



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

Report No. 50-302/79-54

Licensee: Florida Power Corporation
 St. Petersburg, Florida 33733

Facility Name: Crystal River Unit 3

Docket No. 50-302

License No. DPR-72

Inspection at Crystal River Site near Crystal River, Florida

Inspector: *S. C. Ewald*
 S. C. Ewald

1/10/80
 Date Signed

J. M. Puckett
 J. M. Puckett

1/10/80
 Date Signed

Approved by: *A. F. Gibson*
 A. F. Gibson, Section Chief, FF&MS Branch

1/15/80
 Date Signed

SUMMARY

Inspection on December 17-19, 1979

Areas Inspected

This routine, unannounced inspection involved 50 inspector-hours onsite in the areas of radioactive material transportation, high radiation area control, and contaminated material controls and facility tours.

Results

Of the four areas inspected, no apparent items of noncompliance or deviations were identified in one area; three apparent items of noncompliance were found in three areas (Infraction - failure to lock or adequately lock high radiation areas (79-54-01) paragraph 9; Infraction - failure to review seismic effects of lead shielding on Make Up System piping (79-54-02) paragraph 10; Deficiency - posting and labeling of contaminated material (79-54-03) paragraph 11).

DETAILS

1. Persons Contacted

Licensee Employees

- *D. C. Poole, Nuclear Plant Manager
- *J. R. Wright, Chemical and Radiation Protection Engineer
- *J. Cooper, Jr., QA/QC Compliance Manager
- *P. F. McKee, Operations Superintendent
- *G. H. Ruzsala, Radwaste Management Supervisor
- *R. E. Fuller, Plant Engineer
- *G. D. Perkins, Health Physics Supervisor
- *B. E. Crane, Planning Engineer
- *G. L. Boldt, Technical Support Engineer
- *J. L. Bufe', Nuclear Compliance Auditor
- J. R. Kraiker, Shift Supervisor

Other licensee employees contacted included eight technicians and three operators.

*Attended exit interview.

2. Exit Interview

The inspection scope and findings were summarized on December 19, 1979, with those persons indicated in Paragraph 1 above. Items discussed included contaminated material control, high radiation area controls, use of lead shielding on operational safety systems, and radioactive material transportation. With regard to the item of noncompliance dealing with adequacy of high radiation area locks, licensee management representatives disagreed that the lock deficiencies constituted noncompliance in that a conscious effort to defeat the lock would be required to gain access. With regard to the licensee response to NRC Bulletin 79-19, licensee management agreed to submit promptly a statement addressing chem/rad staff periodic retraining in radwaste shipping as requested in the bulletin. With regard to the item concerning resin liner dewatering, licensee management agreed, in telephone conversations on December 21, to restrict shipment of dewatered resin liners until procedures assuring the capability to meet free standing water limits are developed and implemented. The inspectors emphasized the purpose of this inspection was to review the licensee's response to IE Bulletin 79-19 and that the additional findings in this report are the result of a casual tour of the radiation controlled area, rather than a specific inspection goal. This was pointed out to licensee representatives throughout the inspection as well as in the exit interview with the intent of ensuring the licensee is aware of the need for continuing and persistent surveillance by all involved licensee personnel to ensure controls for contaminated material and the associated posting and labeling requirements of 10 CFR 20.203 and the licensee's Technical Specifications are maintained.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve noncompliance or deviations. New unresolved items identified during this inspection are discussed in Paragraph 8.

5. Bulletin 79-19

An inspector reviewed the licensee's response of September 24, 1979, to IE Bulletin 79-19, "Packaging of Low Level Radioactive Waste for Transport and Burial". The inspector verified the licensee had current copies of NRC and DOT regulations as well as current burial facility licenses. An inspector reviewed procedures relating to solid waste transportation including radiation protection procedure RP-209, "Packaging, Storing, and Shipping of Radioactive Waste" approved October 11, 1979. The inspectors had one comment with regard to free standing water. This is discussed further in Paragraph 6. An inspector reviewed records of training for chem/rad staff and had no questions. Training for non-chem/rad staff is discussed in Paragraph 8. With regard to the licensee response to Bulletin 79-19 request for training of chem/rad technicians, the inspector noted no discussion of retraining was included. The inspector requested licensee management representatives to submit, as requested by Bulletin 79-19, a schedule or plan of action for providing periodic retraining to chem/rad staff in the area of solid radioactive waste. Licensee management representatives agreed to submit this information promptly. The inspector had no other questions with regard to the licensee's written response to IE Bulletin 79-19.

