



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

OCT 15 1985

Report No.: 50-302/85-34

Licensee: Florida Power Corporation
 3201 34th Street, South
 St. Petersburg, FL 33733

Docket No.: 50-302

License No.: DPR-72

Facility Name: Crystal River 3

Inspection Conducted: August 26-30, 1985

Inspector: W. T. Cooper *W. T. Cooper* 10/8/85
 Date Signed

Approved by: C. M. Hosey *C. M. Hosey* 10/8/85
 C. M. Hosey, Section Chief
 Division of Radiation Safety and Safeguards
 Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 33 inspector-hours onsite in the areas of external exposure control and personal dosimetry, internal exposure control, solid waste processing and storage, the licensee's actions to maintain occupational radiation exposures as low as reasonably achievable (ALARA) and Surveys, Monitoring and Control of Radioactive Material.

Results: Two violations - failure of personnel to frisk properly (paragraph 7) and failure to have a procedure for calculation of MPC-hrs for cases of radioactive material ingestion (paragraph 5).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *P. McKee, Plant Manager
- *W. Rossfeld, Site Nuclear Compliance Manager
- *K. Lancaster, Manager, Site Nuclear Quality Assurance
- *P. Skramstad, Nuclear Chemistry/Radiation Protection Superintendent
- *L. Hill, Manager, Site Nuclear Services
- *G. Clymer, Nuclear Waste Manager
- *V. Roppel, Manager, Plant Engineering and Technical Services
- *F. Bailey, NOM
- *S. Powell, Senior Nuclear Licensing Engineer
- *B. Komara, Nuclear Quality Control Supervisor
- *A. Kazemfar, ALARA Specialist
- *P. Breedlove, Nuclear Records Management Supervisor
- *J. Bufo, Nuclear Compliance Specialist
- A. Clemons, Nuclear Compliance Engineer
- R. Roberts, Health Physics Supervisor
- S. Long, NQC Supervisor
- M. Johnson, ALARA Specialist
- R. Browning, Health Physics Supervisor
- R. Clark, Radiation Protection Manager
- L. Lockhart, Nuclear Operations Superintendent

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

NRC Resident Inspector

*J. Tedrow

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on August 30, 1985, with those persons indicated in paragraph 1 above. The apparent violation for inadequate frisking practices (paragraph 7) was discussed in detail with licensee management. Licensee management acknowledged the apparent violation and took no exceptions. The inspector also discussed the uptake of radioactive material by one licensee employee during the last refueling outage and the requirement that uptakes by ingestion must be evaluated as required by 10 CFR 20.103(a)(1) footnote 4 (paragraph 5).

In a telephone conversation on October 1, 1985, between V. Panciera of the Region II office and G. Westafer, Manager, Nuclear Operations Licensing and Fuel Management, the licensee was informed that the item concerning MPC-hour

calculation for cases of radioactive material ingestion initially identified as an inspector follow-up item (IFI) in the exit interview was being changed to a violation of Technical Specification 6.11.

The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during this inspection.

3. Licensee Action on Previous Enforcement Matters

(Closed) Violation (50-302/85-12-03) This violation concerned the failure to properly label bags containing radioactive material with a radiation caution symbol.

The inspector reviewed and verified the corrective actions as stated in Florida Power Corporation's letter of June 21, 1985, and supplemental response on August 15, 1985.

(Closed) Violation (50-302/85-12-04) This violation concerned failure to conspicuously post notices as required by 10 CFR 19.11.

The inspector reviewed and verified the corrective actions as stated in Florida Power Corporation's letter of June 21, 1985, and supplemental response on August 15, 1985.

(Closed) Violation (50-302/85-12-02) This violation concerned failure to establish and implement procedures which prescribe the requirements for adequate personnel frisking techniques.

The inspector reviewed and verified the corrective actions as stated in Florida Power Corporation's letter of June 21, 1985, and supplemental response on August 15, 1985. This violation was similar to a violation which is discussed in paragraph 7 of this report.

4. External Occupational Dose Control and Personal Dosimetry (83724)

During plant tours, the inspector checked the security of the locks at three locked high radiation areas and observed the posting of survey results and the controls specified on four radiation work permits (RWPs).

a. Use of Dosimeters and Controls

The licensee was required by 10 CFR 20.202, 20.201(b), 20.101, 20.102, 20.104, 20.402, 20.403, 20.405, 19.13, 20.407, and 20.408 to maintain worker's doses below specified levels and keep records of and make reports of doses. The licensee was required by 10 CFR 20.203 and Technical Specification 6.12 to post and control access to plant areas. FSAR Chapter 12 also contained commitments regarding dosimetry and dose controls. During observation of work in the plant, the inspector observed the wearing of TLDs and pocket dosimeters by workers. The inspector discussed the assignment and use of dosimeters with health physics supervisors and health physics technicians. During plant

tours, the inspector observed the posting of areas and made independent measurements of dose to assure proper posting. The inspector reviewed recent changes to plant procedures regarding the use of TLDs and dosimeters.

