



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

Report No: 50-302/89-06

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: February 25 - March 31, 1989

Inspectors: <u>William K. Poetra</u>	<u>4/25/89</u>
P. Holmes-Ray, Senior Resident Inspector	Date Signed
<u>William K. Poetra</u>	<u>4/25/89</u>
J. Tedrov, Resident Inspector	Date Signed
Approved by: <u>R. V. Crlenjak</u>	<u>4/25/89</u>
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, Licensee Event Reports and Nonconforming Operations Reports, facility modifications, review of 10 CFR Part 21 reports, followup of onsite events, and meetings with local officials. Numerous facility tours were conducted and facility operations observed. Some of these tours and observations were conducted on backshifts.

Results: Two violations were identified: Failure to adhere to plant procedures, paragraph 2.b.(7)(a); Failure to have an adequate surveillance procedure, paragraph 2.b.(7)(b).

One unresolved item was identified; Review determination of reportability for the isolation of the reactor building purge exhaust flow, paragraph 6.

A weakness was identified in the licensee's requirements for logging non routine events, paragraph 2.a.

A licensee identified violation is discussed in paragraph 3.b.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- R. Atkinson, Engineer
- *W. Bandhauer, Superintendent, Nuclear Operations
- *P. Breedlove, Nuclear Records Management Supervisor
- *J. Cooper, Superintendent, Technical Support
- *G. Cowles, Senior Nuclear Results Engineer
- *R. Fuller, Senior Nuclear Licensing Engineer
- A. Gelston, Site Nuclear Engineer Services Supervisor
- *V. Hernandez, Nuclear Quality Assurance Surveillance Supervisor
- *B. Hickle, Manager, Nuclear Plant Operations
- W. Marshall, Superintendent, Nuclear Operations
- *P. McKee, Director, Nuclear Plant Operations
- *R. Murgatroyd, Superintendent, Nuclear Maintenance
- *T. Neaman, Nuclear Security Officer
- *S. Robinson, Superintendent, Nuclear Chemistry and Radiation Protection
- V. Roppel, Manager, Nuclear Operations Maintenance
- *W. Rossfeld, Manager, Nuclear Compliance
- *E. Welch, Manager, Nuclear Electrical/Instrumentation and Control Engineering Services
- *M. Williams, Nuclear Regulatory Specialist
- K. Wilson, Manager, Nuclear Licensing

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

*Attended exit interview

Acronyms and initialisms used throughout this report are listed in paragraph 9.

2. Review of Plant Operations (71707)

The plant began this inspection period in power operation (Mode 1). On February 26 a plant shutdown was commenced to initiate repairs to the "A" Reactor Coolant Pump (RCP-1A). The hot standby condition (Mode 3) was reached at 10:35 p.m. on February 26 followed by cold shutdown (Mode 5) at 7:12 a.m. on February 28. The plant remained in cold shutdown for the duration of this inspection period.

a. Shift Logs and Facility Records (71707)

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

The following records were reviewed:

Shift Supervisor's Log; Reactor Operator's Log; Outage Shift Manager's Log; Shift Relief Checklist; Auxiliary Building Operator's Log; Active Clearance Log; Daily Operating Surveillance Log; Short Term Instructions (STI); and Selected Chemistry/Radiation Protection Logs.

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

On March 8, 1989, the inspector noticed that the flowrate recorder for the Reactor Building (RB) purge exhaust flow indicated 0 flow. The inspector discussed this matter with operating personnel and was informed that an inadvertent isolation of this system had occurred while chemistry technicians were performing a routine test on this system's radiation monitor (RMA-1). A high sample flowrate condition occurred during this test as expected but the radiation monitor was not properly bypassed to prevent the purge isolation. During the review of this event, the inspector noticed that this actuation, and the subsequent actions to restore the purge flowrate, was not logged in any control room log books.

