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

MAY 19 1988

Report No.: 50-302/88-12

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: April 11-15, 1988

Inspector: for Roy C Weddington 5/18/88
T. R. Collins Date Signed

Accompanying Personnel: M. T. Lauer

Approved by: for Roy C Weddington 5/18/88
C. M. Hosey, Section Chief Date Signed
Division of Radiation Safety and Safeguards

SUMMARY

Scope: This was a routine, unannounced inspection which involved review of previously identified inspector followup items and enforcement matters, external exposure control, internal exposure control, control of radioactive material, the program to maintain exposures as low as reasonably achievable (ALARA), solid wastes, transportation and followup of NRC Information Notices.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*J. Alberdi, Manager, Nuclear Technical Support
*P. Breedlove, Records Management Supervisor
*M. Collins, Nuclear Safety and Reliability Superintendent
*A. Gelston, Site Nuclear Energy Services Supervisor
*B. Hickle, Manager, Nuclear Plant Operations
*S. Horveth, ALARA Specialist
*M. Jacobs, Area Public Information Coordinator
*W. Lagger, Health Physics Supervisor
*J. Lolby, Manager, Nucler Mechanical/Station Energy Services
*K. Lancaster, Manager Site Nuclear QA
*G. Longhouser, Nuclear Security Superintendent
*W. Marshall, Operations Superintendent
*S. Robinson, Chemistry and Radiation Superintendent
*V. Roppel, Manager, Nuclear Maintenance and Outages
*W. Rossfeld, Manager, Nuclear Compliance
*D. Wilder, Radiation Protection Manager
*M. Williams, Nuclear Regulatory Specialist
*K. Wilson, Manager, Nuclear Licensing
*R. Wittman, Nuclear Operations Superintendent

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

NRC Resident Inspectors

T. Stetka, Senior Resident Inspector
*J. Tedrow, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 15, 1988, with those persons indicated in Paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters (92702)

(Closed) Violation (50-302/87-29-01) Failure to Maintain Adequate Records to Implement the Approved Respiratory Protection Program. The inspector reviewed and verified the implementation of the corrective actions stated in Florida Power Corporation letter of November 20, 1987.

4. Organization and Management Controls (83722)

The licensee is required by Technical Specification (TS) 6.2.2 to implement the station organization as shown in the Final Safety Analysis Report (FSAR), Chapter 13.

The inspector discussed with licensee representatives the organization of the site health physics (HP) group including the organizational structure and staffing, staffing stability, and effectiveness of procedures and other management techniques used to implement the radiation protection program. The inspector noted that the current HP organizational structure and staffing was not the same as required by TS 6.2.2, Amendment No. 57. The licensee informed the inspector that they had requested a Technical Specification Change Request No. 103, Revision 4, dated August 18, 1987, to the NRC Office of Nuclear Reactor Regulations (ONRR) to change the facility organization as given by TS 6.2.2. This change request had not yet been approved by ONRR; however, the licensee had submitted the change request in accordance with Generic Letter 88-06, issued by the NRC, dated March 22, 1988, which allowed licensees to remove organizational charts from TS administrative control requirements (Section 6.0) as long as the guidance in the Generic Letter 88-06 was followed for license amendment requests to remove organization charts from TS.

The inspector reviewed the licensee's TS change request and exemption request from the requirement of 10 CFR 50.36(c)(4) and (5) as required by the NRC's Generic Letter 88-06 and concluded that the licensee had met the requirements to change or remove the organizational charts from TS 6.2.2.

No violations or deviations were identified.

5. Training and Qualification (83723)

a. Radiation Protection Technician Qualification

The licensee was required by TS 6.3 to qualify radiation protection technicians in accordance with ANSI N18.1-1971. The inspector reviewed the training and qualifications of one recent ANSI N18.1-1971 qualified radiation protection technician and concluded this individual met the requirements of ANSI N18.1-1971, Section 4.5.2, which requires the individual to have a minimum of two years of working experience and one year of related technical training.

b. General Employee Training (GET)

The inspector discussed the GET training program with licensee representatives and concluded through review of lesson plans that the GET training program met the requirements of 10 CFR 19.12. Licensee representatives stated that GET currenlty includes a lessons learned section in which health physics incidents occurring throughout the industry are discussed. The inspector also selectively reviewed training records of licensee personnel and verified that these personnel had attended the initial and requalification GET training program as required.

No violations or deviations were identified.

6. External Exposure Control and Dosimetry (83724)

The licensee is required by 10 CFR 20.101 and 20.102 to maintain workers doses below specified levels. The inspector reviewed the personnel exposure results for the first quarter of 1988 and determined that the highest exposure for the first quarter ending March 31, 1988, was 511 millirem (mR) whole body, 467 mR extremity and 242 mR skin. These exposures were well below the NRC quarterly limits.

The inspector was informed by licensee representatives that currently they are planning a pilot program to assess the feasibility of replacing personnel pocket ion chambers (PICs) with "Alarming Electronic Dosimeters" (AEDs). The AEDs integrate dose and have an alarm function which monitors dose and dose rate. All of this data is stored in the AEDs and may be electronically read and automatically added to the workers quarterly dose totals. The licensee is evaluating the use of the AEDs to be a part of a planned computerized access control system to the Radiation Controlled Area (RCA) for controlling personnel radiation exposures.

