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

Report No.: 50-302/86-08

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: January 29-31, 1986

Inspector: N. Economos 2/24/86
N. Economos Date Signed

Approved by: J. J. Blake 2/25/86
J. J. Blake, Section Chief Date Signed
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, announced inspection entailed 17 inspector-hours on site in the areas of reactor coolant pump (RCP) "1A" shaft failure and ultrasonic examination; pressurizer code safety relief valve RCV-8 discharge flange misalignment.

Result: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

P. F. McKee, Plant Manager
*V. R. Roppel, Manager, Plant Engineering and Technical Services
K. R. Wilson, Supervisor, Site Nuclear Licensing
F. V. Fusick, Supervisor, Nuclear Engineering
G. Halnon, RCP "1A", Task Force Leader
*K. F. Lancaster, Manager, Site Nuclear, QA
*W. L. Rosefeld, Manager, Site Nuclear Compliance
*J. Alberdi, Manager, Site Nuclear Operations Technical Services
W. G. Neuman, III, Nuclear ISI Specialist

Other Organization

Courter & Company, Inc.
Joe Arrain, QC Inspector

NRC Resident Inspectors

*T. Stetka, Senior Resident Inspector
*J. Tedrow, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on January 31, 1986, with those persons indicated in paragraph 1 above. The licensee was informed of the inspection finding below which was discussed in detail. No dissenting comments were received from the licensee.

(Open) Unresolved Item 302/86-08-01 "RCV-8 Discharge Flange Misalignment," paragraph 7.

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

3. Licensee Action on Previous Enforcement Matters (92702)

This subject was not addressed in the inspection.

The following applicable procedures were reviewed for technical content:

SP-200 Rev. 4, Hydraulic Snubber Functional Testing

PT-130 Rev. 0, Hydraulic Pipe Snubber Test Procedure

MP-175 Rev. 5, Power Pipe Snubber Removal and Installation

MP-196 Rev. 0, ITT Grinnell Pipe Snubber Removal and Replacement

The functional testing of the below listed hydraulic snubber was observed to ascertain whether it conformed to acceptance criteria contained in the aforementioned procedure PT-130. These snubbers were identified as follows:

FWH-126	S/N 720083	2½" bore dia.
MUH-40	S/N 73022C	1½" bore dia.

The testing was performed on a ITT Grinnell Shock and Sway Suppressor Tester, Model #5434-3. In addition to the functional tests, the inspector verified by observation equipment calibration check and reviewed equipment and personnel qualifications for compliance with specifications, industry standards and regulatory requirements as applicable.

Within the areas inspected, no violations or deviations were identified.

7. Independent Inspection Effort

Discharge Flange Misalignment, Valve RCV-8 Welding (55700)

Following a discussion with the senior resident inspector concerning repair work on pressurizer code safety relief valve CCV-8, the inspector reviewed work package #76268 entitled "Correct Discharge Flange Misalignment on Discharge Pipe". Discussions with cognizant personnel disclosed that the work package was generated when it was determined that the flange on the discharge side of the valve piping exceeded minimum acceptable misalignment criteria.

The work package showed that in order to correct the problem, the site welding engineer prescribed the following corrective action:

> "Using weld procedure 8/8-TT-019, Rev. 5, start weld operation with TIG torch using weld procedure but do not add weld filler material. Monitor flange alignment. Move TIG unit along the circumference... allow weld area to cool and check alignment".

This corrective action had been approved by management on January 24, 1986. The applicable procedure qualification record (PQR) 72-002 showed the TIG process was used in conjunction with 308/308L type filler metal to qualify the procedure for a thickness range of 0.062 to 9/16 inches. The procedure was qualified in accordance with ASME Code Section IX requirements. The inspector discussed the use of the aforementioned weld procedure

4. Unresolved Items (92701)

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. New unresolved items identified during this inspection are discussed in paragraph 7.

5. Reactor Coolant Pump "1A", Shaft Failure (62700)

This inspection was a followup to that documented in Report 50-302/86-03. Upon arrival at the site, the inspector ascertained that the licensee had fabricated a calibration standard and developed an ultrasonic examination procedure to be used for the examination of the other three pump shafts. The calibration block was fabricated from material that was similar to the pump shafts with similar dimensions, configuration and acoustical properties. In addition to the grooves predicated by design, three notches were machined in the areas of interest and located 120° apart at distances of approximately 38", 49", and 59" from the top of the shaft. Each notch was approximately 1.5 inches long and 0.250" wide and varied in depth from 0.226 to 0.376 inches. These notch depths were selected with the intent of showing minimum flaw size that could be reasonably detected. The inspector witnessed the demonstration of the U/T procedure and verified that the reflectors emanating from the machined notches were readily detectable. Discussion with the licensee disclosed that examination of the shafts including the replacement for RCP "1A" would probably occur sometime during the coming weekend or possibly early during the week of February 3, 1986. Following the closing of this inspection on February 3, 1986, the licensee's representative, via telephone, informed the inspector that indications with depths greater than minimum notch depth (0.226") were detected in the RC pump "1B" shaft. The indications were located approximately 49" from the top of the shaft and over one half of the circumference. These indications appeared to be in the proximity of the "1A" RC pump shaft failure. No indications were detected in the shafts of RC pumps C and D. In addition, the licensee indicated that B&W would conduct further U/T examinations in an attempt to characterize and quantify the indications in "1B" RC pump shaft. On February 5, 1986, the licensee decided to arrange for the procurement of a replacement shaft for RC pump "1B".

Discussions with cognizant licensee personnel disclosed that the investigation into the cause of the "1A" RC pump shaft failure was continuing, however, the cause for the initiation and subsequent catastrophic shaft failure has yet to be determined.

6. Inservice Inspection - Snubber Functional Testing, Work Observation (73753)

At the time of this inspection, the licensee was conducting functional tests on designated hydraulic snubbers as required by Technical Specification (TS) 4.7.9.1.(c).

without filler metal and stated that this practice violated Code requirement QW-404.14 - Deletion or Addition of Filler Metal. In response, the licensee representative stated that QC had identified this problem and had issued a quality program discrepancy report (QPDR), #86-NQC-002, dated January 31, 1986. The inspector discussed this matter with onsite management and stated that an unresolved item would be identified until a review and evaluation of the corrective action to the QPDR can be done on a later date. The unresolved item was identified as 302/86-08-01, "RCV-8 Discharge Flange Misalignment".

Within the areas inspected, no violations or deviations were identified.