6. Free Standing Water in Packaged Radioactive Waste

The inspectors discussed with chem/rad personnel the requirement contained in the South Carolina waste disposal license for "no free-standing water" in dewatered resin liners. The licensee representatives stated they could not positively ascertain that there was no more than one percent water remaining in the shipping liners because the constructor and vendor of the cask liners, Chem-Nuclear Systems Inc., will not reveal their construction and maintains this information is proprietary. The dewatering procedure used by the licensee is also a Chem-Nuclear procedure and its adequacy to assure free water limits are met was questioned by personnel from the chem/rad department.

An inspector informed licensee representatives that a procedure step with a sign-off would be necessary to ensure that adequate dewatering had been accomplished prior to the shipment of dewatered resin liners for burial. The inspectors also asked the Plant Manager for a commitment to not ship dewatered resin until chem/rad department personnel were satisfied the

burial license requirements could be positively met and the procedural change had been made. The plant manager was unwilling to make this commitment, but did instruct the Health Physics Supervisor and Rad Waste Supervisor to inform him prior to any dewatered resin shipment.

In a telephone conversation to the Plant Manager from RII staff on December 21, the plant manager did state that no dewatered resins will be shipped until procedural controls are developed and approved that will assure the free standing water criteria of the South Carolina Burial License are met. The inspector stated that adequacy of revised dewatering procedures would be reviewed during subsequent inspections (79-54-06).

7. Quality Assurance

10 CFR 71.51(a) requires as NRC approved QA program be executed with regard to shipment of greater than Type A quantities of radioactive material. 10 CFR 71.51(d) states execution of a licensee's approved QA program meeting the criteria of 10 CFR 50 Appendix B satisfies this requirement. Discussions with licensee representatives indicated the 10 CFR 50 QA program has been implemented with respect to solid waste. An inspector reviewed QA Audits QP-164 (2/28/79) and QP-185 (10/8/79) of solid waste shipments. The audits consist of a review of procedure adequacy and records for compliance with procedures. No items of noncompliance were identified.

8. Package Inspection and Training

- a. An inspector requested a 55-gallon drum of compacted solid waste be opened and its contents examined. A drum was chosen at random from a number of drums awaiting shipment. The surface dose rate was a maximum of 6 mrem/hr. The drum was opened by a chem/rad technician in a tent to provide ventilation and contamination control. In addition, the technician used a supplied air hood for respiratory protection. The inspector observed the package opening and contents thru a window in the tent. Examination of the drum contents revealed a large majority of the material to be compacted cardboard boxes. In addition, several dozen cloth gloves were also found.
- b. The inspector discussed the contents of the drum with licensee representatives and stated it appeared a substantial reduction in solid waste could be achieved. Closer attention to minimizing generation of solid waste such as reducing amounts of noncleanable material (cardboard) taken into contaminated areas and segregation of launderable material and trash could have eliminated the largest portion of material in the examined drum. Licensee representatives acknowledged the inspectors comments and stated that disposal of protective clothing in trash containers at step-off pads has been a chronic problem. The inspector stated that placing more emphasis on minimization of solid waste during general employee training might be beneficial.
- c. The inspector discussed general employee and operator training with licensee representatives. The licensee response to IE Bulletin 79-19

implied training and retraining is administered for licensed and nonlicensed personnel covering appropriate aspects of procedure RP-209 (see Paragraph 5). The inspector questioned whether this material included discussions of waste minimization. The inspector was unable to find any indication in course outlines or syllabuses that solid waste reduction had been discussed, however, the Training Supervisor was not available during the inspection so more information as to course content might be available when he returns. The inspector stated that inclusion of solid waste reduction in employee training programs would be unresolved (79-54-04) pending further review by the inspector.

