



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

Report No.: 50-302/84-21

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 Dates: April 26 - May 24, 1985

Inspector: Robert L. Casullo, Jr. 6/14/85
T. F. Stetka, Senior Resident Inspector Date Signed

Accompanying Personnel: J. E. Tedrow, Resident Inspector

Approved by: V. W. Panciera 6/14/85
V. W. Panciera, Chief, Project Section 2B, Date Signed
Division of Reactor Projects

SUMMARY

Scope: This routine inspection involved 128 inspector-hours on site by two resident inspectors in the areas of plant operations, security, radiological controls, Licensee Event Reports and Nonconforming Operations Reports, 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. This inspection also surveyed the licensee's response to the steam binding in the auxiliary feedwater pump and mispositioned control rod issues.

Results: One violation and one deviation were identified (failure to have two members of the plant management staff approve a temporary procedure change, paragraph 5.b.(8); and failure to meet the FSAR commitment to maintain emergency diesel generator air start pressure, paragraph 3.).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- W. Bandhauer, Nuclear Safety Supervisor
- *C. Bennett, Nuclear Operations Planning Supervisor
- *G. Boldt, Nuclear Plant Operations Manager
- *J. Bufo, Nuclear Compliance Specialist
- M. Culver, Senior Nuclear Reactor Specialist
- *L. Floyd, Nuclear Document Control Supervisor
- E. Howard, Director, Site Nuclear Operations
- *W. Johnson, Nuclear Plant Engineering Supt.
- P. McKee, Nuclear Plant Manager
- *R. Murgatroyd, Assistant Nuclear Maintenance Supt.
- *W. Pittman, Senior Nuclear Maintenance/Bldg. Service Sup.
- *V. Roppel, Nuclear Plant Engineering Technical Services Mgr.
- *W. Rossfeld, Nuclear Plant Engineering Technical Services Mgr.
- *D. Smith, Nuclear Maintenance Supt.
- *S. Sullens, Nuclear Electrical/I&C Sup.
- *R. Thompson, Nuclear Mechanical/Structural Engineering Sup.
- K. Wilson, Supervisor Site Nuclear Licensing
- *R. Wittman, Nuclear Operations Technical Advisor

Other personnel contacted included office, operations, engineering, maintenance, chem/rad and corporate personnel.

*Attended exit interview

2. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on May 24, 1985. During this meeting, the inspector summarized the scope and findings of the inspection as they are detailed in this report with particular emphasis on the violation, deviation and inspector followup items.

Also during this meeting, the inspector discussed his observations from a walkdown conducted on the Decay Heat Removal (DHR) System. The following items were identified:

- There is no identification tag for valve DHV-117 located on top of the Borated Water Storage Tank (BWST);
- Several DHR system valves in the reactor building are missing identification tags; and,
- The operating area for valve DHV-68 (the BWST drain valve) is flooded, which could result in accelerated corrosion of this valve.

The licensee acknowledged the inspection findings and did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Inspection Items

(Closed) Inspector Followup Item (302/83-10-04): The licensee has completed their investigation into the ASV-5 failure as documented in revision 1 to LER 50-302/83-009. This investigation concluded that the failure was caused by a sticking motor contactor. This contactor was cleaned and the valve returned to service.

(Closed) Inspector Followup Item (302/82-28-10): The licensee has revised the affected drawing and has resolved the Field Problem Report by initiating a Modification Approval Record (MAR) 82-11-13-01 to install a check valve in the applicable air line to prevent recurrence of this event. The drawing revision and the MAR installation was reviewed by the inspector and action on this item is considered to be complete.

(Closed) Violation (302/84-21-04): Procedure MP-123, Disassembly and reassembly of Nuclear Service Closed Cycle Cooling Water Pumps SWP-1A, 1B, and 1C, was revised to allow sufficient time to take the required readings and procedure SP-104, Hot Channel Factors Calculations, was revised to assure that the data sheet agrees with the body of the procedure. In addition, procedure SP-442, Special Conditions Surveillance Plan, was revised to ensure that the verification of the average flux/flow/delta-flux trip setpoint is accomplished as required. These changes should prevent recurrence of this violation.