The inspector reviewed Procedure HPP-306, Occupational Radiation Exposure Calculations, Revision 1, dated November 25, 1986, and noted that VARSKIN methodology is not used to calculate skin dose from hot particles. However, licensee representatives stated that this procedure is currently under revision and will incorporate VARSKIN methodology. Through a review of documented personnel skin contamination reports the inspector determined that the licensee is currently calculating dose from hot particles using VARSKIN and the old method. The more conservative result is then assigned as the "official" dose. Once the draft revision is finialized only VARSKIN will be used.

The inspector reviewed the computer code used to track individual dose at the site and verified that discrepancies between Personnel Ion Chambers (PICs) dose data and Thermoluminescent Dosimeters (TLDs) dose data is "flagged" if the PIC is 20% less than or 40% greater than the TLD value. The inspector determined that their had only been three (3) dose discrepancies for the first quarter of 1988. Investigation of these discrepancies was adequate and properly documented.

The inspector also reviewed the "Plant Margin Report" which is updated daily and contains individual yearly, quarterly, and weekly dose totals for all badged individuals who receive dose and verified that no values exceeded administrative or regulatory limits.

Use of extremity dosimetry for specified jobs was discussed with the licensee. Licensee representatives stated that procedures require extremity dosimetry when contact dose rates are six (6) times the ambient whole body dose rates, however, extremity dosimetry is usually employed at lower ratios.

No violations or deviations were identified.

7. Internal Exposure Control and Assessment (83725)

The licensee is required by 10 CFR 20.103, 20.201(b), 20.401 and 20.405 to control intakes and keep records of and make reports of such intakes. FSAR Chapter 12, includes commitments regarding internal exposure control and assessment.

During plant tours the inspector observed the use of contamination containment structures and high efficiency particulate air (HEPA) filtration systems for the control of airborne radioactivity. Licensee representatives stated that year-to-date approximately 33 individuals had whole body count results of greater than 1 percent maximum permissible organ burden. Maximum Permissible Concentration (MPC) - hour logs were reviewed for the first quarter of 1988, and no individuals had quartely intakes greater than 20 MPC-hours.

Also, during tours of the facility the inspector observed the use of supplied air manifolds and verified that the flow measuring device on the manifolds were calibrated to assure proper air flow-rates as required by 10 CFR 20, Appendix A, Footnote H.

The inspector selectively reviewed RWPs for the period of March 1, 1988 to April 15, 1988, which required respiratory protection equipment and verified that adequate air samples were conducted prior to and during these tasks. The inspector also verified that the individuals who were issued respirators under these RWPs had the required respiratory training, medical examinations, whole body counts, and fit tests.

No violations or deviations were identified.

8. Control of Radioactive Materials and Contamination, Surveys and Monitoring (83726)

10 CFR 20.201(b) 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 radiation hazards that may be present.

The inspector reviewed selected records of routine radiation and contamination surveys performed during the period of March 1, 1988 to April 15, 1988. Survey records reviewed were adequate and indicated that surveys were performed at the required frequencies.

During tours of the facility the inspector observed health physics technicians performing radiation and contamination surveys of personnel and equipment. The inspector determined by observation that materials being released for unrestricted use were surveyed as required.

The inspector also reviewed selected RWPs for the first quarter of 1988, and determined by review of survey records that appropriate radiation and contamination surveys were performed to evaluate the extent of the radiation hazards that were present and that adequate controls were specified.

The inspector observed personnel using the personnel frisker (RM-14 with HP-210 pancake probe) to perform contamination surveys of themselves while inside the Radiation Controlled Areas (RCA). The inspector also observed personnel performing contamination surveys of themselves using the PCM-1Bs, Personnel Contamination Monitors, while exiting the RCA.

During the inspection, current radiation survey instrumentation calibration and performance check program implementation was reviewed. The inspector discussed with cognizant health physics technicians selected survey instrumentation calibration as detailed in HPP-406, Radiation Protection Instrumentation Calibration Procedures. Calibrations, response checks, and sensitivity limits as required by procedures for selected survey instrumentation in use by plant personnel were reviewed.

The inspector reviewed Radiation Safety Incident Report (RSIR) #88-0013, dated March 21, 1988, which involved the discovery of a contaminated wrench within a machine located outside the protected area (PA) and the RCA specifically, in the "Fluor AW Fab Shop." Two areas on the wrench had 1000 dpm/smear of smearable Cs-137 contamination. The licensee believes the wrench had been hidden from view in the machine since 1982, when the machine was removed from the RCA. Licensee representatives stated that current RCA material release procedures would have prevented this incident which actually occurred in 1982. The inspector requested licensee health physics personnel to perform radiation surveys using mirco R meters of selected areas outside the RCA. The inspector accompanied licensee personnel during these surveys. Areas surveyed included posted and controlled areas within the PA and tools and equipment warehouses outside the PA. The survey results were consistent with area postings and licensee controls for the areas. A review of other RSIRs (a total of 16) written in 1988, showed no related concerns.

