Florida Power

CORPORATION
Crystal River Unit 3
Docket No. 50-302

July 1, 1997
3F0797-09

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

Subject: Reply to Notice of Violation, NRC Inspection Report No. 50-302/97-05, NRC to FPC letter, 3N0697-01, dated June 2, 1997

Gentlemen:

In the subject letter, Florida Power Corporation (FPC) received Notices of Violation. This correspondence provides our response to the violations.

Sincerely,

John Paul Cowan
Vice President
Nuclear Production

JPC/dwh

Attachments

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

ATTACHMENT 1

NRC INSPECTION REPORT NO. 50-302/97-05
REPLY TO NOTICES OF VIOLATION

NOTICE OF VIOLATION 50-302/97-05-01

Technical Specification (TS) 5.6.1.1, requires that written procedures be established, implemented, and maintained for the activities recommended in Appendix A of Regulatory Guide 1.33, Quality Assurance Program Requirements, Revision 2, February 1978. This includes procedures required for the tagging and control of plant equipment.

Compliance Procedure (CP) 115, Nuclear Plant Tags and Tagging Orders, Revision 74, Sections 4.10.36 and 37, requires, in part, that the individual who removes a tag from a device after clearance release and the individual who performs the verification of tag removal must initial and date spaces 36 and 37 respectively on the tagging form. Section 4.3.1 requires that all tagged components listed on a tagging order must be verified in their correct position. Sections 4.10.30 and 31 require the individual who positions and tags the device and the individual who performs the verification of the positioning and tagging to initial and date spaces 30 and 31 respectively. Section 4.1.4 requires Operations personnel to normally execute all tagging orders unless a specific exemption is granted. Section 3.1.8 defines a clearance as a tagging order issued for the performance of maintenance utilizing red tags on all boundary valves necessary to provide positive assurance a system or component has been properly isolated or vented.

Contrary to the above, in the following examples, the licensee failed to accomplish activities affecting quality in accordance with procedures:

1. On March 27, 1997, red tags from released Electronic Clearance Order (ECO) 96-012-98 were found on the 4160 volt breaker cubicles for the A and B makeup pumps. On January 17, 1997, ECO 96-012-98 was authorized for removal and both tags were signed and independently verified as removed in spaces 36 and 37 of the tagging form.

2. On April 3, 1997, Electronic Clearance Order 97-03-189 authorized fuel handling crane (FHCR) 7 to be tagged for preventive maintenance. The tag to be hung on the local disconnect switch labelled "FHCR-7 MAIN DISC" was incorrectly hung on the disconnect switch for the spent fuel pool gate hoist labelled "SFHT - 3 TON YALE MONORAIL HOIST." Spaces 30 and 31 were initialed and dated indicating the tag was hung on FHCR-7.

3. On April 21, 1997, a maintenance foreman found a red tag from electronic clearance order 97-04-114 labelled for Valve CHV-60 hung on Valve SWV-60, the cooling water inlet to control complex compressor 1B. The tag had been hung by an operator, verified by a second operator, and then verified again by a licensed Senior Reactor Operator. Spaces 30 and 31 were initialed and dated indicating the tag was hung on SWV-60.

4. On April 12, 1997, a Shift Supervisor discovered a red tag for electronic clearance order 97-03-164 hanging on an intact and connected air supply line to the main turbine turning gear that stated that the position of the air line was disconnected. The air line had been reconnected by a maintenance crew without authorization. The same crew had earlier moved the red tag from the turning gear motor, disconnected the air line, and removed the turning gear motor for maintenance. The original ECO was also inadequate since it required disconnecting an air line downstream of an untagged solenoid valve without verifying the line was vented and the solenoid positively verified closed.

This is a Severity Level IV Violation (Supplement 1).

ADMISSION OR DENIAL OF THE ALLEGED VIOLATION

FPC accepts the violation.

REASON FOR THE VIOLATION

FPC conducted a root/common cause assessment of tagging related errors. That assessment included a review of Precursor Cards generated in 1996 and selected 1997 errors against the tagging program. The review identified instances of procedural noncompliance, lack of understanding of the procedural requirements, switching and tagging training weaknesses, and inadequate reviews of clearances. Based on that assessment, actions were taken to improve the plant tagging program. A key corrective action was to revise CP-115 to simplify and improve the tagging program, which was completed on June 27, 1997.

