



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

Report No: 50-302/90-35

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: November 10 - December 18, 1990

Inspector: *R. V. Holmes-Ray* 1/9/91
P. Holmes-Ray, Senior Resident Inspector Date Signed

Accompanying Personnel: M. Glasman, Project Engineer, RII

Approved by: *R. V. Crlenjak* 1/9/91
R. Crlenjak, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Scope:

This routine inspection was conducted by two resident inspectors in the areas of plant operations, security, radiological controls, LERs, facility modifications, and licensee action on previous inspection items. Numerous facility tours were conducted and facility operations observed. Some of these tours and observations were conducted on backshifts.

Results:

During this inspection period violations or deviations were not identified. There were several power changes and two shutdowns and startups. Operations personnel continued to maneuver the plant properly and safely. Their ability to do so is a strength.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

J. Alberdi, Manager, Nuclear Plant Operations
*W. Bandhauer, Nuclear Operations Superintendent
*P. Bassa, Supervisor, Nuclear Plant Security
*G. Boldt, Vice President Nuclear Production
R. Fuller, Senior Nuclear Licensing Engineer
B. Hickie, Director, Quality Programs
*A. Kazemfar, Supervisor, Radiological Services
*J. Kraiker, Nuclear Management Support Specialist
W. Marshall, Nuclear Operations Superintendent
*P. McKee, Director, Nuclear Plant Operations
*S. Robinson, Nuclear Chemistry and Radiation Protection
Superintendent
*V. Roppel, Manager, Nuclear Plant Maintenance
*W. Rossfeld, Manager, Nuclear Compliance
*F. Sullivan, Manager, Nuclear Plant Systems Engineering
*R. Widell, Director, Nuclear Operations Site Support
*M. Williams, Nuclear Regulatory Specialist
*K. Wilson, Manager, Nuclear Licensing

Other licensee employees contacted included office, operations, engineering, maintenance, chemistry/radiation, and corporate personnel.

NRC Resident Inspectors

*P. Holmes-Ray, Senior Resident Inspector

*Attended exit interview

Acronyms and initials used throughout this report are listed in the last paragraph.

2. Plant Status

On November 10, 1990, rod 7-4, for the second time, dropped into the core and power was reduced to about 60 percent. After trouble shooting and outage planning the plant was shutdown to Mode 3 on November 13, 1990, with Mode 3 achieved at 1:25 a.m. At about 8:00 a.m. on November 14, 1990, the plant output breakers were closed and power operations resumed. On November 16, 1990, power was reduced to about 50 percent to repair a pin-hole leak in a small loose fuel water valve FWV-76 weld at about noon on November 16, 1990, power escalation to full power was commenced. At 7:38 p.m. on November 17, 1990, power was again reduced to about 50 percent to again repair the fuel water leak at FWV-76. At 7:40 a.m., on

November 18, 1990, power escalation to full power commenced. The plant ran at full power until November 28, 1990, when power was reduced to about 65 percent to repair condenser water box leaks. On November 29, 1990, the plant was taken off line to determine which valve was leaking to the RCDT. On November 30, 1990, after determining that RCV-8, a code safety valve off the pressurizer, was leaking to the RCDT at a rate well below TS limits and completion of work on secondary systems, the plant was again on line at 5:25 p.m. On December 2, 1990, power was reduced to about 70 percent to find and repair a leak in D condenser water box. On December 3, 1990, the plant was returned to full power after plugging one tube in the D water box. Operations at full power continued until December 11, 1990; at 9:00 p.m. a shutdown to Mode 5 was commenced to replace RCV-8 and repack spray line valves RCV-13 and RCV-14. The plant was off line at 3:21 a.m. on December 12, 1990, and in Mode 5 at 5:00 a.m. on December 13, 1990. The planned work was completed and the plant returned to power operations on December 18, 1990, about one shift ahead of schedule.

3. Review of Plant Operations (71707)

a. Shift Logs and Facility Records

The inspector reviewed records and discussed various entries with operations personnel to verify compliance with the TS and the licensee's administrative procedures.

The following records were reviewed:

Shift Supervisor's Log; Reactor Operator's Log; Equipment Out-Of-Service Log; Shift Relief Checklist; Auxiliary Building Operator's Log; Active Clearance Log; Daily Operating Surveillance Log; STI; and Selected Chemistry/ Radiation Protection Logs.

In addition to these record reviews, the inspector independently verified clearance order tagouts.

b. Facility Tours and Observations

Throughout the inspection period, facility tours were conducted to observe operations and maintenance activities in progress. Some operations and maintenance activity observations were conducted during backshifts. Also, during this inspection period, licensee meetings were attended by the inspector to observe planning and management activities.

