



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

Report No.: 50-302/88-25

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: August 22 - 26, 1988

Inspector: Keith R. Jury 9/20/88
K. Jury Date Signed

Accompanying Personnel: E. Lea

Approved by: G. Belisle 9/20/88
G. Belisle, Chief of
Quality Programs Section
Operations Branch
Division of Reactor Safety Date Signed

SUMMARY

Scope: This routine, unannounced inspection was conducted in the areas of modifications and design control.

Results: In the areas inspected, violations or deviations were not identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. Alberdi, Manager, Nuclear Technical Support
- *F. Bailey, Superintendent, Projects
- *G. Becker, Manager, Site Nuclear Engineering Services
- J. Colby, Manager, Nuclear Mechanical Structural Engineering Services
- *R. Fuller, Senior Nuclear Licensing Engineer
- *M. Jones, Nuclear Projects Specialist
- *W. Rossfeld, Manager, Nuclear Compliance
- R. Wagner, Senior I&C Engineer
- *R. Widell, Director, Nuclear Operations Site Support
- G. Williams, Supervisor (Acting), Nuclear Mechanical Structural Engineering Services
- *M. Williams, Nuclear Regulatory Specialist

Other licensee employees contacted during this inspection included engineers, technicians, and administrative personnel.

NRC Resident Inspector

- *P. Holmes-Ray

- *Attended exit interview

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

2. Design Control and Modifications (37700)

This inspection was conducted in the area of design control and modifications. As part of this inspection, evaluations were performed concerning the adequacy of: 10 CFR 50.59 evaluations, training, and necessary procedure and drawing revisions. Both open and closed MARs were reviewed, as well as one temporary MAR. The following MARs were reviewed:

MAR Number	Title
85-09-04-01	Replace SFV 18 and 19
T&6-08-09-01	Removal of Supports
87-06-21-01	SWP-1C Mechanical Seal Replacement
87-07-03-01	Makeup Tank Level Instrumentation
87-08-02-01	HPI/LPI Time Response Problem
87-08-03-01	Letdown Cooler 3C Installation

All of the above MARs had been turned over to Operations in accordance with Modifications Projects Procedure 107 (MPP-107), Turnover of Modifications (Complete/Partial) to Nuclear Operations, Revision 2. The details of each MAR are discussed as follows:

MAR 85-09-04-01

This MAR was written to replace two Spent Fuel Cooling system valves, SFV-18 and SFV-19. These valves are containment isolation valves and were replaced due to leakage through them, prohibiting passage of their respective LLRTs. This design package was thorough; design inputs were specified, the 10CFR 50.59 evaluation was adequate, post-modification testing was performed, and even though seismic calculations were not contained in the package, they were available and sufficiently detailed and accurate.

MAR T 86-08-09-01

This temporary MAR was written to repair two spool pieces in the Sea Water Decay Heat system that had pressure boundary failures due to corrosion. This MAR provided a temporary fabricated enclosure for the spool pieces and was written on an emergency basis due to the necessity of promptly stopping the leaks. During the review of this MAR one discrepancy was identified involving the 10 CFR 50.59 evaluation; it was written before supporting calculations were completed. Due to the urgency of the modification, the responsible engineer utilized his judgement in determining that an unreviewed safety question did not exist, while the calculations were being performed in parallel. This is not considered to be a good practice; however, the example appears to be isolated and the calculations did support the 10 CFR 50.59 evaluation. The inspector discussed the situation with the responsible engineer, and his assumptions and judgement appeared to be valid. This temporary modification has subsequently been removed. No other discrepancies were identified with this temporary MAR.

MAR 87-06-21-01

This MAR was initiated due to excessive leakage that occurred from SWP 1C shaft packing. Excessive leakage resulted in increased liquid radioactive waste and increased demineralize water usage. MAR 87-06-21-01 replaced the existing packing with Chesterton type 221 mechanical seals. A review of the closed package and other documents indicated that procedure compliance was adhered to in the implementation and close out of this design modification. Documentation was available to show that training, and required procedure and drawing revisions were performed.

