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

Report No. 50-302/81-12

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

Facility Name: Crystal River 3

License No. DPR-72

Inspection at Crystal River site near Crystal River, Florida

Inspector: John M. Puckett — August 18, 1981
J. M. Puckett — Date

Approved by: C. M. Hosey — 8/18/81
C. M. Hosey, Acting Section Chief — Date
Technical Inspection Branch
Division of Engineering and Technical
Inspection

SUMMARY

Inspection on June 23-26, 1981

Areas Inspected

This routine, unannounced inspection involved 26 inspector-hours onsite in the areas of airborne radioactive material surveys and respiratory protection.

Results

Of the two areas inspected, one violation was found (Failure to adequately perform measurements (surveys) of concentrations of radioactive materials in air).

DETAILS

1. Persons Contacted

Licensee Employees

*G. Bolt, Technical Services Superintendent
*C. Brown, Nuclear Compliance Supervisor
*J. Cooper, QA/QC Compliance Manager
*W. Cross, Operations Engineer
*V. Hernandez, Compliance Auditor
*K. Lancaster, Quality Assurance Auditor
T. Lutkehaus, Acting Nuclear Plant Manager
G. Ruszala, Chemistry/Radiation Protection Manager
*D. Smith, Technical Assistant to the Nuclear Plant Manager
*J. Lander, Maintenance Superintendent
*K. Wilson, Licensing Specialist
*S. Coward, Chemistry/Radiation Protection Specialist
*J. Wright, Nuclear Support Specialist
*R. Fuller, Plant Engineer
G. F. Cranfield, H.P. Supervisor

Other licensee employees contacted included three technicians, one operator.

NRC Resident Inspector

*B. Smith
*T. Stetka

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on June 26, 1981 with those persons indicated in Paragraph 1 above. The inspector stated that the licensee's routine airborne radioactivity survey program did not meet the requirements of 10 CFR 20.103. The acting plant manager acknowledged the inspector comments and reviewed the corrective action the licensee intended to take to improve the air sampling program. The Chemistry/Radiation Protection Manager was informed by telephone on June 29, 1981 that violation of 10 CFR 20.103 would but considered a new violation rather than another example of a violation cited in Region II report 50-302/31-08.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Airborne Radioactivity Survey.

10 CFR 20.103 states in part, no licensee shall possess, use, or transfer licensed material in such a manner as to permit any individual in a restricted area to inhale a quantity of radioactive material in any period of one calendar quarter greater than the quantity which results from inhalation for 40 hours per week for 13 weeks at uniform concentrations of radioactive material in air specified in Appendix B, Table 1, Column 1, and that for purposes of determining compliance with the requirements of this section the licensee shall use suitable measurements of concentrations of radioactive materials in air for detecting and evaluating airborne radioactivity in restricted areas.

The inspector reviewed the licensee's routine air sampling program.

The licensee was found to be performing one high-volume air sample per week on each elevation of the auxiliary building. These samples were taken in the hallways rather than in the rooms and cubicles where the highest potential for airborne contamination existed. Additionally, the flow of air inside the building is from the hallways into the rooms.

Although some areas are monitored by local airborne radiation monitors (ARMS), potential exists for auxiliary operators and other licensee employees who make routine entries to other areas under standing radiation work permits (SRWP) to be exposed to high airborne radioactivity levels without benefit of appropriate respiratory protection devices

When questioned by the inspector, a licensee representative stated that the ventilation process monitor system was routinely utilized by the facility to ensure that airborne contamination in rooms did not exceed the maximum permissible concentrations (MPC) specified in 10 CFR 20.

The inspector examined the construction of the Ventilation Process Monitors (RMAs) and noted that only the noble gas reading is available on a continuously monitored basis (in the control room). These detectors utilized a Geiger Muller (GM) type detector with a minimum detectable level of approximately 1 x 10-6 uCi/cc. Calculations

performed by the inspector indicated that due to ventilation dilution prior to the sample point and the detector sensitivity of the RMA system it was possible that up to 100 times the Maximum Permissible Concentration (MPC) for particulate material and 1000 times the MPC for iodine might exist in the air in an isolated cubicle or room.

Since SRWP's rely on the routine air sample program to inform workers of respiratory hazards, the potential existed for an individual to be exposed to very high concentrations of airborne radioactive material without his knowledge and without the benfit of protective equipment to reduce his exposure.

The inspector stated that failure to perform measurements of concentrations of radioactive materials in air for detecting and evaluating airborne radioactivity in Restricted Areas routinely entered by licensee employees under standing radiation work permits is a violation of 10 CFR 20.103. (81-12-01). However, the inspector stated it would be considered as another example of a violation identified in Region II Report 50-302/81-08 for which the licensee has not had an opportunity to respond.

The acting plant manager stated that the licensee would take the following action to correct the violation

a. Increase the frequency of routine air samples taken to comply with the requirements of 10 CFR 20.103 in areas such as the waste evaporator rooms, valve galleries, waste gas compressor rooms and other high potential airborne radioactive contamination areas to establish a base of information for a permanent change to the sample program. On an immediate basis these samples will be done weekly. With appropriate data the frequency of sampling may be changed to no greater than monthly.

b. At the licensee's discretion the Process Monitor System may be used to replace the above samples provided that:

   (1) An evaluation of the appropriateness of this method of sampling is performed. This evaluation shall include, but not be limited to dilution from the source, sensitivity of detectors and operator training on the meaning of readings and alarms in the Control Room.

   (2) A periodic check is performed to confirm the validity and appropriateness of process monitor readings.

The new sampling program was instituted on June 26, 1981 by the licensee.

6. Other Areas Inspected

a. Respiratory Protection Program

The inspector examined a new administrative procedure designed to control the issue, repair, cleaning, and maintenance or respiratory protective equipment. This procedure is still in the process of review, but will be implemented as soon as possible according to licensee representatives. The inspector stated that it appeared to answer the concerns the Health Physics Appraisal in this area and noted that this program was the subject of continuing routine inspections.

b. Plant Tour

The inspector toured the auxiliary building and noted no violations of NRC rules or regulations regarding posting or control of radioactive material.

c. Plant Vent Sample

The inspector observed the change of filter media on the plant vent monitor. A procedure was in use by the technicians, it was followed, and this operation was satisfactory. The inspector had no further questions in this area.