



Florida Power

CORPORATION

Crystal River Unit 3

Docket No. 50-302

November 4, 1996
3F1196-07

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555-0001

Subject: Notice of Violation (NRC Inspection Report No.50-302/96-09)
NRC to FPC letter, 3N1096-03, dated October 4, 1996

Dear Sir:

In the subject Inspection Report, Florida Power Corporation (FPC) received a Notification of Violation. Please accept this correspondence as our response.

Sincerely,

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

PMB/RLM

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

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**FLORIDA POWER CORPORATION
NRC INSPECTION REPORT NO. 50-302/96-09
REPLY TO A NOTICE OF VIOLATION**

VIOLATION 50-302/96-09-01

Technical Specifications (TS) 5.6.1.1 requires written procedures be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978. RG 1.33, Appendix A, requires administrative procedures regarding procedure adherence. AI-400E, Performance and Transmittal of Procedures, paragraph 1.1, Policy, states that verbatim compliance of procedures is required, but procedures must not be blindly followed.

PT-366, Toxic Gas Detection System Calibration, Step 4.7.1, directs the SAMPLE/ZERO switch be placed in the ZERO position.

Contrary to the above, on August 13, 1996, a technician failed to follow the requirements of PT-366, Toxic Gas Detection System Calibration, Step 4.7.1, and placed the SAMPLE/ZERO switch in the OFF position, resulting in the inadvertent initiation of the control room emergency ventilation system.

ADMISSION OR DENIAL OF THE ALLEGED VIOLATION

Florida Power Corporation (FPC) accepts the violation.

REASON FOR VIOLATION

The reason for the violation was personnel error. During the performance of PT-366, the lead Instrument and Control (I&C) Technician made a decision to leave an unqualified technician to perform a step in the procedure. The lead technician did not review the procedure with the unqualified technician before he left to go to the control room. The lead technician then called from the control room and tried to talk the unqualified technician through the step by telephone. The unqualified technician then tried to perform the step from memory instead of using his copy of the procedure. This resulted in the unqualified technician operating the incorrect switch and the inadvertent initiation of the control room emergency ventilation system.

The use of an unqualified individual to perform a task independently is a violation of Training Department Procedures and The Nuclear Maintenance Manual. The individual had not been trained adequately in the use of procedures, communications, or in the Stop, Think, Act, Review (STAR) concept.

A contributing factor was that shop supervision had not reinforced Event Free Operations which includes procedure adherence, STAR, and elimination of undesirable events such as inadvertent actuation of equipment.

CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

The lead technician for this task was counseled by management on the inappropriateness of his decision to allow a technician who was not qualified to perform work independently.

A two hour plant wide stand down meeting was held on August 14, 1996 to review the incident and emphasize the use of The Event Free Operation (EFO) Program and reemphasize the tools available to personnel to prevent the occurrence of errors. The review included emphasis on the requirement for trained personnel to perform work at CR-3.

Training was conducted for all temporary personnel assigned to the shop that had not received STAR or procedure use training.

A maintenance study book entry, a required review for all maintenance personnel, was made to review the event and included emphasis on the use of STAR, use of qualified personnel to perform independent tasks and the need to provide training to temporary personnel.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

Maintenance will require that all new personnel complete the Maintenance Department Employee Orientation Checklist of The Nuclear Maintenance Manual before they are assigned to work on plant equipment. This orientation provides a forum for the employee's supervisor to discuss and emphasize specific points which are considered vital to our safe, legal, and efficient maintenance and operation concept. A letter will be issued clarifying this requirement placing emphasis on technician qualification requirements and EFO concepts.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved upon the successful completion of PT-366 and with the two hour plant stand down on August 14, 1996. The additional corrective actions noted above will be completed by November 15, 1996.

VIOLATION 50-302/96-09-02

The Crystal River Physical Security Plan, paragraph 5.5.1, requires that all personnel not issued a yellow or green identification badge be handled as visitors and be escorted at all times while within the protected or vital areas.

Contrary to the above, on August 14, 1996, at approximately 11:45 a.m., an escort person failed to maintain a visitor under surveillance, in that an unescorted vendor was observed in the Technical Support Center.