The inspector discussed with the Radiation Protection Manager (RPM) the total contaminated area within the RCA. The inspector was informed that approximately 7,500 square feet (ft^2) out of 66,100 ft^2 was considered contaminated, which is 11.3% of the RCA. The licensee had not set a goal

for 1988, to further reduce the total contaminated area inside the RCA, other than maintain the area which is now considered radiologically clean due to ALARA considerations and that the remaining areas were not accessed on a routine basis.

No violations or deviations were identified.

9. Maintaining Occupational Exposures ALARA (83728)

10 CFR 20.1(c) specifies that licensees should implement programs to keep worker's doses as low as reasonably achievable (ALARA). The recommended elements of an ALARA program were contained in Regulatory Guide 8.8, Information Relevant to Ensuring that Occupational Exposure at Nuclear Power Stations will be ALARA, and Regulatory Guide 8.10, Operating Philosophy for Maintaining Occupational Exposures ALARA.

Licensee representatives stated that management commitment to the ALARA program implementation came from the highest corporate and plant management levels. Procedural guidance detailing the licensee's ALARA program was outlined in Administrative Instruction (AI) 1600, ALARA Program Manual, dated June 17, 1986. The Site Nuclear Services ALARA Specialist was responsible for overseeing the plant ALARA program. The ALARA specialist responsibilities included: (1) interfacing with the Director, Nuclear Plant Operations to ensure ALARA is maintained in daily plant activities; (2) reviewing any planned task that may expend more than one man-rem; (3) reviewing collective dose to determine success of ALARA goals, and issuing selected reports and evaluations; (4) evaluating plant ALARA data and making recommendations as appropriate. As part of the post job ALARA review, the ALARA specialist compared exposure estimates with the dose received determined by TLD. This helped to assure the continued accuracy of exposure estimations.

Management was routinely apprised of station exposure for each departmental section. The highest collective man-rem exposures for 1986 and 1987, were reported for the health physics and system maintenance departments. The 1987 data showed 81.8 and 79.7 man-rem for the two groups, respectively.

The inspector discussed the ALARA goals and objectives for 1987, and reviewed man-rem estimates for 1986 and 1987. The man-rem goal for 1987, was 350 man-rem, the actual expended dose for 1987, was 487 man-rem. The additional 137 man-rem expended for 1987, was primarily due to a four week extension on the fall 1987 refueling outage. Initially the fall 1987 outage man-rem goal was set at 291 man-rem, however, a total of 420 man-rem was expended. The licensee believed poor planning and scheduling of specific tasks prior to the refueling outage created the need to extend the outage. The inspector was informed that the licensee had reorganized their planning and scheduling organization to provide additional support to their staff in planning and scheduling task for future outages, which should be instrumental in reducing man-rem exposures.

The licensee's 1988 man-rem goal is 50 man-rem. Through April 12, 1988, the licensee has expended 17.0 man-rem.

No violations or deviations were identified.

10. Solid Wastes (84722)

10 CFR 20.311(d)(1) requires that any generating licensee who transfer radioactive waste to a land disposal facility prepare all wastes so that the waste is classified according to 10 CFR 61.55 and meets the waste characteristics requirements in 10 CFR 61.56.

The inspector discussed with licensee representatives their program of waste stream sampling in order to develop waste classification scaling factors. The licensee obtained quarterly samples of the following waste streams: RCS liquid, composite RCS filtered and, spent fuel pool liquid and miscellaneous waste storage tank liquid. In order to classify dry active waste (DAW), composite smears were taken in plant areas from which waste was generated, on noncompactable waste being placed into disposal packages and on the drum compactor ram. Samples were sent to a contractor laboratory for analysis on an annual basis. The remaining three quarterly samples were retained in case additional analyses were required. The inspector reviewed waste classification determinations filed with selected shipping records for the period of October 1, 1987 to April 1, 1988, and no abnormal values were observed.

The licensee ensured waste stability through use of either high integrity containers (HICs), by solidification using an onsite vendor operated process, or by licensee approved process control procedures.

No violations or deviations were identified.

11. Transportation of Radioactive Material (86721)

10 CFR 71.5 requires that each licensee who transports licensed material outside the confines of its plant or other place of use, or who delivers licensed material to a courier for transport, shall comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation (DOT) in 49 CFR Part 170 through 189.

The inspector selectively reviewed radioactive shipment records of waste shipped for burial for the period of October 1, 1987 to April 1, 1988. These wastes consisted of compacted dry active waste and dewatered resin in high integrity containers.

No violations or deviations were identified.

12. NRC Information Notices (92717)

The inspector determined that the following NRC Information Notices (INs) had been received by the licensee, reviewed for applicability, distributed to appropriate personnel and that actions, as appropriate, were taken or scheduled.

a. IN 87-13: Potential for High Radiation Fields Following Loss of Water From Fuel Pools

b. IN 88-08: Chemical Reactions With Radioactive Waste Solidification Agents