9. Control of High Radiation Areas

- a. Technical Specification 6.12.1.b requires areas with radiation levels exceeding 1000 mrem/hr be provided with locked doors to prevent unauthorized access. The keys to these doors are to be under the administrative control of the Health Physics Supervisor. In a memo to the Chemical and Radiation Protection Engineer, the Health Physics Supervisor expressed concern that, due to the large number of master keys issued to operations personnel, he is unable to exercise control of high radiation area doors and gates to the degree he feels is necessary. The memo was forwarded to the Plant Manager for review and action. The inspector stated that resolution of the Health Physics Supervisor's concerns would be examined during a subsequent inspection. (79-54-05)
- b. During the tour of the Radiation Controlled Area, the inspectors found that access could be gained to all marked high radiation areas equipped with locked gates or doors except the letdown filter room, which was chained and padlocked shut. In all but one case, that of the Spent Resin Storage Tank (SRT) pump room, the locking mechanism could be operated by hand or with some readily available tool such as the inspector's motel room key or a pocket knife, from the outside of the room. The SRT Pump room gate could not be opened in this manner, but it was discovered to be ajar on December 17, and a portable lead shield blocking access to the SRT was rolled aside by an inspector with ease. The inspector and a licensee representative measured dose rates in the SRT room on December 19 of two Rems per hour, though it was mentioned by the licensee representative that dose rates much higher could exist depending on the contents of the SRT. Dose rates for this area may exceed 500 Rems per hour. One of the areas which could be opened by hand, even though locked, was the evaporator condensate demineralizer area. Dose rates in this area were measured by the licensee at 1.5 Rems per hour. The make up prefilter area also could be opened in this manner and the dose rate in this area was 2.0 Rems per hour. The other areas marked as "High Radiation Areas" and protected by inadequate locks had measured general area dose rates from 50 milliRems per hour to 500 milliRems per hour.

- c. The plant manager and the Health Physics Supervisor were promptly informed by the inspectors regarding the inadequate locks and the licensee took immediate steps to correct this problem. At the time of the exit interview, the evaporator condensate demineralizer area lock had been modified so that only its key could be used to open the gate from outside of the room. Work was also in progress to upgrade on all other gates allowing access to areas marked with "High Radiation Area" signs.
- d. The inspector stated that since the locks to the evaporator condensate demineralizer and makeup prefilter cubicles could be easily bypassed to gain entry, these areas were not adequately locked to prevent unauthorized access. The inspector stated that the gate to the spent resin storage tank pump room being found open on December 17 was also an example of failure to lock the access to an area with radiation levels exceeding 1000 mrem/hr. The inspector informed licensee management representatives that these three items were in noncompliance (79-54-01) with Technical Specification 6.12.1.b.

10. Lead Shielding on Seismic Systems

During the tour of the Radiation Controlled Area, an inspector noticed lead shielding blankets had been suspended from a stainless steel pipe. The pipe was identified to be the return line to the makeup tank in the makeup system. This is a seismic class I system and no determination had been made regarding the safety significance of the extra weight bearing on the pipe. The Nuclear Shift Supervisor (NSS) on duty was asked to confirm the location of the shielding, the system identification, and the fact that no study had been done, and he did agree that it was a potential unresolved safety item. The NSS then ordered the ChemRad technician on duty to remove the lead from the pipe. The inspectors discussed the importance of the use of shielding and its relationship to keeping personnel exposure as low as reasonably achievable (ALARA) with the Health Physics Supervisor. It was also stressed that while it is laudable to utilize portable shielding, full consideration of other factors such as seismic loading on safety systems must be made.

10 CFR 50.59 requires an analysis of changes made to safety associated systems to be performed, and any safety questions to be reviewed for significance before the change is made. Facility Compliance Procedure CP-114, implements this requirement. Technical Specification 6.8 requires, thru reference to Reg Guide 1.33 (1972), these procedures be followed. The inspector stated that use of lead shielding on safety systems constituted a temporary modification to the system's seismic design and therefore required a safety analysis. The inspector stated that failure to follow procedure CP-114 for a safety review of this practice was in noncompliance (79-54-02) with Technical Specification 6.8.