The facility tours and observations encompassed the following areas: security perimeter fence; control room; emergency diesel generator room; auxiliary building; intermediate building; battery rooms; and electrical switchgear rooms.

The inspectors also observed conditions in the following areas:

(1) Monitoring Instrumentation

The following instrumentation and/or indications were observed to verify that indicated parameters were in accordance with the TS for the current operational mode:

Equipment operating status; area atmospheric and liquid radiation monitors; electrical system lineup; reactor operating parameters; and auxiliary equipment operating parameters.

(2) Shift Staffing

The inspector verified that operating shift staffing was in accordance with TS requirements and that control room operations were being conducted in an orderly and professional manner. In addition, the inspector observed shift turnovers on various occasions to verify the continuity of plant status, operational problems, and other pertinent plant information during these turnovers.

(3) Plant Housekeeping Conditions

Storage of material and components, and cleanliness conditions of various areas throughout the facility were observed to determine whether safety and/or fire hazards existed. During this report period housekeeping has been good but not outstanding. Some tape, plastic, protective clothing, etc. was found during walks through the plant.

(4) Radiological Protection Program

Radiation protection control activities were observed to verify that these activities were in conformance with the facility policies and procedures, and in compliance with regulatory requirements. These observations included:

- Entry to and exit from contaminated areas, including step-off pad conditions and disposal of contaminated clothing;
- Area postings and controls;
- Work activity within radiation, high radiation, and contaminated areas;
- RCA exiting practices; and

- Proper wearing of personnel monitoring equipment, protective clothing, and respiratory equipment.

Area postings were independently verified for accuracy by the inspector. The inspector also reviewed selected RWPs to verify that the RWP was current and that the controls were adequate.

(5) Security Control

In the course of the monthly activities, the inspector included a review of the licensee's physical security program. The performance of various shifts of the security force was observed in the conduct of daily activities to include: protected and vital area access controls; searching of personnel, packages, and vehicles; badge issuance and retrieval; escorting of visitors; patrols; and compensatory posts. In addition, the inspector observed the operational status of CCTV monitors, the Intrusion Detection system in the central and secondary alarm stations, protected area lighting, protected and vital area barrier integrity, and the security organization interface with operations and maintenance.

(6) Fire Protection

Fire protection activities, staffing, and equipment were observed to verify that fire brigade staffing was appropriate and that fire alarms, extinguishing equipment, actuating controls, fire fighting equipment, emergency equipment, and fire barriers were operable.

(7) Radioactive Waste Controls

During this report period the facility experienced some problems with chlorides in the reactor coolant, the reactor coolant drain tank, and the reactor coolant bleed tanks. The source of the contaminate was initially thought to be originating from the reactor coolant bleed tank. A sample was drawn from the bleed tanks and sent off-site to a laboratory for analysis. The analysis results revealed the chemical to be chloroethene which is used at the plant as a degreasing agent. Plant procedures restrict the use of chloroethene on the internals of the primary and secondary piping systems. An investigation, by the licensee, is in progress to determine how the chemical got into the system. A plan for removal of the chloroethene from the tanks is being developed. Until the chemical is removed from the tanks water management is somewhat more complicated and more water is discharged as waste than when the bleed tank water can be reused for primary makeup water.

The inspectors, as a result of routine plant tours and various operational observations, determined the general plant and system material conditions were being satisfactorily maintained, plant security program was being effective, and the overall performance of plant operations was good. Violations or deviations were not identified.

4. Review of Maintenance (62703) and Surveillance (61726) Activities

Surveillance tests were observed to verify that approved procedures were being used; qualified personnel were conducting the tests; tests were adequate to verify equipment operability; calibrated equipment was utilized; and TS requirements were followed.

The following tests were observed and/or data reviewed:

- SP-146, EFIC Monthly Functional Test; and
- SP-317, RC System Water Inventory Balance.

In addition, the inspector observed maintenance activities to verify that correct equipment clearances were in effect; work requests and fire prevention work permits, as required, were issued and being followed; quality control personnel were available for inspection activities as required; and TS requirements were being followed.