Reasons for the specific examples identified in the above violation are identified below:

Example 1

The cause for the violation was cognitive personnel error. The individuals responsible for removing and independently verifying removal of the red tags on the A and B 4160V breaker cubicles for MUP-1B failed to remove the tags. A contributing factor was the lack of procedural guidance for placing tags for racked out breakers.

Example 2

The cause for the violation was cognitive personnel error. The individuals responsible for hanging and independently verifying the hanging of the tag on the FHCR-7 disconnect failed to ensure the tag was attached to the correct component.

Example 3

The cause for the violation was cognitive personnel error. The individuals responsible for preparing the tag, hanging the tag, independently verifying the hanging, and performing the second independent verification of the hanging of the tag on valve SWV-60 failed to recognize that the component description on the tag did not match the equipment number. The

equipment number was incorrect. However, the tag was attached to the correct component when compared to the component description on the tag. A contributing factor was performance of the second independent verification by the preparer of the equipment clearance order, which impaired his ability to be an independent verifier.

Example 4

The cause for the violation was cognitive personnel error. The maintenance crew placed the equipment in the configuration specified on the tag and moved the tag in the process. Both actions violated CP-115 requirements.

CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

Example 1

The two tags from ECO 96-012-98 were left in place while an incident investigation team determined if tags from a separate clearance may have been inadvertently removed. Research into the Equipment Clearance Order (ECO) database revealed that ECO 97-01-047 also had tags on the cubicles in question during the same time frame. ECO 97-01-047 was released on February 10, 1997 and the tags from ECO 97-01-047 were correctly removed.

An Incident Summary (Operations Instruction (OI) 12, "Incident Summary") documented that the operator who signed the removal portion of ECO 96-012-98 was interviewed and stated to the best of his knowledge the tags were removed as documented on the ECO. The active clearance (ECO 96-09-022) hanging at the time was verified to be properly hung and the tags associated with ECO 96-12-098 were subsequently removed.

On May 5, 1997, Operations Study Book Entry (OSBE) 9705.03 documented an inconsistency in how Operators tag 4160V breakers. This inconsistency was a contributing factor for the tags remaining in the field for the Makeup Pump cubicles. Some Operators would hang the tags on the racked out breaker and others would hang the tag on the chain provided inside the breaker cubicle. The required position in most cases would simply state "Racked Out" which was left to interpretation for tag placement. The Manager, Nuclear Plant Operations (MNPO) stated the expectation for a complete understanding of what the required position of the tag will be in terms of "Racked Out" or "Breaker Removed, Chain Installed." This requirement has been clarified in CP-115.

Example 2

An Incident Summary investigation was ordered by the Shift Supervisor on Duty (SSOD). The operator that initially hung the tags for ECO 97-03-189 and the operator that verified the tags were interviewed. Each individual stated a lack of self checking as the cause. Accountability sessions were held by the MNPO and the individuals' SSOD on May 5, 1997.

As an immediate corrective action, Short-Term Instruction (STI) 97-010 was issued on April 4, 1997 to restrict the issuance of clearances.

Example 3

The SSOD and Work Controls Supervisor walked down the clearance and verified the tag was incorrect. The SSOD requested that the clearance be voided and a new clearance (ECO 97-04-127) initiated. The Chief Nuclear Operator that initiated the clearance, the operator that hung the clearance and the Senior Reactor Operator (SRO) that verified the clearance were administratively removed from switching and tagging duties until completion of the investigation.

On April 24, 1997, OSBE 9704.10, "In-Plant Switching and Tagging," was issued to stress the importance of self checking by consistently implementing the Stop, Think, Act, and Review (STAR) process. The OSBE emphasized the need to successfully implement our clearance process. The OSBE also included management's expectation for accountability on future errors. The lessons learned section of the OSBE provided a step-by-step approach to correctly execute a tagging order using self checking techniques.