The engineering evaluation performed by A. W. Chesterton Co. to allow the Chesterton seals to be used as replacement for the conventional shaft packing was very detailed. All concerns addressed by the licensee in MAR 87-06-21-01 were evaluated by A. W. Chesterton Co. The 10 CFR 50.59 evaluation performed by the licensee was adequate. One discrepancy was identified with the MAR process. The leakage acceptance criteria for determining if the modification had resulted in the desired results were not clearly stated in the design package. The design input record stated that the mechanical shaft seal must limit leakage to less than 10 drops per minute. The test requirement provided in the Engineering Instruction states that leakage should not be greater than 10 drops per minute. Actual results were stated on Work Request Number 90603 as approximately 120 drops per minute leakage. Justification for not following the design input record requirement and allowing the leakage to be in excess of the 10 drops per minute was based on the acceptance criteria and information provided by A. W. Chesterton Co. The acceptance criteria established by Chesterton for leakage was less than 150 drops per minute. There is also a "breakin period" until the faces of the seal lap themselves to each other; leakage reduces with elapsed time while the pump is in operation. Based on the vendor acceptance criteria, the 120 drops per minute was acceptable and the low limit set by the licensee was conservative.

MAR 87-07-03-01

This MAR was initiated due to the release of airborne contamination that occurred when venting the MUT gas space to atmosphere. Modifying the dry reference legs of MU-14LT1 and LT2 to wet reference legs eliminates the requirement of venting, therefore eliminating airborne contamination. The closed package was complete and detailed. The 10 CFR 50.59 evaluation was adequate and applicable drawings and procedures were revised as necessary. No training was required as a result of this MAR.

MAR 87-08-02-01

This MAR changed the LPI/HPI undervoltage time delay relay settings from 7 to 5 seconds. This change was initiated to satisfy a NUREG-0737 commitment. The inspector verified that all TS and FSAR requirements were still met, and that satisfactory post-modification testing was performed. All necessary procedure revisions were accomplished in a satisfactory manner. Due to the fact the modification increased conservatism of the HPI/LPI pump response times, system operability was not adversely affected and the modification did not prove to be an unreviewed safety question.

MAR 87-08-03-01

This MAR was initiated to add a letdown cooler (3C) to the Nuclear Services Closed Cycle Cooling system. The additional cooler was installed as a result of repeated letdown cooler failure at the licensee's facility and other plants. The addition of the third letdown cooler was intended to increase plant reliability by reducing the risk of a forced shutdown in the event of existing letdown cooler failure. The engineering evaluation provided was very detailed. All affected drawings and procedures requiring revisions were identified in the modification package.

In summary, the licensee's design change process appeared to be adequately planned, executed, and documented. The discrepancies identified above were not significant in nature and it appeared they were not indicative of a programmatic breakdown. There are many (553) MARs that are still in the design, routing, field working, or "on hold" stage, which could become a concern if they are not worked in a timely manner, leading to a larger backlog. However, the number of open FPRs, which is the main mechanism utilized in initiating MARs, has been consistently decreasing, which should lead to a decrease in the number of MARs still requiring implementation. This number of open MARs should be monitored to prevent encountering a cumbersome backlog which could hinder timely MAR implementation.

3. Exit Interview

The inspection scope and results were summarized on August 25, 1988, with those persons indicated in paragraph 1. No proprietary information is contained in this report.

4. Acronyms and Initialisms

CFR	Code of Federal Regulations
FPR	Field Problem Report
HPI	High Pressure Injection
LLRT	Local Leak Rate Test
LPI	Low Pressure Injection
LT	Level Transmitter
MAR	Modification Approval Record
MUT	Makeup Tank
SFV	Spent Fuel Cooling Valve
SWP	Nuclear Service Closed Cycle Cooling Pump