(Closed) Unresolved Item (302/85-19-02): The licensee has been unable to determine the Emergency Diesel Generator (EDG) minimum air start pressure required to satisfy the Final Safety Analysis Report (FSAR) commitments. The FSAR states that starting system air pressure will be maintained between 225-250 psig and that this air pressure will be sufficient to provide for six successive start attempts.

As stated in NRC Inspection Report 50-302/85-19, the inspectors found that the air starting pressure for EDG-3A was at 200 psig on March 29, 1985, and that surveillance procedures SP-300, SP-301, and SP-354A/B allowed a minimum air pressure of 215 psig. Failure of the licensee to justify the use of the lower air starting pressures to meet the six successive start criteria is contrary to the commitment made to the NRC in the FSAR and is considered to be a Deviation. For record purposes this Unresolved Item is considered to be closed. Followup on this item will be tracked by Deviation (302/85-21-01).

Deviation (302/85-21-01): Failure to meet the FSAR commitment to maintain EDG air starting pressure at 225-250 psig and to provide for six successive start attempts.

(Closed) Inspector Followup Item (302/85-11-03): The licensee has revised procedure SP-421, Reactivity Balance Calculations, to include a requirement to submit the computer generated data sheets with the completed procedure data sheets to ensure this data is retained in the procedure record system.

(Open) Inspector Followup Item (302/85-19-04): The licensee has developed a test to check the integrity of the SBM switch contacts. This test consists of a five pound pull exerted on a contact. If the contact remains intact after this test, contact integrity is considered to be acceptable. This test will be applied to a sampling of SBM switch contacts (approximately 312 contacts) to provide a representative sample.

During the test conducted on May 21, 1985, that was observed by the resident inspector, a fracture of the cam follower (constructed of a Lexan material) that holds the contact assembly occurred. As a result of this occurrence, the licensee inspected other cam followers and determined that cracking was evident. This cracking was not caused by the testing and appears to be caused by aging of the material. The licensee has stopped testing of these switches and is reviewing the situation to determine what additional actions need to be taken.

(Closed) Inspector Followup Item (302/83-30-02): The licensee has finalized the list of qualified reviewers and has implemented the use of this list. The inspector has reviewed this list and the reviewer certification sheets and considers action on this item to be complete.

(Open) Unresolved Item (302/84-21-06): The licensee has revised the Plant Review Committee (PRC) charter to clarify the use of the alternate members. Review of this revision by the inspector indicates that alternates could still be used to replace a full member during a long absence by the member. This finding was discussed with licensee representatives at which time the inspector stated that for a person to replace a full time member that person must assume, in total, the job responsibilities of the member that is being replaced. The licensee representative acknowledged the inspector's comments and stated that the charter would be revised to reflect this total job position philosophy. This item remains open pending the additional revision to the PRC charter.

(Closed) Inspector Followup Item (302/82-24-06): As a result of the engineering study, the licensee developed modification packages (MARs) numbers 79-7-4-2 and 79-7-4-3 to install restraints on the Once Through Steam Generator (OTSG) blowdown lines. These restraints are being installed during the current refueling outage.

(Closed) Unresolved Item (302/84-33-02): The licensee has conducted a review of operating cycle records and determined from this review that any adjustments made to the curves were acceptable and not contrary to Technical Specification (TS) requirements. The inspector has reviewed the results of this review and has no further questions on this item.

(Closed) Inspector Followup Item (302/84-33-03): The licensee has had their consultant, Babcock and Wilcox (B&W), complete the re-analysis on the boron concentration curve. This re-analysis was reviewed by the inspector and discussed with NRC Region II personnel. The inspector has no further questions on this item.

