



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

Report No.: 50-302/85-16

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: March 25 - 28, 1985

Inspector: W. P. Ang 4-10-85
Date Signed

Approved by: J. J. Blake for 4-10-85
Date Signed
J. J. Blake, Section Chief
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, announced inspection entailed 23 inspector-hours on site in the areas of pipe support baseplate designs using concrete expansion anchors (IEB 79-02) and seismic analysis for as-built safety-related piping systems (IEB 79-14).

Results: One violation was identified - Pipe support installation discrepancies, paragraph 6.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *E. C. Simpson, Director, Nuclear Operations Engineering and Licensing
- *J. T. Telford, Director, Quality Programs
- E. M. Howard, Director Site Nuclear Operations
- *G. R. Westafer, Manager, Licensing
- *R. C. Widell, Manager, Nuclear Operations Engineering
- *P. R. Tanguay, Supervisor, Nuclear Engineering
- *A. Petrowski, Nuclear Structural Engineer
- *K. R. Wilson, Supervisor, Site Nuclear Licensing
- V. A. Hernandez, Senior Nuclear Quality Assurance (QA) Specialist

Other Organization

Gilbert/Commonwealth

- J. B. Muldoon, Manager, Piping Department
- C. N. Rentschler, Section Manager, Piping Department
- *T. A. Cuba, Crystal River 3 (CR3) Project Piping Engineer

NRC Resident Inspector

- *T. Stetka

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on March 28, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee.

Violation 302/85-16-01 - Pipe Support Installation Discrepancies, paragraph 6.

Unresolved Item 302/85-16-02 - Justification of Concrete Expansion Anchor Design Calculation Capacities, paragraph 6.

Proprietary material was reviewed during the inspection. However, information used in this inspection report was not considered to be proprietary by the licensee during the inspection.

3. Licensee Action on Previous Enforcement Matters

(Closed) Unresolved Item 302/84-32-01 - Compliance Regarding WEJ-IT Reduced Capacity. The unresolved item identified concerns regarding licensee corrective action resulting from reduced concrete expansion anchor capacity determined by testing. The unresolved item also identified associated QA program concerns. On March 14, 1985, the licensee submitted letter 3F0385-14, IEB 79-02 Supplemental Information and IE Inspection Report 84-32. The letter outlined the licensee's corrective action for the reduced concrete expansion anchor capacities and addressed the associated QA program concerns. During this inspection (see also paragraph 6), the inspector determined that the licensee had commenced implementation of the corrective action committed to in the above noted letter. In addition, a review of Safety Related Engineering Procedure 8, Revision 4, Temporary Change 1, and Quality Programs Surveillance Report 84-RJC-30 indicated that the licensee was also addressing the above noted QA program concerns. Unresolved Item 302/84-32-01 was closed.

4. Unresolved Item

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. One new unresolved item identified during this inspection is discussed in paragraph 6.

5. Independent Inspection (92706)

The inspector conducted a general inspection of the CR3 control room. The inspector observed and discussed plant status with licensee personnel, reviewed the control room log and observed control room activity and decorum. No violations or deviations were identified.

6. Pipe Support Baseplate Design Using Concrete Expansion Anchors (IEB 79-02) and Seismic Analysis for As-built Safety-Related Piping Systems (IEB 79-14)

On October 8, 1984, the licensee submitted to NRC Region II supplementary information for IEB 79-02 on Florida Power Corporation (FPC) letter 3F1084-01. The letter stated that licensee site-specific testing of WEJ-IT type concrete expansion anchors showed a 40% to 60% reduction of capacities from the 1982 catalog capacities. The 1977 catalog capacities were used in Crystal River 3 concrete expansion anchor calculations. The letter identified that further licensee evaluation of Crystal River 3 safety-related seismically analyzed pipe support concrete expansion anchors was being performed. An NRC inspection documented on RII Inspection Report 50-302/84-32, was performed to follow-up on the licensee's report and to verify licensee compliance with IEB 79-02 and IEB 79-14 requirements and licensee commitments. On March 14, 1985, the licensee submitted a revised corrective action plan to provide for IEB 79-02 requirements. A follow-on inspection to the above noted inspection was performed to verify licensee compliance with IEB 79-02 and 79-14 requirements and its revised commitments.