ADMISSION OR DENIAL OF THE ALLEGED VIOLATION

Florida Power Corporation (FPC) accepts the violation.

REASON FOR THE VIOLATION

Based upon a root cause evaluation, FPC failed to have adequate measures in place to ensure that contract escorts and their visitors had sufficient knowledge to perform their tasks. It was determined that the escort and visitor process requirements need to be strengthened for contract escorts in particular and all visitors in general.

Contractors are not normally placed in the role of an escort and are therefore not as familiar with the requirements as a regular employee. Additionally,

visitors have in the past relied completely upon the escort for all of the knowledge of the requirements while in the protected area. If the escort and the visitor have more awareness of the escort/visitor program, each could have acted as a check on the other.

CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

Based on this most recent incident coupled with an earlier escort failure during Refuel 10, immediate restrictive controls on escorting visitors were established. Common issues from both incidents caused FPC to change the visitor to escort ratio for the protected and vital areas. The visitor to escort ratio was reduced from "10 to 1" in the Protected Area and "5 to 1" in the Vital Areas to "1 to 1" when the escort was either a temporary FPC badged employee or a badged contractor employee (except Security personnel). These immediate restrictive actions were in place from August 15 to September 9, 1996, when the following changes to the escort and visitor process were implemented:

- 1) The Facility Access Log was modified to improve human factors involved with the escorting and visitor process. A visitor and escort questionnaire was developed and implemented to assure both the visitor and escort have a complete understanding of the CR-3 expectations concerning escort and visitor requirements.

- 2) All escorts are issued a two-sided, laminated "escort" badge. Wearing of this badge by escorts has a two-fold purpose: (1) the badge clearly identifies the individual as an escort, and (2) it contains the key escort control rules on one side of the badge and emergency transfer guidelines on the other side.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

Based on the common root cause of these incidents, Nuclear Training is in the process of developing a video to be administered to all visitors. This video will add emphasis and improve communication of CR-3's expectations to our visitors for their conduct while on site. The use of this video will be implemented no later than December 30, 1996.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on August 15, 1996 with the implementation of the immediate restrictive controls.

VIOLATION 50-302/96-09-03

10 CFR 50.59, Changes, Tests, and Experiments, in part, allows the licensed facility to make changes in the facility or procedures as described in the Safety Analysis Report, without prior Commission approval, unless the proposed change involves an unreviewed safety question. The licensee shall maintain records of changes in the facility or changes in procedures, to the extent that these changes constitute changes in the facility or changes in procedures as described in the safety analysis report. These records must include a written safety evaluation, which provides the bases for the determination that the changes do not involve an unreviewed safety question.

FSAR Section 4.1.2.7, Table 4-10 and Table 9-3 specify that the hydrogen in the reactor coolant system shall be between 15 - 40 standard cc/kg of water. These requirements were implemented by Procedures CH-400, Nuclear Chemistry Master Scheduling Program, and CP-142, Primary Chemistry Guidelines.

Contrary to the above, by verbal directive of management in 1993, the reactor coolant system hydrogen concentration was changed from 15 - 40 cc/kg of water to 25 - 50 cc/kg of water, without a written safety evaluation report to provide the bases for the determination that the change did not involve an unreviewed safety question. The change to the implementing procedures, CH-400 and CP-142, occurred in December 1995, again without a written safety evaluation report to provide the bases for the determination that the changes did not involve an unreviewed safety question.

ADMISSION OR DENIAL OF THE ALLEGED VIOLATION

Florida Power Corporation (FPC) accepts the violation.

REASON FOR THE VIOLATION

The procedure revisions made in December, 1995, were not performed with an adequate FSAR review in that it was not identified at that time that Tables 4-10 and 9-3 listed typical RCS dissolved hydrogen concentrations. These Tables should have been revised to reflect the new limits at the time of the procedure revision. The inadequate review was the result of personnel oversight in identifying needed changes to the FSAR during the procedure review process. The procedure review did identify and state that the FSAR design basis accident information, Chapter 14, contained information evaluating the hydrogen concentration in the RCS from 14 - 50 cc/kg, thereby bounding the condition of the procedure changes. Thus, no unreviewed safety question was created. A written safety evaluation would have been performed if the FSAR Tables in question had been identified as needing change.

