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WALLACE,E.G. Tennessee Valley Authority
RECIP.NAME RECIPIENT AFFILIATION
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SUBJECT: Suppls 901228 response to NRC 901217 ltr re violations noted in Insp Repts 50-259/90-33,50-260/90-33 & 50-296/90-33. Corrective actions:component description found in equipment mgt sys database corrected.

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JAN 31 1991

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of	)	Docket Nos. 50-259
Tennessee Valley Authority	)	50-260
		50-296

BROWNS FERRY NUCLEAR PLANT (BFN) - NRC INSPECTION REPORT 50-259, 260, 296/90-29 - SUPPLEMENTAL RESPONSE TO NOTICE OF VIOLATION

On November 8, 1990, NRC issued the subject inspection report which cited TVA with a violation with two examples for failure to follow procedures. Subsequently, on December 17, 1990, NRC issued Inspection Report 90-33 which discussed two additional licensee-identified examples of the problem identified in the violation. In its response to the violation dated December 28, 1990, TVA committed to address these two additional examples in a supplemental response by January 31, 1991.

Enclosure 1 to this letter provides TVA's response to the two additional examples of the problem, including a discussion of each example and specific corrective actions taken. Enclosure 2 provides a listing of commitments being made in this letter.

If you have any questions regarding this response, please telephone Patrick P. Carier at (205) 729-3570.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

Mark J. Burzynski for

E. G. Wallace, Manager
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Regulatory Affairs

Enclosures
cc: See page 2

IE01
1/1

JAN 31 1991

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ENCLOSURE 1

Tennessee Valley Authority

Browns Ferry Nuclear Plant

Supplemental Response to Notice of Violation

Inspection Report Numbers
50-259, 260, 296/90-29 and 90-33

I. INTRODUCTION

On November 8, 1990, the NRC Staff issued Inspection Report 90-29 which cited TVA with a violation for failure to follow procedures. More specifically, the violation identified two examples. The first example involved personnel working within an equipment clearance boundary without proper authorization on a hold order. The second example involved an improperly completed impact evaluation of work activities which resulted in an unplanned engineered safety features actuation. Subsequently, on December 17, 1990, NRC issued Inspection Report 90-33 which discussed two additional licensee-identified examples of the problem identified in the violation.

TVA's December 28, 1990 response to the notice of violation addressed the two examples cited in the violation and committed to address these two additional examples noted in Inspection Report 90-33 in a supplemental response.

The two additional examples discussed in Inspection Report 90-33 involved failure to perform work activities on plant equipment within properly defined clearance boundaries. That is, personnel involved in both examples failed to follow the procedural requirements that control the hold order process. These procedural requirements are specified in Site Director Standard Practice (SDSP) 14.9, Equipment Clearance Procedure. Both examples involved performing work on plant components without approved clearances being in place.

II. RESPONSE TO EXAMPLES IN INSPECTION REPORT 90-33

A. Example 1 - Hold Order Written on Wrong Component

This example occurred when a hold order was written on the wrong component. Specifically, a hold order was written on the 2A core spray room cooler when it should have been written on the 2B core spray room cooler. In addition, the physical verification of the hold order boundary, which would have identified such a problem, was inadequately performed.

In this example, Maintenance personnel generated a work order to lubricate the fan bearings on the 2B core spray room cooler, which is the room cooler for core spray room 2B/D. The work order described the component to be worked as the "Core Spray & RCIC Pump Rm A/C Unit B." This description originates from controlled plant drawings and is automatically printed on the work order by the Equipment Management System (EMS - formerly Equipment Information System or EQIS) database. This database must be accessed during the preparation of work orders to obtain work history of the component(s).

Subsequently, a clearance request was written, reviewed by appropriate personnel and approved by Operations management. The clearance request also specified the component to tagged as the "Core Spray & RCIC Rm A/C Unit B." Following approval of the clearance request the Unit Operator (UO) responsible for writing the hold order reviewed the clearance request and the work order. Following this review, the UO incorrectly concluded that the component that required tagging was the 2A core spray room cooler, which is the room cooler for core spray room 2A/C. This conclusion was based on the component description found on both the work order and the clearance request. This conclusion was further supported by the plant configuration, in that core spray room 2A/C is the only room that contains both core spray and RCIC pumps.

As a result, the UO wrote a hold order for the 2A core spray room cooler. The UO also noted on the clearance sheet, which documents specific components tagged and their position(s), that the local control switch for the room cooler had been tagged. In addition, the assistant shift operations supervisor responsible for performing the independent verification of the clearance boundary also incorrectly concluded that the 2A core spray room cooler was the component that required tagging.

