



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N.W. SUITE 1217
ATLANTA, GEORGIA 30303

Report No. 50-302/77-8

Appendix E

Docket No. 50-302

License No. DPR-72

Licensee: Florida Power Corporation
P. O. Box 14042
St. Petersburg, Florida 33733

Facility Name: Crystal River Unit 3

Inspection at: Crystal River Site, Crystal River, Florida

Inspection conducted: May 2-6, 1977

Inspector: G. L. Troup, Radiation Specialist

Reviewed by:

A. F. Gibson

A. F. Gibson, Chief, Radiation Support Section
Fuel Facility and Materials Safety Branch

5/27/77
Date

Inspection Summary

Inspection on May 2-6, 1977 (Report No. 50-302/77-8)

Areas Inspected: Routine, unannounced inspection of radiation protection and radioactive waste management including startup radiation surveys; startup test results; compliance with chemistry and effluent limits during startup, calibration of effluent monitors; qualifications of new Chem/Rad technicians; external exposure control; posting, labeling and control; reports; and follow-up on previously identified items. The inspection involved 32 inspector-hours on site by one NRC inspector.
Results: Of the nine areas inspected, no items of noncompliance or deviations were found in eight areas; one deviation was found in one area (radioactive solid waste packaging system - paragraph 4).

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DETAILS I

Prepared by:

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 G. L. Troup, Radiation Specialist
 Radiation Support Section
 Fuel Facility and Materials
 Safety Branch

5/27/77
 Date

Dates of Inspection: May 2-6, 1977

Reviewed by:

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 Radiation Support Section
 Fuel Facility and Materials
 Safety Branch

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1. Persons Contacted

- *G. P. Beatty, Jr. - Nuclear Plant Superintendent
- *J. C. Hobbs, Jr. - Manager, Generation Testing
 - W. R. Nichols - Operations Supervisor
- *J. R. Wright - Chemical and Radiation Protection Engineer
- *J. L. Harrison - Assistant Chemical and Radiation Protection Engineer
- *G. D. Perkins - Health Physics Supervisor
 - D. H. Ruzic - Results Engineer
- *D. W. Pedrick, IV - Compliance Engineer
 - T. C. Lutkehaus - Maintenance Engineer
 - W. A. Cross - Plant Engineer
 - R. E. Fuller - Plant Engineer
 - M. E. Collins - Plant Engineer
 - J. E. Barrett - Plant Engineer
 - G. H. Ruzala - Test Engineer
 - H. B. Lucas - Administrative Supervisor

The inspector also talked with and interviewed other licensee employees, including compliance auditors and chemistry and radiation protection technicians.

* denotes those attended the exit interview.

2. Licensee Action on Previous Inspection Findings

(Open) Noncompliance (50-302/77-4): Failure to use written procedures to perform surveillance tests required by the Technical Specifications. At the time of the inspection the official reply to this item had not been received. The inspector reviewed a draft copy of the reply and discussed the corrective actions with the cognizant licensee representatives. Corrective actions had been initiated but were incomplete. This item remains open pending completion of corrective actions.

3. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Two new unresolved items were identified during this inspection:

77-8/1 Maintenance of Effluents Records

The record copies of liquid radioactive effluent discharge permits are incomplete and lack data required by plant procedures. (paragraph 7)

77-8/2 Documentation of Valve WDV-857

A temporary valve has been installed in the waste gas system which has not been documented to meet the established requirements for the valve (paragraph 8).