Crystal River Unit 3 management verbally directed that the concentration of hydrogen in the Reactor Coolant System (RCS) be maintained consistent with the EPRI Chemistry guidelines of 25 - 50 cc/kg. The intent at that time was to administratively raise the lower limit for dissolved hydrogen in the RCS to 25 cc/kg. Management did not recognize that the verbal directive to bring hydrogen concentrations into compliance with existing industry guidance could be considered a change to the facility and procedures which may require a written safety evaluation. However, FSAR Chapter 14, Section 14B.3.2.3 states that the RCS is evaluated at levels between 14 and 50 cc/kg dissolved hydrogen as part of the safety analyses for hydrogen evolution from the coolant. This evaluation bounds both of the hydrogen limits discussed above. Therefore, the directive did not constitute a change that involved an unreviewed safety question.

CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

FSAR Tables 4-10 and 9-3 were revised on March 12, 1996, to reflect the 25 - 50 cc/kg range for RCS hydrogen concentrations contained in CP-142 and CH-400. A written safety evaluation was performed on the FSAR change.

The individual involved had previously identified the discrepancy and initiated the March, 1996, FSAR change. Sensitivity to the process for the review of the FSAR during procedure revisions has been increased within the Chemistry

Department. In addition, this issue and the lessons learned have been reviewed by the CR-3 cognizant management.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

The Chemistry Department established a procedure writer position in August, 1996, to assure a standard and consistent approach to procedure changes. The individual in this position has been instructed as to the proper review of the FSAR during procedure changes, and will receive 10 CFR 50.59 training, as well as causal analysis training as these classes are made available.

To improve overall awareness of the FSAR control and change process, details of this event will be used as an example during the Supervisor Workshop on Safety Culture being developed as part of Management Corrective Action Plan (MCAP)-II.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved with the revision of FSAR Tables 4-10 and 9-3 on March 12, 1996.

VIOLATION 50-302/96-09-04

10 CFR 50, Appendix B, Criterion III, Design Control, in part, requires that measures be established to assure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2, Definitions, and as specified in the license application are correctly translated into procedures and instructions.

Contrary to the above, design requirements were not correctly translated into procedures. Specifically, the 100 percent reactor power value was increased in 1981 from 2472 MWth to 2544 MWth and Operating Procedure OP-103A, Startup Curves, was not updated to correct for this increase until July 21, 1995.

ADMISSION OR DENIAL OF THE ALLEGED VIOLATION

Florida Power Corporation (FPC) accepts the violation.

REASON FOR THE VIOLATION

A review of the documentation associated with the 1981 power level upgrade leads to the conclusion that the cause of the violation was personnel error. The power level upgrade was first proposed in 1977 and required the addition of Reactor Coolant Pump Power Monitors (RCPPMs). The installation of the RCPs and other support hardware began in 1978 under modification packages 78-08-15-00 and 78-08-15-00A through 78-08-15-00H. In reviewing these modification packages, it appears that procedural changes were identified only for the RCPs and hardware installation.

When Technical Specification Amendment 41 was issued on July 21, 1981, an inadequate review of the amendment for procedure changes was performed. Operations should have identified the requirement to revise OP-103A for the power level upgrade.

CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

As noted in the violation, OP-103A was revised in 1995 to provide the updated curves. Our current program for plant modifications and Technical Specification amendments was reviewed and no programmatic changes are believed to be necessary. For example, when it was again planned to raise power level last year, the modification packages identified the appropriate procedures, including OP-103A, as being affected.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

A sampling of additional packages for safety system modifications will be conducted to ensure the appropriate operations procedures were identified and revised. Should problems be discovered, additional corrective actions will be implemented based on the extent of condition. This sampling will be completed by December 15, 1996.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on July 21, 1995.

VIOLATION 50-302/96-09-05

10 CFR 50, Appendix B, Criterion III, Design Control, in part, requires that measures be established to assure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2, Definitions, and as specified in the license application are correctly translated into procedures and instructions.