On March 9, 1989, with the plant in a partially drained Reactor Coolant System (RCS) inventory condition, a pumpdown of the RCS "J" legs was being performed to allow steam generator eddy current testing. During the pumpdown of the "J" legs, slight cavitation of the in service Decay Heat Removal Pump (DHP-1A) was noticed by control room operators. Operators took appropriate actions to stop pump cavitation by securing the pumpdown evolution and reducing flow through DHP-1A. This action prevented the loss of the pump and subsequent loss of this train of Decay Heat Removal (DHR) cooling. The inspector heard of this event during an outage planning meeting and discussed the sequence of events with plant operators. No mention of this event was logged in any control room log books.

The licensee specifies which logbooks must be maintained in administrative procedure AI-500, Conduct of Operations. However this procedure provides only guidance to the operators on which events should be logged. The inspector considers the lack of logging the above two non routine events and the lack of specific guidance of which events should be logged, to be a weakness. This item was discussed with licensee management and will be reviewed by the inspectors in future inspections.

b. Facility Tours and Observations (71707)

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 inspectors 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; reactor building; battery rooms; and, electrical switchgear rooms.

During these tours, the following observations were made:

- (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.

No violations or deviations were identified.

- (2) Shift Staffing (71707) - 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.

- (3) Plant Housekeeping Conditions (71707) - 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.

Housekeeping in the auxiliary and intermediate building was deficient in that Anti C's were overflowing the collection barrel at the "A" decay heat pump pit and lagging and lagging paste were strewn about the emergency feed pumps. The licensee took prompt corrective action to correct these areas. The inspector determined that plant management had also observed housekeeping discrepancies in the buildings and had identified them for correction.

- (4) Radiological Protection Program (71707) - 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.
- Radiation Control Area (RCA) exiting practices.
- 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 Radiation Work Permits (RWPs) to verify that the RWP was current and that the controls were adequate.

No violations or deviations were identified.

- (5) Security Control (71707) - 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 Closed Circuit Television (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.

No violations or deviations were identified.

- (6) Fire Protection (71707) - 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.

- (7) Surveillance (61726) - 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-179C, Containment Leakage Test - Type "C."
- SP-184, Sodium Hydroxide Flow Verification.
- SP-354A, Monthly Functional Test of The Emergency Diesel Generator EDG-1A.
- SP-605, Emergency Diesel Generator Engine Inspection/Maintenance.

- (a) The inspector observed the performance of procedure SP-354A on March 16, 1989, to start the diesel for an overspeed trip test. The inspector noticed that valve EGV-35, starting air isolation valve for the "A" Emergency Diesel Generator (EDG-1A), was closed. This valve was opened by the operator during pre-start checks on the diesel even though the procedure did not specify this action. Valve EGV-35 is normally open as specified by operating procedure OP-707, Emergency Diesel Generator Miscellaneous Activities, which contains valve lineups to return the emergency diesel to service after maintenance has been performed. The inspector discussed this matter with operations personnel to determine why the valve was found in the closed position. Procedure OP-707 had been completed on the previous day and valve EGV-35 had been positioned open as required. A subsequent post maintenance test of the diesel was performed in accordance with procedure SP-354A but the shutdown restoration section of this procedure was only partially completed. The inspector noticed that by not completing this section, at least two air start valves (EGV-35 and EGV-60) were left in incorrect positions (closed) and the diesel was left in an abnormal configuration.

The inspector reviewed SP-354A and noticed that step 9.1.1 of the procedure, which ensured that the post maintenance valve lineup of procedure OP-707 had been performed, was signed off as completed. Failure to adhere to the requirements of procedures SP-354A and OP-707 to establish the correct valve lineups for running the diesel is contrary to the requirements of TS 6.8.1 and is considered to be a violation.

Violation (302/89-06-01): Failure to adhere to the requirements of procedures SP-354A and OP-707.

- (b) The inspector observed the performance of procedure SP-184 during which a spill of caustic sodium hydroxide occurred in the "A" Decay Heat Pit. This procedure performs a flow verification test to verify that sodium hydroxide will be available at the suction of the decay heat pumps. To perform this test, temporary flanges and piping were installed as directed by steps 4.1.4 through 4.1.6 of the procedure. The licensee utilized an equipment clearance (#89-03-175) to establish the necessary system conditions for installing these temporary components.

