



Florida Power Corporation

Crystal River Unit 3
Docket no. 5C-302

May 8, 1992
3F0592-06

Mr. James Lieberman, Director
Office of Enforcement
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Subject: Notice of Violation and Proposed Imposition of Civil Penalty
Inspection Report 91-25
Enforcement Action EA 92-002

Dear Sir:

Please find attached Florida Power Corporation's (FPC) response to Inspection Report 91-25. In accordance with 10CFR2.201, FPC provides Attachment I as our reply to the Notice of Violation (NOV). The FPC report of January 10, 1992 entitled "Generic Implications of Reactor Trip Events in December 1991" is provided as Attachment II. Attachment III is provided as a current implementation status of recommended actions addressed by the report. Also attached is FPC check #1417484 in the amount of \$50,000.

The completion dates for actions provided by Attachment III represent FPC's best estimate of when these actions will be complete based on known priorities and commitments. The Vice President, Nuclear Production, will periodically review progress on these actions and will approve revised completion dates if changes are necessary. FPC is updating the Senior Resident Inspector and NRR Project Manager on the status of our actions monthly.

Sincerely,

P. H. Beard, Jr.
P. H. Beard, Jr.
Senior Vice President, Nuclear Operations

PVF/JLB:mag

Attachments

xc: Regional Administrator, Region II
Project Manager, NRR
Senior Resident Inspector

w/ check \$50,000 #1417484
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FLORIDA POWER CORPORATION
NRC INSPECTION REPORT NO. 50-302/91-25
REPLY TO NOTICE OF VIOLATION

VIOLATION I.A

Technical Specification (TS) section 3.3.2.1 requires that the Engineered Safety Feature Actuation System (ESFAS) instrumentation channels shall be OPERABLE as stated in Table 3.3-3. TS Table 3.3-3 states that two out of three channels of the "Reactor Coolant System Pressure Low" ESFAS instrumentation for High Pressure Injection must be available in Modes 1, 2, or 3.

Contrary to the above, on December 8, 1991, at 3:13 a.m., the "Reactor Coolant System Pressure Low" ESFAS instrumentation for High Pressure Injection was not OPERABLE or available while the reactor was in Mode 3. Specifically, at 3:13 a.m., a licensed operator bypassed all three channels of both trains for over six minutes during a Reactor Coolant System (RCS) pressure transient. The bypass of these channels disabled automatic High Pressure Injection, Diverse Containment Isolation, Emergency Feedwater Initiation and Control, and start of the Emergency Diesel Generators. As a result, the system failed to automatically actuate when called upon by a valid low RCS pressure condition.

This is a Severity Level III Violation (Supplement I).
Civil Penalty - \$50,000

Admission or Denial of the Alleged Violation

Florida Power Corporation (FPC) accepts the violation.

Reasons for the Violation

The cause of prematurely bypassing ESFAS for this event was personnel error during a slow paced transient that did not invoke the use of Emergency Operating Procedures and was outside the bounds of Operating Procedures.

Corrective Steps That Have Been Taken and the Results Achieved

As a short term corrective action, an entry was placed in the Operations Study Book (OSB-9112.04) on December 16, 1991 providing a basis and instructions for bypassing the ESFAS, including when/when not to bypass, and the necessary follow-up actions to take after bypassing. This guidance was reviewed with licensed operators prior to restart and during requalification classes. The shift on duty at the time of the subject incident was given remedial training prior to continuing control room duties.

As a long term corrective action, procedural guidance has been incorporated in A1-500, Conduct of Operations, for bypassing of ESFAS, including the proper authorization necessary to bypass.

Corrective Steps That Will Be Taken to Avoid Further Violations

The changes made to AI-500, Conduct of Operations, in addition to routine requalification training for AI-500, should preclude recurrence.

Date Full Compliance Will Be Achieved

Full compliance was achieved on December 16, 1991.

VIOLATION II.A

TS 6.8.1 requires that written procedures shall be established, implemented, and maintained as recommended in Appendix "A" of Regulatory Guide 1.33, November 1972. Appendix "A" recommends procedures for correcting abnormal or alarm conditions. Abnormal Procedure AP-380, "Engineered Safeguards Actuation," states in follow-up action 3.14 to "Close RCV-13."