Example 4

An Incident Summary investigation into the sequence of events surrounding the tag was conducted. The SSOD contacted each of the operators involved in hanging the clearance to determine the as-left condition of the air line prior to clearance holder acceptance. The operators' recollection was that the air line was vented. The SSOD then contacted the MNPO to discuss the incident. The MNPO recommended that the Assistant Director Nuclear Plant Operations, the Assistant Director Nuclear Plant Maintenance and the Manager Nuclear Shift (MNS) assemble to discuss the incident. These individuals held interviews with the System Maintenance Crew (SMC) that accepted and worked the job. It was determined that conflicting information was being provided by the Operators and SMC. On April 13, 1997, the MNPO, both Assistant Directors, the MNS, the SMC crew and the Operators involved met to further discuss the issue. Several problems with the SMC crew's understanding of CP-115 guidance were identified. The misunderstandings were reviewed with the individuals and the air line was restored to the disconnected position as required by the ECO.

STI 97-012 was issued on April 13, 1997 to reiterate the purpose of CP-115 and to state the new requirements of supervisory oversight mandated by the Director Nuclear Plant Operations (DNPO). Additionally, Nuclear Plant Operations Night Order, dated April 13, 1997, entitled "CP-115" requested that all Nuclear Shift Supervisors discuss the TBM-1 air line incident with their shifts.

On April 21, 1997, a site-wide standdown was held to discuss the importance of configuration management control. The standdown included the following work groups: Operations, Maintenance (Mechanical, Electrical and I & C), SMC, Work Controls, Scheduling, Projects, Facility Services and Chemistry. Operations had the lead for establishing the training, with support provided by a Nuclear Configuration Management (NCM) group representative. The standdown began with a brief overview of management expectations by a manager from the Operations Department. This was followed up by a discussion of the current configuration management issues experienced in 1997 and how each respective shop plays a significant role in eliminating the errors. These discussions focused on the operational aspects of configuration

management and the NCM discussion focused on reference material such as drawings and the Configuration Management Information System (CMIS). The NCM discussion also included a discussion on the importance of documenting inaccuracies in reference material (drawings, CMIS, FSAR, ITS, plant labeling, etc.) on precursor cards to ensure the documents are appropriately updated.

Additional Examples Since Completion of NRC Inspection 50-302/97-05

1. On May 10,1997, ECO 97-05-064 was initiated to electrically isolate Station Air Pump 1A (SAP-1A). The original clearance was found to be inadequate during the walkdown by a Chief Electrician. An addenda to the clearance was required on May 12, 1997 to complete the clearance. The addenda contained a single tag which was intended to isolate power to the motor space heaters for SAP-1A. The incorrect breaker (#15 vice #5) was identified on the clearance and hung. As electricians began to perform work on SAP-1A, they noted that the space heaters remained energized. The root causes were inappropriate identification of work scope by the operator generating the original clearance and inadequate self checking by the operator performing the addenda.

   Nuclear Plant Operations Night Order, dated May 12, 1997, "CP-115 Switching and Tagging Near Miss, and interim corrective actions," was issued to discuss the error made during the initiation of the addenda for SAP-1A. The immediate corrective action to this error was to require all subsequent clearances to be second checked for accuracy by a licensed operator, previously an optional step in the procedure. During the investigation of the incident, it was also noted that the electrical distribution panels were not labeled with the loads the panel provided. Controlled copies of the applicable operating procedure, which depicted the loads, were placed in each AC Distribution Panel.

   A curriculum review meeting was held on May 15, 1997 to discuss future training of switching and tagging qualified personnel and the initial qualification course. The meeting was attended by representatives from Training, Operations, Chemistry, Facility Services and Maintenance. The consensus among the meeting participants was that this program needed a more personal discussion of recent issues to continuously improve the process. The meeting resulted in the decision to train personnel at different levels of detail. The determination was made to train Operations personnel and Shop Chiefs to the highest level and develop minimum standards for craft personnel to include updates on industry events, changes to the process, and a review of program requirements.

   Nuclear Plant Operations Night Order, dated June 2, 1997, entitled "CP-115" provided guidance for operation of tagged valves to address an inconsistency in the interpretation of whether a component could be manipulated prior to a clearance being accepted. The Night Order states that once a clearance has been accepted, Operations will not manipulate any red tagged component, including the tightening of boundary valves to stop leakage. If it becomes necessary to tighten a boundary valve on an accepted clearance, the normal addenda process will be followed.