After completing the installation of the temporary components, the procedure was followed to align the system for the necessary flowpath. The spill occurred because a vent valve, left in the open position by the equipment clearance, was not subsequently checked closed during the lineup for the flow test. Procedure SP-184 did not specify

that the position of any vent or drain valves be checked prior to the performance of the flow test. Procedure SP-184 is considered to be inadequate to safely perform this surveillance test. Failure to have an adequate procedure for the performance of a surveillance test is contrary to the requirements of TS 6.8.1.c and is considered to be a violation.

Violation (302/89-06-02): Failure to have an adequate surveillance procedure for performance of the sodium hydroxide flow verification test.

- (8) Maintenance Activities (62703) - 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 and rebuild of the "A" Reactor Coolant Pump (RCP-1A) motor in accordance with procedure MP-172, Limited Maintenance of Reactor Coolant Pump Motors.
- Rebuild and functional testing of snubbers RCH-60, CFH-14, FWH-140 and FWH-131 in accordance with procedures MP-174, Power Piping Pipe Snubber Rebuild Procedure, MP-175, Power Piping Pipe Snubber Removal and Installation, and PT-130, Hydraulic Pipe Snubber Test Procedure.
- Repair turbocharger air leaks on the "A" Emergency Diesel Generator (EDG-1A).
- Replace blower for EDG-1A.
- Replacement of the "B" Reactor Protection System power supply and post maintenance test in accordance with procedure SP-112, Calibration of the Reactor Protection System.

No violations or deviations were identified.

3. Review of Licensee Event Reports (92700) and Nonconforming Operations Reports (71707)

- a. Licensee Event Reports (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 89-04, 89-05, and 89-06 were reviewed in accordance with the current NRC Enforcement Policy. LER 89-06 is closed.

- (1) (Open) LER 89-04: This LER reported excessive electrolyte levels in both trains of the station batteries and in Unit 1 and Unit 2 batteries. The licensee plans to revise applicable surveillance procedures to maintain the electrolyte level below the specified high level mark. These revisions should be completed in May 1989. The LER will remain open pending revision to the surveillance procedures.
- (2) (Open) LER 89-05: This LER reported that two fire barriers between the auxiliary building/turbine building and the control complex were not constructed to meet a 3 hour fire rating requirement. The inspector verified implementation of fire barrier breach permits for the affected barriers and the establishment of the roving fire watch. The licensee plans to install modification MAR 89-02-03-01 to repair the affected barriers. The LER will remain open pending completion of the modification.
- (3) (Closed) LER 89-06: This LER reported that certain ASEA Brown Boveri circuit breakers did not include rebound springs and could result in failure of the breakers during a seismic event. The inspector reviewed and verified the licensee's corrective actions. This LER is closed.

- b. The inspector reviewed Nonconforming Operations Reports (NCORs) to verify the following: TS are complied with, 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.

NCOR 89-17 reported that work was performed on safety related equipment without a safety related work request. On January 26, 1989 a work request was written to replace the ground conduit strap, strap lugs and bolts on service water heat exchanger (SWHE) 1A. This is a safety related component but was marked on the work request as non-safety. No work procedures or quality control was required. The work required drilling on the SWHE flange. The licensee's Nuclear Quality Engineering discovered the oversight and stopped work and initiated a Non-Conforming Operations Report (NCOR) to document the event and to assure any required long term corrective action is taken. This is a licensee identified violation of TS 6.8.1.

4. Design, Design Changes and Modifications (37700)

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:

- MAR 87-07-28-02, Reactor Vessel Remote Level Indication, and associated test procedures TP#1, TP#2, and TP#2A.
- MAR 89-02-05-01, Install Rebound Springs for K-Line Breakers, and associated test procedure TP#1.

No violations or deviations were identified.