Contrary to the above, on December 8, 1991, procedures for correcting abnormal conditions were not implemented in that RCV-13 (the pressurizer spray block valve) was not closed in accordance with Abnormal Procedure AP-380. As a result, the RCS pressure transient was not terminated until 35 minutes after the Engineered Safeguards Actuation occurred.

This is a Severity Level IV Violation (Supplement I)

Admission or Denial of the Alleged Violation

Florida Power Corporation (FPC) accepts the violation.

Reasons for the Violation

The cause of missing step 3.14 of AP-380 was personnel error due to noncompliance with Administrative Procedures. AP-380 was prematurely exited without ensuring all applicable steps were performed.

Corrective Steps That Have Been Taken and the Results Achieved

As short term corrective action, temporary guidance was placed in the Operations Study Book (OSB-9201.03) on January 10, 1992 that provides additional clarification for the use of Emergency and Abnormal procedures while mitigating the effects of unusual events or returning the plant to normal operation. Training was given to the licensed operators for entering and exiting Abnormal/Emergency procedures.

As long term corrective action, additional procedural guidance has been incorporated in AI-500, Conduct of Operations, for completing follow-up steps required by Emergency and Abnormal Procedures.

Corrective Steps That Will Be Taken to Avoid Further Violations

The changes made to AI-500, Conduct of Operations, in addition to routine requalification training for AI-500 should preclude recurrence.

Date Full Compliance Will Be Achieved

Full compliance was achieved on January 10, 1992.

VIOLATION II.B

10 CFR 50.54(q) requires that a licensee follow and maintain in effect emergency plans which meet the prescribed standards. The licensee's Radiological Emergency Response Plan (RERP) was developed using the guidance of NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness Support of Nuclear Power Plants." RERP Section 8.2 states "Emergency Action Levels are used to assure that the initial classification of emergencies can be accomplished rapidly, based on specific instrument readings, alarms, and observations...." RERP Section 13.1 states "For each emergency classification... the Emergency Coordinator shall assure that those assessment activities required to identify fully the nature of the emergency are completed quickly...." RERP Table 8.1 indicates that an "Unusual Event" was the appropriate Emergency Action Level classification for a valid actuation of ECCS and required prompt notification of offsite authorities.

Contrary to the above, on December 8, 1991, the RERP reporting requirements applicable for notification of offsite authorities were not properly implemented. A valid actuation of the High Pressure Injection portion of ECCS occurred, with discharge into the RCS, which was not rapidly classified as an Unusual Event nor promptly reported to offsite authorities. High Pressure Injection actuated at 3:19 a.m., and an Unusual Event was declared at 4:55 a.m., 96 minutes after the High Pressure Injection. Authorities for the State of Florida were notified of the Unusual Event at 5:15 a.m., almost two hours after the High Pressure Injection.

This is a Severity Level IV Violation (Supplement VIII).

Admission or Denial of the Alleged Violation

Florida Power Corporation (FPC) accepts the violation. FPC agrees that classification of the event was not prompt, however, notifications associated with the declaration of the Unusual Event were made to the State within 15 minutes of the emergency declaration (the NRC was notified within one hour). Notification time requirements are based on the time of emergency declaration not the time of the event. Additionally, the NOV states that the State authorities were notified of the Unusual Event at 5:15 a.m. (20 minutes after declaration). The Unusual Event was declared at 4:55 a.m.; notifications to the State and local authorities began at 4:57 a.m. The time of notification cited in the NOV (5:15 a.m.) was the time logged after: 1) the initial call was made; 2) the roll call of Citrus County, Levy County, and the Department of Health and Rehabilitative Services was completed; 3) the form was read twice; and 4) questions were answered. The final time block on the State of Florida Notification Form is completed when all of the above have occurred. This

is not the time of initial notification. Depending on the complexity of the event, this process may take 20-30 minutes.