(Closed) Inspector Followup Item (302/84-33-05): The licensee has revised procedure PM-100, Preventive Maintenance Program, to ensure that "as found" conditions are not affected by the performance of preventative maintenance.

(Closed) Inspector Followup Item (302/85-04-04): The licensee counseled personnel to be more aware of clearance order releases and subsequent system restoration to ensure proper return to service. In addition, the procedure that controls equipment clearance issuance, CP-115, was revised to clarify and enhance the proper procedure to be used to return a system to service.

(Closed) Violation (302/84-16-01): The inspector verified that procedures SP-333 and SP-321 were properly completed. In addition the inspector verified that the principle procedure reviewers, i.e., the shift supervisors and assistant shift supervisors, were counseled to ensure that a thorough review of data from completed procedures is conducted. The inspector also verified through document review and observation of on-going activities that the second level review of completed data was being performed.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. No unresolved items were identified during this inspection period.

5. Review of Plant Operations

The plant was shutdown with the reactor vessel de-fueled for the duration of this inspection period.

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; Work Request Log; Short Term Instructions (STIs); selected Chemistry/Radiation Protection Logs, and Outage Shift Manager's Log.

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

No violations or deviations were identified.

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; Electrical Switchgear Rooms; and Reactor Building.

During these tours, the following observations were made:

- (1) Monitoring Instrumentation - The following instrumentation was 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.

No violations or deviations were identified.

- (2) Safety Systems Walkdown - The inspector conducted a walkdown of the decay heat removal (DHR) system to verify that the lineups were in accordance with licensee requirements for system operability and that the system drawing and procedure correctly reflect "as-built" plant conditions.

No violations or deviations were identified.

- (3) 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.

No violations or deviations were identified.

- (4) 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.

No violations or deviations were identified.

- (5) Radiation Areas - Radiation Control Areas (RCAs) were observed to verify proper identification and implementation. These observations included selected licensee conducted surveys, review of step-off pad conditions, disposal of contaminated clothing, and area posting. Area postings were independently verified for accuracy through the use of the inspector's own radiation monitoring instrument. The inspector also reviewed selected radiation work permits and observed personnel use of protective clothing respirators, and personnel monitoring devices to assure that the licensee's radiation monitoring policies were being followed.

No violations or deviations were identified.

- (6) Security Control - Security controls were observed to verify that security barriers are intact, guard forces are on duty, and access to the Protected Area (PA) is controlled in accordance with the facility security plan. Personnel within the PA were observed to ensure proper display of badges and that personnel requiring escort were properly escorted. Personnel within vital areas were observed to ensure proper authorization for the area.

No violations or deviations were identified.

- (7) 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.

No violations or deviations were identified.

- (8) Surveillance - 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, as required, were utilized; and TS requirements were followed.

The following tests were observed and/or data reviewed:

- SP-210, ASME Class 3 Hydrostatic Testing;
- SP-326B, Toxic Gas Detection System (Semi-Annual);

- SP-354A, Emergency Diesel Fuel Oil Quality and Diesel Generator Monthly Test; and,
- SP-602, ASME Section XI Relief Valve Testing.

On May 14, 1985, while observing surveillance testing in accordance with procedure SP-354A, the inspector noticed that step 6.2.2 of procedure SP-354A, which requires that either air handling fan AHF-22A or AHF-22B be operating, was not completed by the operator. Instead, the operator noted at the bottom of the page that AHF-22A was tagged for an equipment clearance and that the control switch for AHF-22B was in the "Normal After Stop" position. The inspector verified that neither fan was operating and questioned licensee representatives about this apparent deviation from the requirements of the procedure. The inspector was informed that neither fan was operable and that the fans were not necessary for diesel generator operations. The inspector noted that this deviation from the procedure constituted a temporary change to the procedure.