b. Review of Licensee Administrative Overexposure

The inspector reviewed a licensee evaluation for an administrative overexposure which was identified on May 21, 1985. The incident occurred during work to rewire motor operated valves in the letdown cooler room on the 95 foot elevation of the reactor building. The licensee was using self reading dosimeters (SRD) to monitor external exposure in lieu of performing daily TLD analysis. SRD placement was made based on an evaluation performed by a health physics supervisor (HPS). Due to a shortage of SRDs during this work evolution, an SRD was not placed at each TLD location. The evaluation performed by the HPS indicated that the highest dose rates could be expected in the region of the right thigh and an SRD was subsequently placed at that location. The licensee analysis of TLDs on May 21, 1985, indicated an exposure to the left thigh for the period May 1-21, 1985, of 2,538 mR. This resulted in a second quarter 1985 dose of 2,591 mR. A licensee representative stated that the employee possibly bumped a lead shielding blanket during his work, causing the blanket to be displaced and exposing his left thigh to the higher-than expected dose rates. The inspector discussed this case with selected involved personnel and reviewed the licensee's corrective actions.

No violations or deviations were identified.

5. Internal Exposure Control and Assessment (83525)

The licensee was required by 10 CFR 20.103, 20.201(b), 20.401, 20.403, and 20.405 to control uptakes of radioactive material, assess such uptakes, and keep records of and make reports of such uptakes. FSAR Chapter 12 also includes commitments regarding internal exposure control and assessment.

Technical Specification 6.11 required that procedures for radiation protection be prepared consistent with the requirements of 10 CFR 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

a. Control Measures

During plant tours, the inspector observed the use of temporary ventilation systems, containment enclosures, and respirators. The inspector discussed the use of this equipment with workers and radiation protection technicians. The inspector reviewed recent changes to respirator maintenance and issue procedures.

No violations or deviations were identified.

b. Uptake Assessment

The inspector observed the operation of the whole body counter and discussed its operation with the Dosimetry Supervisor. The inspector reviewed a licensee evaluation of an uptake which occurred in May 1985. Licensee representatives stated that the uptake occurred during work being performed on the steam generators during the last refueling outage. Personnel were entering the steam generator area through tents erected to control airborne radioactive material. The tents were constructed such that movement toward the steam generator manway would be from an area of lower to higher contamination. At some point during the work evolution, the low contamination tent became contaminated. A licensee representative stated that he was unsure when the uptake occurred but felt that it was during the time when the contract worker was removing his bubble suit. The individual frisked himself and found himself to be contaminated in the facial area. Health Physics personnel sent the individual to be whole body counted, and it was found that the maximum count was 7.63 percent of the maximum permissible body burden (MPBB). During the review of the licensee evaluation of this uptake, the inspector found that the licensee was not calculating maximum permissible concentration-hours (MPC-hrs) for cases of radioactive material ingestion. 10 CFR 20.103(a)(1) footnote 4 required that such intakes must be evaluated and accounted for by techniques and procedures as may be appropriate to the circumstances of the occurrence. Exposures so evaluated shall be included in determining whether the limitation on individual exposures in 20.103(a)(1) has been exceeded. Failure to have a procedure in place to ensure compliance with 10 CFR 20.103, Footnote 4, was identified as an apparent violation of Technical Specification 6.11 (50-302/85-34-01).

6. Maintaining Occupational Doses ALARA (83728)

10 CFR 20.1(c) specifies that licensees should implement programs to keep worker's doses ALARA. FSAR Chapter 12 also contains licensee commitments regarding worker ALARA actions.

a. Worker and Supervisor Actions

The inspector discussed dose control measures with three workers on the job and one maintenance supervisor to determine their degree of involvement in dose reduction. The inspector also discussed actions to set dose goals for tasks, methods used to reduce doses, and techniques used to monitor performance against goals.

b. ALARA Reviews

The inspector reviewed the ALARA review documentation for selected activities and discussed resulting actions with the ALARA Coordinator.

c. ALARA Reports

The inspector reviewed the ALARA Report for 1984 and the second quarter 1985 ALARA summary report and discussed the results with the ALARA Coordinator. The summary of tasks estimate for 1985 was 500 man-rems. The total cumulative dose for 1985 as of July 31 was 572.5 man-rems.

No violations or deviations were identified.

7. Control of Radioactive Materials and Contamination, Surveys, and Monitoring (83526)

The licensee was required by 10 CFR 20.201(b), 20.403, and 20.401 to perform surveys to show compliance with regulatory limits and to maintain records of such surveys. Chapter 12 of the FSAR further outlines survey methods and instrumentation. Technical Specification 6.8 required the licensee to follow written procedures. Radiological control procedures further outlined survey methods and frequencies.

a. Surveys

The inspector observed, during plant tours, surveys being performed by radiation protection staff. The inspector reviewed two radiation work permits, one for decontamination of equipment and one for operation of the cask loading system, to determine if adequate controls were specified. The inspector discussed the controls and monitoring with the radiation protection technician assigned. The inspector performed independent radiation level surveys.