4. Radioactive Solid Waste Packaging System

- a. FSAR Section 11.2.5 states, in part, "the solid waste packaging system has been designed to facilitate the packaging of all radioactive solid wastes for storage, offsite shipment, and disposal in accordance with the applicable regulations." FSAR Section 11.2.5.1 states that the system provides the capability of processing evaporator concentrates. The inspector had inspected the installation of the solid waste packaging system during the construction phase. In IE Report No. 50-302/76-17, Details I, paragraph 5a, the solidification system and procedures to control the solidification of waste were identified as an item requiring additional licensee action. In IE Report No. 50-302/77-2, Details II, paragraph 8.b, it was discussed that the licensee had not established the operating parameters and procedures for the solidification of waste and that a contractor would perform any necessary solidification until the plant solidification system is operable.
- b. The inspector discussed the status of the solid waste packaging system with licensee representatives and determined that the system for processing evaporator bottoms is not operable. The operating parameters for solidification have not been established and the procedures for solidification have not been prepared. The solidification and offsite shipment of evaporator bottoms is being performed by a contractor. A licensee management representative advised the inspector that it was not known when the solid waste packaging system would be operable.

- c. The inspector informed licensee management that this was considered to be a deviation from the FSAR in that the system does not meet the performance capabilities as described in FSAR Section 11.2.5. A licensee management representative acknowledged this item and stated that this would be reviewed to determine the necessary actions to make the system operable.

5. Startup Radiation Surveys

Test procedure TP 7-2-850-1, "Biological Shield Survey" specifies the special survey to be performed to assess the adequacy of the biological shield, as specified in FSAR Tables 13-3 and 13-4. The inspector reviewed the completed procedure and verified that the measurements were taken at the specified power levels, that measurements of the specified type were taken at specified locations, that special instrument calibrations were performed as required by the procedure and that those areas which did not meet the acceptance criteria had been identified. The inspector discussed the test results with the cognizant supervisor concerning the corrective and followup actions for those areas which did not meet the acceptance criteria and reviewed the temporary actions taken for those areas. The cognizant supervisor advised the inspector that the procedure was complete and was being submitted for review and approved by TWG and PRC. The inspector had no further questions.

6. Power Ascension and Operations Chemistry Tests

- a. Technical Specifications sections 3.4.7 and 3.4.8 specify the limits for reactor coolant chemistry and specific activity, respectively. Surveillance requirements and frequencies are specified in Table 4.4-3 for chemistry and Table 4.4.4 for specific activity. The inspector reviewed the reactor coolant chemistry records for the period April 14-23, 1977 to determine that the required analyses were performed at the specified frequencies. No discrepancies were noted.
- b. Technical Specifications Table 4.4-4 requires that an isotopic analysis for dose equivalent iodine-131 be performed once per 14 days during power operations and an isotopic analysis for iodine be performed between two and six hours following a power change exceeding 15% of rated power within a one hour period. The inspector reviewed the chemistry records and verified that the dose equivalent iodine-131 determination was done at the required frequency and during power changes for the period April 14-23, 1977. The inspector had no further questions.

- c. The inspector reviewed the following power ascension test procedures and ascertained that the required sampling and analyses were performed at the specified power levels, that the data were being recorded as specified and that water quality was being controlled as specified:

TP 7 2 500 1 Reactor Coolant Chemistry Test
TP 7 2 500 2 Steam Generator Chemical Test
TP 7 2 500 3 Initial Radiochemistry Test

The inspector discussed these test procedures with the responsible engineer and verified that the test objectives had been met and that the procedures were being submitted for review and approval in accordance with the test program requirements. The inspector had no further questions.

7. Radioactive Effluents

- a. The inspector reviewed the liquid and gaseous radioactive effluent records to verify compliance with the quantity limits in Environmental Technical Specifications sections 2.4.1.b and 2.4.1.c for liquids and sections 2.4.2.b(5) and 2.4.2.b(6) for gases. Quantities discharged were within the prescribed limits. The inspector also performed the calculations for two waste permits to verify compliance with Environmental Technical Specifications section 2.4.2A. The inspector had no further questions.
- b. In reviewing the record copies of liquid waste discharge permits the inspector noted that data appeared to be missing from the permit packages. A licensee representative had conducted a review of the permits and identified the missing data of the procedures. The inspector selected thirty-six permits, and reviewed the licensee's resume of the permits. Of the thirty-six permits, the licensee had found one was satisfactory, three permits were missing completely and the remaining thirty-two were incomplete in one or more areas. The inspector informed licensee management that this was an unresolved item. Licensee management acknowledged this item and stated that the data was available in other documents and the permits would be completed as required. Licensee management further stated that the missing permits were apparently misfiled and an attempt would be made to locate them.
- c. The inspector reviewed the effluent monitor calibrations and discharge valve operability checks to verify compliance with Environmental Technical Specifications Sections 2.4.1.E and