Reasons for the Violation

The untimeliness of required actions regarding this event was personnel error.

Corrective Steps That Have Been Taken and the Results Achieved

- On December 11, 1991 our Nuclear Operations Peer Evaluator provided additional instruction to our Nuclear Shift Supervisors regarding the requirements for timely reporting events.
- On December 16, 1991, Nuclear Shift Supervisors, Assistant Nuclear Shift Supervisors, and the Shift Operations Technical Advisors were directed to review EM-202, Classification of Postulated Accidents.
- Prior to this event FPC initiated action to begin implementing Monthly Classification Drills. On January 20, 1992, the first drill was conducted.

Corrective Steps That Will be Taken to Avoid Further Violations

All qualified Emergency Coordinators will be required on a periodic basis to analyze an emergency classification scenario and establish the correct Emergency Action Levels. All Shift Supervisors and Assistant Shift Supervisors will review the EALs on a semi-annual basis as a part of the quarterly procedure review process.

Date Full Compliance Will Be Achieved

June 30, 1992.

VIOLATION II.C

10 CFR 50.72 (b)(1)(iv), requires that the licensee shall notify the NRC as soon as practical and in all cases within one hour of the occurrence of any event that results in or should have resulted in Emergency Core Cooling System (ECCS) discharge into the RCS as the result of a valid signal.

Contrary to the above, on December 8, 1991, the licensee did not notify the NRC within one hour of an event that resulted in the ECCS discharge into the RCS. A valid actuation of the High Pressure Injection portion of the ECCS occurred, with discharge into the RCS, at 3:19 a.m. The NRC was notified at 5:32 a.m., two hours and thirteen minutes after the High Pressure Injection.

This is a Severity Level IV Violation (Supplement I).

Admission or Denial of the Alleged Violation

Florida Power Corporation (FPC) denies the violation. The reporting requirements discussed under Violation II.B supersede those discussed in this violation. In particular, 10 CFR 50.72 (a)(4) states that when making a report in accordance with the requirements noted in (a)(3), which further states that the licensee shall notify

the NRC immediately after notification of the appropriate State or local agencies and not later than one hour after the time the licensee declares one of the Emergency Classes, the licensee shall identify:

- the Emergency Classification declared, or either
- (b)(1) "One-Hour Report", or
- (b)(2) "Four-Hour Report"

as required by the governing paragraph for the Non-Emergency Event.

10 CFR 50.72 (b)(1) states that if a report is not made under paragraph (a), for Emergency Class declarations, then the licensee shall notify the NRC within one hour of any event as described in this paragraph (for non-emergency events). This further clarifies that notifications are either emergency or non-emergency and reported under separate requirements making them mutually exclusive.

Another fact that appears to complicate this issue, relating to reporting/notification requirements, is that an Emergency Action Level (EAL) requiring declaration of an Unusual Event (UE) uses the same conditions as one of the Non-Emergency Events requiring a one hour report, 10CFR50.72 (b)(iv). It should be noted that a valid signal resulting in a ECCS discharge into the RCS will always be reported under 10CFR50.72 (a) and not under 10CFR50.72 (b)(1)(iv) as long as the EAL uses the same trigger.

Therefore, we believe that although declaration of the UE was not timely, all notifications were made in accordance with existing regulations. Since notification under 10CFR50.72 (b)(1) is not required when an Emergency Class is declared, this alleged violation should be withdrawn.

VIOLATION II.D

10 CFR Part 50, Appendix B, Criterion XVI, requires measures be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, and deviations are promptly identified and corrected.

Contrary to the above, conditions adverse to quality were not promptly identified and corrected. Repetitive malfunctions of the pressurizer spray valve (RCV-14) position indication that occurred in June 1990, and July 1991, were not effectively corrected. As a result, on December 8, 1991, the RCV-14 valve malfunctioned resulting in a reactor coolant system pressure transient and erroneous indication of the valve position as closed when the valve was stuck open.

This is a Severity Level IV Violation (Supplement I).