During plant tours, the inspector observed radiation level and contamination survey results. The inspector performed independent radiation level surveys of selected areas and compared them to licensee survey results. The inspector reviewed selected survey records for the month of August 1985 and discussed with licensee representatives methods used to disseminate survey results.

b. Frisking

During tours of the plant, the inspector observed the exit of workers and movement of material from contamination control to clean areas to determine if proper frisking was performed by workers and that proper direct and removable contamination surveys were performed on materials. Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained for certain activities including applicable procedures in Appendix A of Regulatory Guide 1.33, 1972. Appendix A of Regulatory Guide 1.33, November 1982 requires procedures for surveys and monitoring. Chemistry and Radiation Protection Procedure RSP-101, Basic Radiological Safety Information and Instructions for Radiation Workers, required that a whole body frisk be performed when exiting the auxiliary building radiation controlled area (RCA). Specific guidelines for conducting a whole body frisk were

delineated in Section 3.3. The inspector observed licensee personnel exiting the auxiliary building RCA on August 27-29, 1985. The inspector used the criteria as stated in procedure RSP-101, Section 3.3. The inspector observed approximately 100 licensee personnel exiting the RCA at various times during the three day period. The largest sampling was on August 28, 1985, from 1100 hours to 1200 hours in which 73 licensee personnel were observed. Of this sampling, the inspector found that of the 73 personnel surveyed, 48 failed to perform an adequate frisk based on the licensee criteria in that, the operability of the frisker was not checked by any of the 73 personnel, the frisker probe was generally kept in contact with the skin, clothing and shoe surfaces, and the frisker probe was moved so fast that excessive contamination levels would have to be present in order for the instrument's audible response to indicate a need for additional frisking in that area. Also, the noise level in the frisking area due to equipment and crowd noise was such that licensee personnel could not readily detect an audible count rate increase.

The failure to comply with the procedural requirements of procedure RSP-101 that a whole body frisk be performed in accordance with the stated guidelines was identified as an apparent violation of Technical Specification 6.8.1 (50-302/85-34-02). This apparent violation was identified as being similar to Item 1 contained in a Notice of Violation sent to the licensee in a letter dated March 24, 1985.

8. Solid Waste (84722)

10 CFR 20.311 requires a licensee who transfers radioactive waste to a land disposal facility to prepare all waste so that the waste is classified in accordance with 10 CFR 61.55 and meets the waste characteristic requirements of 10 CFR 61.56. It further establishes specific requirements for conducting a quality control program and for maintaining a manifest tracking system for all shipments.

The inspector reviewed the following plant procedures for the packaging, classifying, and tracking of radioactive waste shipped to low-level waste burial facilities:

- WP-101: Packaging, Storing, and Shipping of Radioactive Materials
- WP-102: Radioactive Shipment Certificates of Compliance
- WP-110: Radioactive Waste Disposal Data Requirements
- WP-301: Radioactive Waste Solidification and Process Control Program (PCP)
- WP-401: Waste Compacting System
- CH-445: Radioactive Waste Handling and Disposal Reporting

The inspector reviewed the methods used by the licensee to assure that waste was properly classified, met the waste forms and characteristics required by 10 CFR 61 and met the disposal site license conditions and discussed the use of these methods with licensee representatives.

The inspector reviewed the licensee's storage of letdown filters in the radwaste building. The entrance to the storage room was controlled as a locked high radiation area. The room was divided by a 7 foot high shield wall which extended through the center of the room. Loading of radwaste liners and other radwaste work was carried out on one side of the shield wall. Letdown filters were stored on the opposite side of the wall. At the time of the inspection, the licensee had approximately 56 letdown filters stored in the area. Dose rates measured at the top of the shield wall approximately five feet from the filters was 3 Rem per hour. A magenta and yellow rope bearing high radiation area placards was attached to the shield wall.

The inspector discussed access controls to this area with licensee personnel. Licensee personnel stated that the large number of filters stored on site was due to a major crud burst which occurred prior to the outage in March 1985. The licensee is storing the letdown filters to allow decay so that the filters may be shipped as Class C type waste. A licensee representative stated that additional controls to notify personnel of the high dose rates in this area would be evaluated.

No violations or deviations were identified.

9. Licensee Audits and Surveillance (83722, 83723, 83724, 83725, 83726, 83728, 84722 and 86721)

The inspector reviewed selected audits from 1983 and 1984 related to radiation protection, radioactive waste management and transportation of radioactive material. The audits performed by Quality Assurance appeared comprehensive and thorough in scope.

No violations or deviations were identified.

10. Inspector Followup Items (92701)

(Closed) Inspector Followup Item (50-302/85-12-01) the licensee had taken action to insure the company physician reviewed and approved each employee's medical qualifications prior to the first use of respiratory protection equipment.

11. Solid Waste Statistics

During 1984 the licensee shipped 14,709.8 cubic feet of solid radwaste containing 1,144.81 Curies of activity. The solid radwaste target volume for 1985 is 19,000 cubic feet. As of August 26, 1985, approximately 10,537.5 cubic feet of radwaste containing 3,862 Curies of activity had been shipped by the licensee.