On June 6, 1997, OSBE 9706.01, entitled "Motor Heaters in Electrical Clearances" discussed the SAP-1A incident. It stressed the fact that the original clearance was inadequate. The OSBE also stated that when tagging electrical motors for maintenance, it is expected that operators will ensure the equipment is safe to work.

2. On June 16, 1997, ECO 97-06-073 was found to be in error during a walkdown for acceptance of the clearance. The red tag label for the DHV-91 control switch at the Remote Shutdown Panel was incorrectly labeled "RCV-91." Upon notification of the incident by the SSOD, the Manager Nuclear Shift ordered an immediate root cause investigation. The ECO initiator, ECO verifier, operator that hung the tag and the operator that verified the hung tag were administratively removed from switching and tagging duties until completion of the investigation. A preliminary review of the incident indicates inadequate self checking by the four Operations personnel with no programmatic issues involved.

CORRECTIVE ACTIONS THAT HAVE BEEN OR WILL BE TAKEN TO AVOID FURTHER TAGGING ERRORS

CP-115, Revision 75, has been issued. The procedure was simplified by removing duplication and titles that were specific to only this procedure. Vague statements were clarified.

Training on CP-115, Revision 75, has been administered. Previously qualified switching and tagging personnel that have not received CP-115 training have had their qualifications removed. To regain their qualifications, they must arrange a training session with an Operations representative. The lecture training included a discussion of the changes to CP-115. The training also included a review of definitions, a review of participants' responsibilities, training qualifications, in-depth discussion of the new process to include a review of the new flowchart, and an explanation of the purpose and use of each tag (red, blue, white).

An assessment will be conducted by February 24, 1998, to determine effectiveness of the corrective actions taken and to evaluate compliance with CP-115.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

FPC is in full compliance.

NOTICE OF VIOLATION 50-302/97-05-03

Technical Specification 5.6.1.1 requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Quality Assurance Program Requirements (Operation), Appendix A, specifies that each safety-related annunciator have its own written procedure containing the meaning of the annunciator and the source of the signal.

Contrary to the above, as of April 4, 1997, the written procedure for annunciator SSF-A1-04-02, Inverter Trouble, did not contain the meaning of the annunciator nor the source of the signal in that alarm relay set point information was incorrect and the source of the signal was incorrect.

This is a Severity Level IV violation (Supplement 1).

ADMISSION OR DENIAL OF THE ALLEGED VIOLATION

FPC accepts the violation.

REASON FOR THE VIOLATION

The reason for the violation was cognitive personnel error. Modification Approval Record (MAR) 93-05-07-03 was written for the replacement of inverters VBIT-1A/1C. The new inverters were set up to alarm on voltage instead of current for the Battery Supplying Load event point. The design engineer understood the change in the internal circuitry but evaluated the difference, based on event points, as not being a change in function (both style alarms indicate that the AC source is not providing the power to the inverters). The design engineer was unaware that procedure Annunciator Response (AR)-701 was specific in what caused the alarm for the indicated condition.

CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

AR-701 has been revised to reflect the correct alarm relay setpoint and source of the signal.

The subject violation has been discussed with the design engineer responsible for MAR 93-05-07-03. The design engineer now understands that changes in the alarm logic should be more clearly called out in the MAR package to ensure that the impact on plant procedures can be assessed.

Nuclear Engineering Procedure (NEP) 210, "Modification Approval Records," Revision 16, has been reviewed and provides adequate guidance to the design engineer developing the MAR package. No procedure changes are considered warranted for this incident.

CORRECTIVE ACTIONS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

Nuclear Operations Engineering (NOE) personnel have reviewed (via required reading) the subject violation and interoffice correspondence provided by the Operations Department. The intent of this review was to emphasize the importance of ensuring that information contained in MARs must be sufficiently detailed to allow affected organizations to determine procedural impacts.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

FPC is in full compliance.

ATTACHMENT 2

The following table contains a listing of commitments contained in FPC's response:

RESPONSE SECTION	COMMITMENT	DUE DATE
Page 7 of 10	An assessment will be conducted by February 24, 1998, to determine effectiveness of the corrective actions taken and to evaluate compliance with CP-115.	February 24, 1998