Admission or Denial of the Alleged Violation

Florida Power Corporation (FPC) accepts the violation. In June 1990 during Refuel 7, RCV-14 was completely overhauled. The operator was removed and replaced with a rebuilt one. The valve was disassembled, inspected, and rebuilt with a new valve stem and disk. This work was undertaken to install "live load" packing and was scheduled for replacement based on earlier engineering analysis. This analysis said that the operator should be changed on a refueling basis. The post maintenance test

was successfully completed and the valve was returned to service. A troubleshooting activity to correct a position indication problem was completed on October 13, 1990, resulting in the reset of the limit switch. The position indication problem recurred and was corrected on December 17, 1990 by replacing the operator with a rebuilt one from spares. The next work activity on RCV-14 was performed in November of 1991. The operator was again removed to allow repack of the valve and perform a root cause determination of the recurring position indication problems on the operator that was removed. The work was completed and the valve was tested and returned to service on November 18, 1991. Following the plant restart and return to full power, the valve malfunctioned and a pressure transient occurred on December 8, 1991. The valve stuck in the open position while the indication in the control room erroneously indicated the valve was closed.

Reasons for the Violation

The analysis conducted during the troubleshooting and rebuild activities following the plant shutdown determined that the root cause of the valve failure was a missing valve stem anti-rotation key and retaining bolt. The cause for the missing anti-rotation key cannot be positively determined; however, it is assumed to be personnel error in conducting maintenance on the valve.

The function of the anti-rotation key is to prevent stem rotation during valve actuation. If the stem rotates during valve actuation, the normally "fixed" timing established during MOV testing between the stem's position and the limit switch is lost. Each successive operation of the valve will increase the error in position indication. The inspection of the valve after disassembly showed the valve stem to be within 1/32" of the backseat despite the control room indication that the valve was closed.

The valve stuck open as a result of packing material which had become wedged between the valve stem and both the carbon spacer ring and the lantern ring. This wedging action created an extremely high running load such that when the valve was required to close, the close contacts on the torque switch opened, securing power to the motor operator. It is believed that the packing became damaged as a result of the sliding/rotating action of the valve stem, along with the braided ring's close proximity to the stuffing box leakoff connection. A loss of radial preload in the middle braided ring may have been experienced, causing the ring to move and chafe under the motion of the valve stem. As the middle braided ring continued to chafe, strands of the ring began to migrate into the annular space between the valve stem and the two spacers. Eventually, enough of the ring was drawn into this space to cause the MOV torque switch to trip.

The investigation performed by FPC indicates the key retaining bolt (and presumably the key) were installed in January 1990 as evidenced in a photograph of this valve assembly. The only practical opportunity for removal of this device was during the valve overhaul performed during Refuel 7 in June 1990. This anti-rotation key is removed to facilitate the valve disassembly. During subsequent work activities on the valve operator, it was not detected that the anti-rotation key was missing since it was not easily observable nor needed to be removed for valve operator work.

Corrective Steps That Have Been Taken and the Results Achieved

A new anti-rotation key was installed December 19, 1991, the valve was completely overhauled, the rebuilt operator installed, circuit logic tests completed, and MOV testing completed satisfactorily.

Corrective Steps That Will Be Taken to Avoid Further Violations

- Maintenance procedures (MP-182, MP-120, MP-118) have been enhanced to include specific guidance on the installation of the anti-rotation key during valve maintenance and sign-off for installation of the key.
- A review of other valve applications with similar devices has been conducted and the appropriate valves have been inspected, except DHV-91 which will be inspected during Refuel 8.
- Workers have been encouraged to utilize a more questioning attitude during normal maintenance and troubleshooting activities.
- A planned comprehensive Reactor Building walkdown was conducted at the beginning of Refuel 8 to look for deficiencies/abnormalities. Prior to restart, a closeout walkdown will be conducted as further assurance that any deficiencies/abnormalities are corrected.
- A new procedure (an AI) is being developed to conduct targeted inspections of the Reactor building (RB) and its systems by key managers, prior to restart from major outages, that exceeds the requirements of Tech Specs.

Date Full Compliance Will Be Achieved

Full compliance will be achieved prior to restart from Refuel 8.