The following related documents were reviewed:

- Safety-Related Engineering Procedure Number 8, Revision 4, Temporary Change 1, Corrective Action
- Quality Programs Surveillance Report 84-RJC-30, Evaluation of the WEJ-IT Testing Program
- Interoffice Correspondence NEA-85-0014, Dated February 4, 1985, Report of Concrete Anchor Deficiency
- Modification Approval Record (MAR) 84-10-08-01, Seismic I Large Bore Pipe Support Redesign
- Work Package 60571-53, Modification of Pipe Supports SWH-84, MUH-556 and DHH-521
- Maintenance Procedure MP-132, Rev. 11, Erection of Piping
- Nuclear Modification and Outage Procedure MOP-408, Installation of Concrete Anchor Bolts

MAR 84-10-08-01 and MOP-408 provided inspection requirements for modification and installation of pipe supports and concrete expansion anchors. However, specific requirement to verify concrete expansion anchor embedment depth, spacing and edge distance had not been included. During the inspection, the licensee prepared Field Change Notice 13 to MAR 84-10-08-01 to ensure that the required verification of proper installation of concrete expansion anchors included specific verification and documentation of acceptable concrete expansion anchor embedment depth, edge distance and spacing.

The following pipe supports were randomly selected. Installation drawings and concrete expansion anchor design calculations, if applicable, were reviewed to determine licensee compliance with its written commitments in its March 14, 1985 letter regarding safety factor evaluation, operability evaluation and pipe support modification.

MSH - 143
 MSH - 147
 EFH - 65
 EFH - 71
 EFH - 77
 MSH - 158A
 MSH - 230
 EFH - 530
 EFH - 532
 DHH - 538
 DHH - 602
 MSH - 182

Concrete expansion anchor capacities used in the calculations were compared with the results of the licensee's on-site testing. It was noted that some of the calculations utilized concrete expansion anchor capacities that were interpolated from the test data. The licensee was informed that the calculations should clearly document the source of the capacity used (i.e., interpolated test value) and justify the value used. Furthermore, it was noted that the calculation for pipe support MSH-230 utilized capacities for 1 1/2" diameter concrete expansion anchors that had been extrapolated from test data. The licensee was requested to justify extrapolated data used in calculations. The above noted items regarding justification and documentation of interpolated and extrapolated data were identified as Unresolved Item 50-302/85-16-02, "Justification of Concrete Expansion Anchor Design Calculation Capacities."

The licensee stated that modification packages were being prepared for the large core safety-related seismically analyzed pipe supports whose concrete expansion anchor safety factors were between two and four. Ninety-nine pipe supports were identified as requiring additional corrective action. Of the 99, three pipe supports had been modified. Modification of the remainder of the pipe supports had not been started during the inspection. Documentation of inspections for modified pipe supports DHH-521, MUH-556 and SWH-084 were reviewed. MUH-556 and DHH-521 were reinspected by the NRC inspector and the licensee. SWH-084 was not readily accessible but was partially visible and was visually inspected for obvious discrepancies. Completed, installed, modified, inspected and Quality Control (QC) accepted pipe support MUH-556 piece "H" installation dimensions did not "conform" with the applicable approved engineering drawings. In addition, unauthorized loads (scaffolding) were being partially supported by the pipe support. No procedure or instructions were available authorizing or prohibiting installation of scaffolding/staging on permanent plant equipment. This appears to be in violation of 10 CFR 50, Appendix "B", Criterion V, and was identified as Violation 50-302/85-16-01, "Pipe Support Installation Discrepancies."

Pending licensee completion of IEB 79-02 and IEB 79-14 requirements and licensee commitments, the Bulletins were left open.