Maintenance was observed and work packages were reviewed for the following maintenance activities:

- Observed the in progress thermal insulation of the EDG lube oil coolers that were installed during the diesel rebuild in Refuel 7. The work was being performed in a skilled manner by contract employees. The contractor's supervisor was observed at the job site. The supervisor in the field is a strength.
- MP-132, Erection of Piping, WR 0277814, to remove/reinstall RCH-72 as an interference to the repacking of RCV-13.
- MP-175, Power Piping Pipe Snubber Removal and Installation, WR 0178046, to remove/reinstall RCH-80 as interference to the repacking of RCV-14 and WR 0278045 to remove/reinstall RCH-81 in support of repack of RCV-13.
- MP-402, Maintenance of Limiting Valve Operator Type SMB-000, WR 262180. This maintenance procedure was used to prepare a spare operator for RCV-13, spray line isolation valve. The operator was disassembled and cleaned then the parts inspected for damage or wear. The operator casting was found to be cracked so a replacement was ordered. The spare operator will be reassembled upon delivery of the new operator casting.

- PM-118, AC and DC Breakers Control Rod Drive System, WR 269818;
- PM-167, EFIC Time Delay Relay Testing; and
- PM-178, Preventive Maintenance of Limitorque Actuators.

For the surveillance and maintenance activities observed and listed above, the inspectors determined that the work was performed in a satisfactory manner in accordance with procedural requirements and met the requirements of the TS. Violations or deviations were not identified.

5. Safety Systems Walkdown (71710)

The inspector conducted a walkdown of the makeup system to verify that the lineup was in accordance with license requirements for system operability and that the system drawing and procedure correctly reflect "as-built" plant conditions.

The inspector walked down the makeup system with the licensee (system engineer). The pumps, piping, pipe supports, housekeeping, valve lineup and material condition of the system were inspected. The system engineer was knowledgeable of their systems and was current on the status of outstanding WRs on the system. None of the thirty outstanding WRs, the oldest was for a packing leak dated October 1989, affected operability but indicated a less than aggressive approach to resolving low priority outstanding system deficiencies. Many of the WRs were outage items. Housekeeping was good.

6. Review of Licensee Event Reports (92700)

LERs were reviewed for potential generic impact, to detect trends, and to determine whether corrective actions appeared appropriate. Events that were reported immediately were reviewed as they occurred to determine if the TS were satisfied. LERs were reviewed in accordance with the current NRC Enforcement Policy.

Violations or deviations were not identified.

7. Followup of Onsite Events (93702)

On November 9, 1990, at about 10:25pm recovery of dropped rod 7-4 commenced. At 10:43pm the rod was recovered and aligned with its group. On November 10, 1990, at about 7:07pm rod 7-4 again dropped. Again the operators took proper and prompt action as required. Shut down margin was calculated and found to be within specification. The apparent cause was a failed stator. A short outage was planned to replace the stator and on November 13, 1990, the plant was in MODE 3. Scheduled restart output breaker closure was for day shift November 15, 1990. The Stator was replaced and the plant back on line at about

8:00am November 14, 1990 one day ahead of schedule. Good preplanning and plan execution resulted in completion ahead of schedule.

RCS leakage was being trended and on December 4, 1990, was up to 1.4 GPM identified leakage. This was well below the TS limit of 10 GPM identified leakage. At this point discussions were held as to when to shut down the plant to determine exactly which valves were leaking to the RCDT and to isolate the leakage by shutting interstage packing leakoff valves if appropriate. On December 12, 1990, at about 3:21am the plant was off line to repair one pressurizer code safety valve and to repack the spray line control and isolation valves. On December 19, 1990, the plant was back on line after completion of the scheduled work. In this outage, as in the one in November, the preplanning and executing of the plan with good coordination between all involved departments resulted in the safe and timely completion of the outage.

8. Cold Weather Preparations (71714)

The inspector reviewed the maintenance history for space heaters and heat tracing on systems which are susceptible to freezing. The inspector reviewed Enclosure 16, Adverse Weather Conditions Checklist, of AI-500, Conduct of Operations, with the operating shift to ensure that the checklist was being used to perform the required cold weather protection measures.

Also, as part of this inspection, discussions were held with licensee personnel to verify that areas of the plant normally heated during plant operation were adequately protected during periods of plant shutdown.

Generally, the climate at the Crystal River facility is such that freezing temperatures do not occur for extended periods of time and do not generally create freezing problems.

Violations or deviations were not identified.

9. Followup of Allegation RII-90-A-0054

One aspect of allegation RII-90-A-0054 was inspected by the resident inspector during this report period and that was to determine if the clearance for the replacement of a makeup system relief valve (MUP-139) on April 19, 1990, was adequate.

The inspector reviewed the clearance for the job (90-03-221), the applicable RWP (90-072), the procedure controlling the work, MP-122, Disassembly and Reassembly of Flanged Connections, the auxiliary building shift relief checklist for April 18, 19, and 20, 1990, and the auxiliary building operator's logs for the work period.