11. Contaminated Material Control

The inspectors toured portions of the Radiation Controlled Area (RCA) on each day of the inspection, accompanied by licensee representatives on each occasion. During these tours the inspectors noted several examples of failure to adequately maintain control of contaminated materials as required by 10 CFR 20.203(e) and (f). It was emphasized in the exit interview by both inspectors that the purpose of these requirements is to ensure workers are adequately informed of the hazards associated with each package, container, or area containing contaminated material.

- a. Six 55-gallon drums were found in the auxiliary building, one of which had marked on the drum lid in magic marker the words: "contaminated lead blankets". The area in which these drums were found was not marked or posted as a Radioactive Materials Area, nor were the drums tagged with sufficient information to enable their opening with knowledge of the degree of hazard to personnel. The Health Physics Supervisor, when informed an inspector would like to open a drum, specified the precautions to be taken while opening the drum would be to place it in a ventilated and contamination controlled tent and also to require respiratory protection. When asked by the inspector why these precautions were necessary, he stated that he was unaware of the contents of the drum and that the lead blankets might be shielding a significant hazard which could not be detected with instruments from the outside of the drum. It was then agreed by the inspectors and the Health Physics Supervisor that opening the drum would not be necessary, since the requirement for sufficient information in 10 CFR 20.203 had not been met.
- b. Contaminated items and trash at Crystal River Unit 3 are kept in yellow polyethylene bags. During the course of the tour through the RCA, the inspectors noticed numerous instances of yellow polyethylene bags which were not marked with identifying information concerning contamination levels and radiation dose rates. The area where contaminated trash is kept prior to being compacted into 55-gallon drums was marked as a "Contaminated Materials Area" and as a "Radiation Area", but individual bags of contaminated waste were not marked. Because of the nature of such trash varies widely, it was apparent that an individual handling these bags would not be adequately informed of their contents and therefore could not take the appropriate measures necessary to avoid or minimize exposure. Such bags of contaminated items do vary widely in their characteristics and dose rates of greater than 100 milliRems per hour are not uncommon, though the particular bags examined by the inspectors at the compactor area read only two to five milliRems per hour above background radiation levels.
- c. 10 CFR 20.203(e) requires areas containing greater than ten times Appendix C quantities of radioactive materials be posted as "Radioactive Materials Areas" if the material is being stored in the area. 10 CFR 20.203(f) requires containers with greater than Appendix C

quantities of radioactive materials to bear a tag with the following words: "Caution or Danger, Radioactive Material". This tag also must have sufficient information for an individual handling the container to take precautions to avoid unnecessary exposure. The inspector stated that failure to post and label radioactive materials as described above was in noncompliance (79-54-03) with 10 CFR 20.203.

12. Contract Technician Qualifications

One inspector examined the qualifications and resume's of three contractor supplied senior health physics technicians and interviewed each of them to verify the accuracy of the individual's experience outlined on the resume'. Each resume' indicated the individual had met or exceeded the requirements of ANSI N18.1-1971, as required by the licensee's Technical Specifications. The inspector had no further questions.

13. Nuclear Service Sea Water System

During the tour of the Radiation Controlled Area, an inspector noted the normal Nuclear Service Sea Water (NSSW) pump was blind-flanged at its discharge and that a valve had been removed from the NSSW system. Also, the shell sides of the NSSW heat exchangers, according to a licensee representative, were being cleaned. The inspector spoke with the Nuclear Shift Supervisor (NSS) to ensure the requirements of the licensee's technical Specification 3/4.7.3.1 were being met. This requirement states that two NSSW pumps and associated flowpaths powered from separate operable emergency busses and three NSSW heat exchangers be continuously available for service during power operation. The inspector was assured by the NSS that adequate precautions were being taken to meet this requirement through the tagging procedure. The inspector had no further questions.