2.4.1.N for liquids and Sections 2.4.2.D and 2.4.2.I for the waste gas discharge line. The inspector had no further questions.

8. Documentation of Valve WDV-857

- a. In IE Report No. 50-302/76-14, Details I, paragraph 4.b, it was discussed that a pressure reducing valve was to be installed in the waste gas discharge line upstream of radiation monitor RM-All to prevent overpressurizing the monitor. This valve was designated as WDV-857. During preoperational testing, a temporary valve was installed pending receipt of a valve which met the design specifications and for which documentation was available.
- b. During a plant tour the inspector noted that the "temporary" tag had been removed from WDV-857 and asked a licensee representative if the temporary valve had been replaced with the permanent valve. The licensee representative informed the inspector that the temporary valve was still installed.
- c. The inspector informed licensee management that this was an unresolved item based on the installation of a valve which cannot be documented as meeting the design specifications. This was acknowledged by licensee management who stated that this matter would be investigated.

9. External Exposure Control

- a. The inspector reviewed the licensee's program for external exposure control, including review of procedures and records, discussions with personnel and observation of practices. Specific areas inspected were: (1) permissible doses of 10 CFR 20.101a; (2) exposure records required by 10 CFR 20.401.a. The inspector discussed the retention of exposure data on NRC form 5 or equivalent as required by 10 CFR 20.401a. The licensee maintains the records on computer tapes and updates the files from a contractor's monthly input after the TLD's are read. The inspector made comments to a licensee representative regarding the retrievability of the exposure data from the computer files. These comments were acknowledged by licensee representative who stated that a computer printout with the exposure data would be periodically filed in the individual exposure files to assure that the exposure data was available and accessible. The inspector had no further questions.

- b. 10 CFR 20.101b permits an individual to receive extended doses provided a Form NRC-4 is completed and an exposure history is obtained. The inspector reviewed selected personnel exposure records for individuals who had been authorized to receive extended doses and verified that a completed Form NRC-4 was on file with an exposure history. The inspector had no further questions.

10. Posting, Labeling and Control

- a. 10 CFR 20.203e and 10 CFR 203f specify the posting and labeling requirements for radioactive materials areas and containers, respectively. The inspector observed areas in the plant containing radioactive materials (such as the radiochemistry laboratory, health physicist's service room, solid waste packaging area and source cage) and verified that these areas were posted as required, and the containers for radioactive materials were labeled. The source cage was posted as a radiation area but apparently was not posted as a radioactive materials area. After discussions with the cognizant supervisor the inspector verified that a sign was hanging inside the entrance but this had been obscured when opaque plastic was installed on the cage walls. Radioactive materials signs were then placed on the entrance door and side of the cage. The inspector had no further questions.
- b. 10 CFR 20.207 specifies the requirements for the storage and control of licensed materials in unrestricted areas. During the inspection the inspector observed no radioactive material stored in unrestricted areas. The inspector also discussed the storage of licensed material with the cognizant supervisor, who confirmed that licensed materials were not stored in unrestricted areas. The inspector had no further questions.
- c. 10 CFR 19.11 requires the posting of form NRC-3 and various documents or a notice stating where the documents may be examined. The inspector observed that form NRC-3 and a notice to workers stating where the documents may be examined were posted at the entrance to the radiation controlled area and at other locations in the plant. The inspector had no further questions.