The auxiliary building operator's log entry for April 18, 1990, at 11:45 a.m. states that the waste gas header was vented to the auxiliary building ventilation system with the throttle valve (WDV-489) approximately one turn open. The Control Complex and Auxiliary Building Log, Enclosure 2 to SP-301, Shutdown Daily Surveillance Log for April 18, 19, and 20, 1990, recorded the waste gas header pressure at about 2.5 psi with a note that the gage was inaccurate and WR 263291 was written. When WR 263291 was worked the pressure transmitter was found to indicate 7.7 psi when the test pressure was 3.0 psi and was calibrated so that its output was within specification. This instrument indicating a higher value than was present means that the header pressure was actually lower than the 2.5 psi indicated. The Auxiliary Building Shift Relief Checklist for April 18, 19, and 20, 1990, showed that the waste gas header was vented through WDV-489.

The clearance was for the makeup system isolation and not for the waste gas header and was a proper clearance for the portion of the makeup system to be worked. There was no mention of venting the waste gas header in the clearance. The RWP required that pre-job discussions be held between the ISI crew and the HPs covering the job to determine the need for continuous HP coverage, additional protective clothing, additional dosimetry, and the need for respiratory protection based on workers job function and radiological survey results. In addition the RWP specified that continuous HP coverage was required for work performed in respiratory equipment. These RWP requirements were met. No mention of the potential for gas from the waste gas header upon removal of MUV-139 was documented; however, the job was worked in respirator equipment and under continuous HP coverage. This indicates an understanding of the potential for gas being present and that proper radiological protection was required. The portion of this allegation relating to an improper or inadequate clearance related to this issue was not substantiated.

10. Licensee Action on Previously Identified Inspection Findings (92702 & 92701)
 - a. (Closed) IFI 302-89-08-03 - Follow the licensee's activities to inspect and repair RWP-3A/3B for corrosion damage.

During Refuel 7, RWP-3A was overhauled and refurbished. As part of this effort the pump parts were inspected for deterioration and some deterioration was noted. The extent of deterioration was such that pump operability was not impaired. RWP-3B is currently scheduled for overhaul in the Cycle 8 mid cycle outage. The performance data is monitored on a routine basis and therefore any reduced performance would be noted. This item is closed.

- b. (Closed) Violation 302/89-15-02 - Failure to properly implement plant procedures as required by TS 6.8.1.

(1) MP-165, Rev. 22, Removal and Installation of RC Pumps Seal Package Instrumentation, was approved on October 9, 1989, and is now more easily performed since the three actions of step 7.2.24 are now three separate steps. The machine shop personnel were informed of the violation and of the importance of procedural compliance and cautioned to be alert to steps which have more than one action. The review of other procedures with a similar problem is being done as part of the licensee review process. This item is closed.

(2) The NOTIS now provides current fire brigade member qualifications to the control room. The use of outdated qualification data has been eliminated. This item is closed.

- c. (Closed) Violation 302/90-24-01 - Failure to follow procedure CP-115.

The supervisor and the operator involved with this improper removal of a clearance were counseled by the operations superintendent on August 30, 1990, and an operations study book entry was also made that date. Revision 68 to CP-115, Nuclear Plant Clearance Orders, was effective October 1, 1990, and included a restoration section on the clearance sheet. This item is closed.

Violations or deviations were not identified.

11. Exit Interview (30703)

The inspection scope and findings were summarized on December 18, 1990, with those persons indicated in paragraph 1. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

12. Acronyms and Abbreviations

AC - Alternating Current
 AI - Administrative Instruction
 CCTV - Closed Circuit Television
 CFR - Code of Federal Regulations
 CP - Compliance Procedure
 DC - Direct Current
 EDG - Emergency Diesel Generators
 EFIC - Emergency Feedwater Initiation and Control System
 HP - Health Physics
 IFI - Inspector Followup Item
 ISI - Inservice Inspection

LER - Licensee Event Report
MAR - Modification Approval Record
MP - Maintenance Procedure
NOTIS - Nuclear Operations Training Information System
NRC - Nuclear Regulatory Commission
PM - Preventive Maintenance
psi - pounds per square inch
RC - Reactor Coolant System
RCA - Radiation Control Area
RCDT - Reactor Coolant Drain Tank
RCH - Reactor Coolant Hanger
RCS - Reactor Coolant System
RWP - Radiation Work Permit
SP - Surveillance Procedure
STI - Short Term Instruction
TS - Technical Specification
w.r - Work Request