremen on duty and/or health physics supervision.

A review of the locked high radiation area (LHRA) logs showed that over the 1991-1992 period for both units that personnel logging the keys out frequently failed to log the keys in after their use. The inspector discussed this apparent problem with the operations HP supervisor and found that at no time had LHRA key had been lost. HP supervision considered this to be a record keeping problem and stated that actions, necessary to correct the weaknesses, would be taken.

No violations or deviations were identified.

4. Internal Exposure Control (83729)

10 CFR 20.103(a)(3) requires in part, that the licensee, as appropriate, use measurements in the body, measurements of radioactivity excreted from the body, or any combination of such as may be necessary for the timely detection and assessment of individual intakes of radioactivity by exposed individuals.

The inspector reviewed the licensee bioassay program during the inspection and found that the licensee for 1992 did not have any whole body counts (WBCs) greater than five percent Maximum Permissible Organ Burden (MPOB).

The inspector also reviewed personnel contamination events (PCEs) and noted that all personnel with facial or contamination on the neck had been sent to get a WBC. The inspector determined that the licensee followed procedure requirements and no discrepancies were identified. Selective records were also reviewed to determine if the licensee was providing NRC Form 5 with internal assessments for personnel that had been terminated. No problems were noted.

The inspector learned from licensee representatives that new air samplers with telemetric readouts had been purchased. The computerized, telemetric, air sampling system could remotely monitor 64 air samplers located throughout the containment or auxiliary building. Data from the remote stations are updated every 8-10 seconds in units of derived air concentration (DAC) for exposure, or DAC-hrs for integrated exposure rate.

During tours of the Unit 2 containment, the inspector noted the use of containments to limit the spread of contamination, both surface and airborne, in use. The inspector verified the breathing air manifolds had satisfactory air pressure and calibrated gauges, necessary for taking credit for protection factors during use.

No violations or deviations were identified.

5. Surveys, Monitoring, and Control of Radioactive Material (83728)

10 CFR 20.201(g) 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 radioactive hazards that may be present.

10 CFR 20.203 specifies the posting, labeling, and control requirements for radiation areas, high radiation areas, airborne radioactivity, areas and radioactive material areas. Additional controls for high radiation areas are contained in TS 6.12. During tours of the containment building and auxiliary building the inspector noted that all posting and labeling was in accordance with licensee procedures. The inspector performed both radiation and contamination surveys to ascertain licensee performance in this area. The inspector's survey results did not differ from the licensee postings and recorded surveys. The inspector noted that the licensee had made improvements in locking required high radiation areas. New locking devices had been fabricated for steam generator secondary manways, and the inspector determined that all high radiation areas required to be locked were locked.

The inspector reviewed all PCEs and noted that the licensee had experienced a low number (28) of PCEs to date. The inspector also reviewed skin dose calculations for hot particle contamination.

No violations or deviations were identified.

6. Program for Maintaining Exposures As Low As Reasonably Achievable (ALARA) (83729)

10 CFR 20.1(c) states that persons engaged in activities under licenses issued by the NRC should make every reasonable effort to maintain radiation exposures 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 specific aspects of the licensee's program to maintain occupational exposure ALARA with licensee representatives. The ALARA coordinator demonstrated a robotic device in the reactor cavity that provided clear remote closed circuit television pictures, as well as, a capability to perform vacuuming operations. The device was outfitted with two radiation detection devices capable of reading high radiation levels. Also, the licensee provided information on the in-pool filtration system for maintaining the quality, and clarity of reactor vessel cavity water. The system is located in the pool and the high levels of radiation are kept underwater during filter change out. The licensee was unable to postulate a dose savings from these systems but stated that the robotic device saved significant exposure in performing remote

inspections during reactor head disassembly/assembly and defueling operations. The licensee stated that new nozzle dam upgrades for Unit 1 for 1993 had been approved. The licensee has had unnecessary exposures lost to leaking nozzle dams. In 1992 alone, 7 person-rem was lost to three drain downs for the hot leg on "A" steam generator due to leaks. The licensee is scheduled to install a new permanent cavity seal ring for the March 1993 Unit outages. The seal ring has neutron shielding installed on the underside. This will help cut the installation time for shielding from four days and 12 person-rem to one and one-half days.

The licensee continues to use increased filtration to reduce the size of particles in the reactor coolant systems (RCS). Also, a list of valves containing stellite has been developed which they plan to search for replacements. The reduction of cobalt in the RCS by replacement of valves with stellite is expected to take five years.

At the time of the inspection, the licensee was 30 days into a 60 day scheduled refueling/maintenance outage. Collective dose was 128 person-rem and slightly below projection for this period in the outage. The site collective dose goal of 250 person-rem for calendar year 1992 appears achievable.

No violations or deviations were identified.

7. Licensee Actions on Previously Identified Inspector Findings (92701)

(Closed) IFI 91-30-02. Survey Map Numbers Referenced by RWP Were Incorrect.

The inspector reviewed this item in a previous inspection. The RWP did reference the incorrect internal location of a survey map on the RWP. The licensee corrected the reference and reviewed all other RWPs for similar problems. None were found. This item is closed.

8. Exit Interview

The inspection scope and findings were summarized on May 22, 1992, with those persons indicated in Paragraph 1. The inspector noted that the RP program was aggressive in their quest for high standards and in using new technology and innovative ideas to accomplish this. The inspector did not receive any proprietary information nor were any dissenting

comments from the licensee. Licensee management was informed of the IFI closed in Paragraph 7.

Item Number	Description and Reference
50-335/91-30-02	IFI (Closed). Referencing incorrect radiation survey map numbers on an RWP.