TS 6.8.3 allows temporary changes to be made to facility procedures provided the intent of the procedure is not altered and that the change is approved by two members of plant management staff, at least one of whom holds a Senior Reactor Operators (SRO) license. The licensee has a method for implementing a temporary change, called an Immediate Temporary Change (ITC), and delineates this change method in Administrative Instruction AI-401.

This change was made without the approval of two members of the plant management staff, at least one of whom holds an SRO license, and is considered to be a violation. This appears to be a recurrent and uncorrected violation since similar violations were identified in NRC Inspection Report 50-302/85-08 on February 8, 1985 and NRC Inspection Report 50-302/85-11 on March 9, 1985.

Violation (302/85-21-02): Failure to have two members of the plant management staff, at least one of whom holds an SRO license, approve a temporary procedure change to SP-354A as required by TS 6.8.3.

- (9) Maintenance Activities - 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:

- Inspect, repair, and set Nuclear Services Closed Cycle Cooling relief valves SWV-373, 374, and 384 per procedure MP-119;
- Repack feedwater valve FWV-38 in accordance with procedure MP-111;
- Installation of the control switch for the "B" Emergency Diesel Generator output breaker;
- Surveillance Specimen Holder Tube (SSHT) bolt replacement in accordance with procedure MP-522 and modification MAR-84-03-11-02A;
- Troubleshooting and repair of the "A" Sulfur Dioxide (SO₂) Toxic Gas Monitor (AH-653-CE);
- Contact testing of SBM control switches; and,
- Lower grid shell forging to core barrel bolt replacement in accordance with MAR-84-03-11-01.

On review of modification MAR-84-03-11-01, Lower Core Barrel (LCB) Bolt Replacement, the inspector noted that only 60 out of the 108 LCB bolts were replaced. The remaining 48 LCB bolts could not be replaced due to their location near guide blocks which interfere with the bolt removal tool. Discussions with licensee representatives revealed that an ultrasonic test of the LCB bolts showed that seven bolts had indications of possible cracking and that only two of these bolts had been replaced. The inspector questioned the effect that five potentially cracked LCB bolts would have on the lower core barrel support. Although licensee representatives stated that approximately 15 LCB bolts were needed to ensure adequate core barrel support, no documentation could be produced to support this position. The licensee will locate the necessary documentation that will identify the minimum number of lower core barrel support bolts required for safe operation.

Inspector Followup Item (302/85-21-03): Review documentation to ensure that a sufficient number of LCB bolts are installed for adequate lower core barrel support.

No violations or deviations were identified.

- (10) Radioactive Waste Controls - Solid Waste Compacting Operations and selected liquid and gaseous releases were observed to verify that approved procedures were utilized, that appropriate release approvals were obtained, and that required surveys were taken.

No violations or deviations were identified.

- (11) Pipe Hangers and Seismic Restraints - Several pipe hangers and seismic restraints (snubbers) on safety-related systems were observed to ensure that fluid levels were adequate and no leakage was evident, that restraint settings were appropriate, and that anchoring points were not binding.

No violations or deviations were identified.

6. Review of Licensee Event Reports and Nonconforming Operations Reports

- a. Licensee Event Reports (LERs) were reviewed for potential generic impact, to detect trends, and to determine whether corrected actions appeared appropriate. Events, which were reported immediately, were reviewed as they occurred to determine if the TS were satisfied.