11. Reports to the NRC and Individuals

- a. 10 CFR 20.405 and 10 CFR 20.408 require that the licensee submit reports to the NRC for overexposures to radiation or radioactive materials and upon termination of work, respectively.

The inspector discussed the exposure records with the cognizant supervisor and reviewed the exposure records for calendar year 1976 and the first calendar quarter of 1977. From the records the inspector established that no persons had received exposures in excess of the limits of 10 CFR 20.101 and, consequently, no over exposure reports were required. The inspector also reviewed the personnel exposure files for individuals who had terminated work assignments at the plant and verified that the termination reports had been sent to the NRC within the time limit set in 10 CFR 20.408 or were in preparation for persons who had terminated recently. The inspector had no further questions.

- b. 10 CFR 19.13 requires that when reports are sent to the NRC in accordance with 10 CFR 20.405 or 10 CFR 20.408, a copy of the report shall be sent to the individual at the same time that the report is sent to the NRC. The inspector determined that no overexposure reports to individuals were required. The inspector reviewed the personnel exposure files. For individuals who had terminated work assignments at the plant and verified that the termination reports had been sent to the individuals at the same time that the reports had been sent to the NRC or were in preparation for persons who had terminated recently. The inspector had no further questions.

12. Plant Tour

- a. The inspector walked through various areas of the plant to observe operations and activities in progress to inspect the general state of cleanliness and housekeeping, to observe posting and control of radiation and contamination areas and to review the status of various annunciators which were lit and meter readings in the control room.
- b. The inspector noted that the housekeeping at the access point to several contamination control areas had deteriorated from previous inspections. Shoe covers were observed strewn around the access point or overflowing the receptacle. In some cases no receptacle was provided for used shoe covers. General housekeeping in the solid waste packaging area was also observed to need improvement. Packaged waste in the area was apparently the cause of high background reading observed for the liquid waste discharge monitor (RM-L2).
- c. The number of contamination control areas had increased significantly since the last inspection. A licensee representative informed the inspector that these were due primarily to valve

leaks but, in some cases, were due to tanks overflowing or runoff into floor drains. Cleanup operations in passageways were in progress.

- d. No items of noncompliance were observed. The inspector discussed the condition of housekeeping and cleanliness at the exit interview.

13. Qualifications of Chemistry and Radiation Protection Technicians

Technical Specifications section 6.3.1 states that each member of the facility staff shall meet or exceed the qualifications specified in ANSI N 18.1-1971. Paragraph 4.5.2 of ANSI N18.1-1971 states, in part, "Technicians in responsible positions shall have a minimum of two years working experience in their speciality." Since the issuance of the operating license, two former assistant technicians were promoted to technician. The inspector reviewed the resumes of the two individuals and discussed their training, work and experience with the cognizant supervisor. The inspector had no further questions concerning their qualifications or compliance with ANSI N18.1-1971.

14. Exit Interview

- a. The inspector met with licensee representative (denoted in para. 1) at the conclusion of the inspection on May 6, 1977. The inspector summarized the scope and findings of the inspection. The licensee representatives made the following comments in response to certain of the items discussed by the inspector:
 - (1) Acknowledged the statements by the inspector with respect to the deviation on the solid waste packaging system (paragraph 4).
 - (2) Acknowledged the unresolved items (paragraph 7 and 8).
 - (3) Acknowledged the comments on cleanliness and housekeeping and stated that action would be taken to improve housekeeping and cleanup contamination areas. (paragraph 12).
- b. The inspector also discussed the status of some preoperational test procedures which are incomplete although power ascension testing program is basically complete. The FSAR describes the preoperational testing program as proving the integrity and function of systems. The inspector stated that tests to prove the integrity of a system should have been completed prior to the start of the power ascension program, not after. The licensee representatives acknowledged these comments and stated that the outstanding preoperational tests would be reviewed and action taken close out these tests.