5. Review of the licensee's action on 10 CFR Part 21 Reports (36100)

The inspector reviewed the licensee's action associated with the following reports:

- A 10 CFR Part 21 report (P218901) dated January 13, 1989, concerning a deficiency in the slow close lever rebound spring for Brown Boveri K-Line circuit breakers. This matter is also the subject of IE Information Notice 89-29 and LER 89-06. The licensee has inspected applicable safety related breakers and installed any missing rebound springs in accordance with modification MAR 89-02-05-01 and work requests 110805, 111676 and 111683. Action on this item is considered complete and this item is considered closed.
- A 10 CFR Part 21 report (P218806) dated September 6, 1988, concerning defective steam generator tube plugs. The licensee has evaluated this report and has determined that one tube plug issued by Babcock and Wilcox (B&W) of Heat #W592-1 was installed in the "A" Once Through Steam Generator. The licensee plans to replace this plug at a future outage of sufficient duration which is presently planned to be the refueling outage in 1990. The licensee has discussed this matter with B&W and provided justification that operating with the potentially defective plug in place until the 1990 outage poses only a minimum risk. This item will remain open pending replacement of the defective plug.

6. Followup of Onsite Events (93702)

On March 10, 1989, at 11:39 p.m., an inadvertent isolation of the RB purge exhaust flow occurred. This event was logged in the reactor operators logbook which stated that the isolation occurred due to a spurious relay actuation in the Radiation Monitor Relay Cabinet which contains the purge isolation relay associated with radiation monitor RMA-1. Monitor RMA-1 serves as an Engineered Safety Feature (ESF) to isolate the RB purge exhaust flow on a high radiation signal. This monitor can also isolate

the RB purge exhaust flow due to non ESF signals such as a high sample flowrate condition. This event, along with the event discussed in paragraph 2.a of this report, are currently under review to determine reportability in accordance with 10 CFR 50.72(b)(2)(i) and 10 CFR 50.73(a)(2)(iv). This matter will be considered an unresolved item* pending completion of this review.

7. Meeting with Local Public Officials (94600)

On February 28, 1989, the NRC Staff held a meeting with members of the city council for the City of Crystal River, and members of the county commission for Citrus County.

The objectives of this meeting were to:

- acquaint local officials with the mission of the NRC.
- introduce the resident inspectors stationed at the Crystal River Nuclear Plant.
- discuss the lines of communication between local officials and the NRC resident inspectors and regional offices.
- discuss the operating status of the Crystal River Nuclear Plant.
- discuss any related community concerns with the plant or its operation.

The inspectors were impressed with the interest the community leaders showed in the Crystal River plant. It is felt that all participants benefitted from this meeting and that the meeting objectives were accomplished.

8. Exit Interview (30703)

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on March 30, 1989. 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 violations and unresolved item.

The licensee representatives acknowledged the inspector's comments and did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

*Unresolved Items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations.

<u>Item Number</u>	<u>Description and Reference</u>
50-302/89-06-01	Violation - Failure to adhere to the requirements of procedures SP-354A and OP-707.
50-302/89-06-02	Violation - Failure to have an adequate surveillance procedure for performance of the sodium hydroxide flow verification test.
50-302/89-06-03	Unresolved Item - Review the determination of reportability for radiation monitor isolation of the reactor building purge system.
50-302/89-LIV02	LIV - Failure to have a procedure when performing maintenance on a safety related component (SWHE) as required by TS 6.8.1.2.

9. Acronyms and Abbreviations

B & W	- Babcock & Wilcox
CCTV	- Closed Circuit Television
CFR	- Code of Federal Regulations
DHR	- Decay Heat Removal
ECCS	- Emergency Core Cooling System(s)
ESF	- Engineered Safety Feature
FSAR	- Final Safety Analysis Report
ISI	- Inservice Inspection
LER	- Licensee Event Report
LIV	- Licensee Identified Violation
MAR	- Modification Approval Record
NCOR	- Nonconforming Operation Report
NRC	- Nuclear Regulatory Commission
PM	- Preventive Maintenance
RB	- Reactor Building
RCA	- Radiation Control Area
RCS	- Reactor Coolant System
RWP	- Radiation Work Permit
SP	- Surveillance Procedure
STI	- Short Term Instruction
SWHE	- Service Water Heat Exchanger
TS	- Technical Specification
UNR	- Unresolved Item
VIO	- Violation