LERs 84-64 and 85-03 were reviewed in accordance with current NRC enforcement policy. As a result of these reviews, these LERs are considered to be closed as follows:

- (1) LER 83-64, which reported the failure of radiation monitor RMA-6, was left open in NRC Report 50-302/84-02 pending results of an engineering investigation. This investigation was completed and it was determined that the system operated as designed and that no modification was necessary. This corrective action was discussed in revision 1 of this LER dated April 24, 1985. The inspectors have reviewed the results of this investigation and have no further questions.
 - (2) LER 85-03 reported the failure to perform an adequate eddy current inservice inspection (ISI) of the "B" Once Through Steam Generator (OTSG) tubes in 1980. Since the licensee cannot perform the required ISI on some of the OTSG tubes due to tube damage caused early in plant life, the licensee has proposed an amendment to the TS to change the ISI requirement. The licensee's activities will be tracked by Inspector Followup Item (302/85-17-02) identified in NRC Inspection Report 50-302/85-17.
- b. The inspector reviewed Non-Conforming Operations Reports (NCORs) to verify the following: compliance with the TS, corrective actions as identified in the reports or during subsequent reviews have been accomplished or are being pursued for completion, generic items are identified and reported as required by 10 CFR Part 21, and items are reported as required by TS.

All NCORs were reviewed in accordance with the current NRC enforcement policy.

As a result of this review, the inspector noted that NCOR 85-71 reported the finding of a loose contact on a relay that was used in the control circuit for circuit breaker 3206. This relay, which is numbered 0213, could have resulted in a failure to trip breaker 3206 if required. The licensee is evaluating this occurrence to determine if there is a generic problem.

Inspector Followup Item (302/85-21-04): Review the licensee's investigation into the loose contact on relay 0213 which is in the control circuit of circuit breaker 3206.

7. Review of Licensee Activities on Selected Safety Issues

a. Steam Binding of Auxiliary Feedwater Pumps

The inspector conducted a special survey of the licensee's activities in this area to determine that appropriate procedures have been developed to prevent, detect, and correct backleakage through check valves and that personnel training to detect such trends is being accomplished. The licensee was notified of this issue by IE Information Notice No. 84-06 dated January 25, 1985.

As a result of this survey the inspector noted that while the licensee had directed operators to check for hot pipes around the Emergency Feedwater Pumps (EFPs) during their normal rounds, there was no formal procedure that documented that these activities were being accomplished. In addition the inspector noted that the licensee did not appear to have a procedure that addressed actions to be taken if a pump became steam bound.

These findings were discussed with licensee personnel and the inspectors comments were acknowledged. The licensee will make appropriate procedure changes that will provide a formal check for hot pipes during the operator's rounds and will provide instruction for recovery of a steam bound EFP.

Inspector Followup Item (302/85-21-05): Review procedure changes that will require operators to check for hot pipes near the EFPs and to recover from a steam bound EFP.

b. Improper Control Rod Manipulation

The inspector conducted a special survey of the licensee's activities in this area to determine whether procedural changes have been initiated and personnel training is being accomplished to cover mispositioned control rods. The licensee was notified of this issue by IE Information Notice No. 83-75 dated November 3, 1983.

The results of this survey indicate that the licensee has developed appropriate procedure changes and that personnel training in this regard is being accomplished.

The inspector has no further questions in this area at this time.

8. Design, Design Changes and Modifications

Installation of new or modified systems were reviewed to verify that the changes were reviewed and approved in accordance with 10 CFR 50.59, that the changes were performed in accordance with technically adequate and approved procedures, that subsequent testing and test results met acceptance criteria or deviations were resolved in an acceptable manner, and that appropriate drawings and facility procedures were revised as necessary. This review included selected observations of modifications and/or testing in progress.

The following modification approval records (MARs) were reviewed and/or associated testing observed:

- Installation of hard piping on the sodium hydroxide (NaOH) recirculation line in the Reactor Building Spray (BS) system in accordance with MAR 84-02-03-01; and,
- Installation of a check valve between the instrument air (IA) system and the fire service (FS) system in accordance with MAR 82-11-13-01.

No violations or deviations were identified.

9. The following inspector followup items (IFIs) were evaluated by the Emergency Preparedness and Radiological Protection Branch. Based on this review, these items were determined to require no additional specific followup and are closed.

IFI Nos. 81-14-58
82-08-01
82-08-02
82-13-03
83-06-01
83-06-03
83-06-06