Contrary to the above, design requirements were not correctly translated into procedures. Specifically, the design of valve MUV-64 was changed from a disabled, air operated valve (locked in the open position) to a manual, gear driven, chain operated valve, without issuing procedure changes to reflect the intended use and operation of the valve.

ADMISSION OR DENIAL OF THE ALLEGED VIOLATION

FPC respectfully denies the violation. FPC, as discussed below, does not consider closure of MUV-64 to be necessary to mitigate any design basis events. Further, it does not have any design basis functions as defined by 10 CFR 50.2 and related regulatory guidance. We do, however, understand how the NRC could have understood our own documentation differently and will explain our differences.

BASIS FOR DENIAL

The change to MUV-64 (from locked open to chain wheel available for closure) was correctly reflected in the operating procedure containing the system line-up. That appropriately addresses its operational or maintenance use.

In our discussion with NRC inspection and management personnel, it would appear that some of FPC's internal correspondence generated as part of the conceptual decision process which was included in the modification package may have led to this misunderstanding. In late 1994 and 1995 there were a number of related studies, problem investigations and analyses underway. There was a possibility

that we would find it necessary to have the capability for manual closure of MUV-64 to mitigate a design basis event. That turned out to be not true by the time the modification was installed and incorporated into the plant procedures. At that point, we evaluated the modification and concluded there was neither a requirement to nor a technical basis for inclusion of it in our EOPs. Upon careful reflection, we continue to believe this to be true.

FPC does not believe any applicable requirements were violated. The Notice of Violation references 10 CFR 50, Appendix B, Criterion III as the requirement violated. The reference to design bases notes that Appendix B is referring to the design basis "as defined in 50.2 and as specified in the license application." We agree that such aspects of the design basis should be "correctly reflected into procedures and instructions." The NRC has distinguished between the overall design basis and a more specific and limited design basis defined in 10 CFR 50.2. In NUREG-1397 (and related correspondence including reference to it in the 10 CFR 50.54(f) request recently issued) the NRC uses the term engineering design basis for the broader set of "design considerations implemented to optimize the system design for operational, maintenance, procurement, installation, or construction reasons." This is contrasted with "the design bases of the facility are a subset of the current licensing bases and are contained in the FSAR and other docketed information used by the staff in judging the acceptability of a facility vis-a-vis the health and safety of the public."

FPC believes the NRC staff agrees that MUV-64 closure is not necessary to mitigate any design basis event. Therefore, use of MUV-64 is not part of the design basis as defined in 50.2 and thus, 10 CFR 50, Appendix B, Criterion III does not apply.

Based on the above discussion, FPC respectfully requests the NRC retract this violation.

VIOLATION 50-302/96-09-06

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

Contrary to the above, as of May 10, 1996, the licensee had failed to implement prompt corrective actions for Emergency Feedwater Initiation and Control operational problems and concerns. Some of these problems and concerns dated back to 1986. Corrective modifications were funded in 1994 for installation during Refueling Outage 10 (spring 1996). However, with the approach of Refueling Outage 10, these modifications were deferred until Refueling Outage 11, over the concerns expressed by operations management and the Plant Review Committee.

ADMISSION OR DENIAL OF THE ALLEGED VIOLATION

Florida Power Corporation (FPC) accepts the violation.

REASON FOR THE VIOLATION

The root cause of this violation was inadequate management oversight in that insufficient manpower was provided to support the identified goals/objectives.

FPC management had focused its attention to the resolution of several high profile issues that were demanding engineering resources. In particular, efforts were underway to provide corrective actions associated with the Makeup Tank issue and the Setpoint Action Plan. The Setpoint Action Plan required the revision/upgrade of many Instrumentation & Control (I&C) uncertainty calculations to present day standards. This effort was associated with NRC commitments and therefore had to be completed in a timely manner. Over 70% of Nuclear Operations Engineering I&C resources were dedicated to resolving these two issues.

FPC management was also not effective in resource management in that staff augmentation should have been provided to support the 10R Emergency Feedwater Initiation and Control (EFIC) modification target date. In addition, FPC was not sufficiently sensitive to the importance of reducing operator burden and increasing design margin in this system on a timely basis.

CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

1. All Requests for Engineering Assistance (REA) requesting a plant modification must be approved by the Plant Modification Review Group (PMRG). This group will consider reduction of operator burden and improving design margin as high priority items.
2. A MUST DO & HIGH WANT modification list has been developed and is maintained by PMRG to ensure appropriate resources are applied. The EFIC upgrades are listed as a MUST DO project for the current fuel cycle. Items may not be removed from the cycle MUST DO list without approval of the PMRG.
3. The following high priority EFIC/EFW issues are being addressed during our present shutdown:
 - a. NPSH concerns
 - b. ASV-204 auto opening from "A" EFIC
 - c. Availability of EFP-2 with loss of "B" battery
 - d. Modification of the EFIC level compensation module

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

Management has committed to provide additional resources to ensure high priority tasks are worked:

- a. Seven new positions have been created in design engineering of which most have been filled.
- b. Additional contract engineering support has been made available to address the MUST DO items.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

The highest priority EFIC/EFW concerns are being addressed in the current extended outage. Remaining EFIC/EFW modifications will be completed by the end of Refuel 11.

VIOLATION 50-302/96-09-07

10 CFR 50, Appendix B, Criterion III, requires the licensee to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. For this to be accomplished, the values of parameters (e.g., equipment input amperage) used in design calculations and the design inservice inspection boundaries specified through drawings and the inservice inspection program must be correct.

Contrary to the above, on March 10, 1996, the licensee had failed to assure that applicable regulatory requirements and the design basis were correctly translated into specifications, drawings, procedures, and instructions in that:

- (1) The design input current used in calculations for safety related battery charger (MAR 93-05-07-01) and 4160/480 volt transformer (MAR 95-08-22-01) replacements were incorrect. The input current used in the calculations was 56 amperes, whereas the correct value was 62 amperes.
- (2) The inservice inspection class 2/3 makeup system boundary shown on FSAR drawing FD-302-661, sheet 4, was not moved from valve MUV-64 to valve MUV-65 in 1984, when the Engineered Safeguard signal was removed from MUV-64. With that change, MUV-64 could no longer be considered a boundary, as it was opened and would not automatically close to provide a boundary.

ADMISSION OR DENIAL OF THE ALLEGED VIOLATION

Florida Power Corporation (FPC) accepts the violation.

REASON FOR THE VIOLATION

The reason for the first example is that the receipt inspection process did not include steps for verifying nameplate data against the equipment purchase order. Additionally, there was no requirement for the design engineer to acknowledge verification of the vendor test report results, against the design inputs, prior to release of the component from material receiving.

The reason for failing to update drawing FD-302-661 Sheet 4 was a lack of adequate interface between the mechanical and electrical design engineering disciplines.

CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

The receipt inspection process has been changed to require the receipt inspector to compare the equipment nameplate data to the purchase order requirements and to document the results. The Equipment Software Acceptance Letter (ESAL) has been changed to require the design engineer to verify the vendor test report results against the specification requirements and acknowledge acceptance prior to release of material from the receiving warehouse.

Correspondence NED96-0357 titled "Engineering Design Errors" was issued on June 13, 1996, as a result of the battery charger input error. The correspondence contains a management expectation to walkdown new hardware for modifications and ensure the nameplate data matches the Purchase Order and specification requirements. The correspondence was sent to all engineering personnel and was placed in the department "Industry Experience / Lessons Learned" manual.

A procurement self-assessment has been completed which sampled 10 electrical and 10 mechanical procurement packages for deficiencies similar to the nameplate violation above. As a result, one additional discrepancy was discovered with motor space heater rating (on a spare motor in the warehouse) and therefore the electrical procurement sample was expanded to a total of 30 with no additional discrepancies noted.

Drawing FD-302-661 Sheet 4 has been revised to move the code classification boundary to MUV-65.

The Design Review Board (DRB) process has been enhanced to improve interdisciplinary reviews at the conceptual and final design phase to identify actions required of interfacing design groups or other Nuclear Operations departments.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

FPC believes the code classification break problem described in the violation above to be an isolated incident. However, to assess the extent of condition, FPC will review the LER file and sample other modification packages involving valve or valve position changes to determine if a generic problem exists by December 1, 1996.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved upon revision of the drawing FD-302-661 and the revision of the appropriate calculation.