Following issuance of the hold order, the Mechanical Maintenance Foreman responsible for performing the work should have verified that the 2B core spray room cooler was properly cleared. Physical verification that the component is properly cleared and tagged is a requirement of SDSP 14.9. As a physical verification, the foreman operated the local control switch for the 2B core spray room cooler's fan motor. Since the fan motor did not actuate (the fan motor did not actuate because its breaker had been pulled for unrelated work), the foreman incorrectly concluded that the room cooler was properly cleared and proceeded with the work.

As a result of this event, Maintenance and Operations personnel involved received personnel corrective action in accordance with TVA policy. In addition, the component description found in the EMS database was corrected and a potential drawing discrepancy was submitted to correct the component description found on the drawing.

B. Example 2 - Component Removed Without Hold Order

This example occurred when the motor actuator for a damper in the off-gas system was removed with the approval of a system engineer but without an approved clearance being in place.

In this example, a system engineer was directed by the Outage Shift Manager to supervise troubleshooting on a damper in the off-gas system. This troubleshooting was necessary because the damper would not seat properly. Assisting in the work were Modifications personnel knowledgeable in the operation of the damper and its motor actuator.

Personnel involved were attempting to correct operation of the damper. First, they adjusted the spring tension on the damper's motor actuator. Second, they adjusted the position of the motor actuator's limit switch. When these actions failed to solve the problem, the damper's motor actuator was removed with the system engineer's approval. This action was conducted without a hold order, which is a direct violation of SDSP 14.9.

As a result of this event, TVA evaluated the appropriateness of the actions taken by the personnel involved. TVA concluded that, although the Modifications personnel removed the motor actuator, the system engineer was responsible for the work. Therefore, the system engineer was responsible for obtaining a hold order prior to removing the actuator.

The system engineer associated with this event received personnel corrective action in accordance with TVA policy. In addition, the system engineer was directed to conduct meetings with other personnel from his organization to emphasize that this event was avoidable, why the event occurred, and proper use of equipment clearances.

III. ASSESSMENT OF HOLD ORDER EVENTS AND ADDITIONAL CORRECTIVE STEPS

Based on TVA's investigation of the events identified in NRC Inspection Reports 90-29 and 90-33, TVA concluded that these events were caused by personnel errors and did not result from programmatic deficiencies in the hold order process. Further, BFN's Site Quality organization specifically addressed the hold order process during a recently completed four-week audit of plant operations. This independent review also determined that no programmatic deficiencies exist.

Since personnel error is the common element of the hold order-related problems, TVA will take corrective actions that focus on personnel performance. First, TVA will conduct sensitivity sessions with personnel involved with hold orders (e.g., System Engineers, and Modifications, Maintenance, and Operations personnel). TVA's objective for these meetings will be to reinforce the personal responsibilities of each individual and explain that failure to adhere to procedures will result in disciplinary actions. These training sessions will be completed by February 28, 1991. Following these training sessions TVA will strengthen its training programs for individuals that routinely work with hold orders (e.g., System Engineers, and Modifications, Maintenance, and Operations personnel). Additionally, TVA will strengthen its General Employee Training Program to emphasize the importance of hold orders. These training program upgrades will be completed by March 8, 1991.

Second, TVA will evaluate the events discussed in Inspection Reports 90-29 and 90-33 using the Human Performance Enhancement System (HPES) developed by the Institute of Nuclear Power Operations (INPO). These evaluations will identify factors which may have adversely affected personnel performance in these events. These evaluations will be completed by March 15, 1991. Any corrective actions identified during these evaluations will be developed and scheduled for implementation at that time.

Third, from its review of the clearance process, TVA identified a human factors improvement related to the hold order process. This improvement goes beyond the specific corrective steps for these examples. The similarity, both in size and color, of hold order tags to general information tags used by the Modifications organization may cause confusion and could result in personnel ignoring a hold order tag or incorrectly concluding a component has been tagged. To minimize the potential for confusion, the Modifications tags will be changed by May 15, 1991, to ensure that they do not resemble hold order tags.

Finally, to ensure consistent tagging of plant equipment, TVA will purchase a computerized hold order system for BFN. This computerized system will be purchased and placed into service by August 30, 1991.

ENCLOSURE 2

Listing of Commitments

1. TVA will conduct sensitivity sessions with personnel involved with hold orders (e.g., System Engineers, and Modifications, Maintenance, and Operations personnel) to reinforce the personal responsibilities of each individual and explain that failure to adhere to procedures can result in disciplinary actions. These training sessions will be completed by February 28, 1991.

2. TVA will strengthen its training programs for individuals that routinely work with hold orders (e.g., System Engineers, and Modifications, Maintenance, and Operations personnel). Additionally, TVA will strengthen its General Employee Training Program to emphasize the importance of hold orders. These training program upgrades will be completed by March 8, 1991.

3. Modifications general information tags will be changed to ensure that they do not resemble hold order tags. Usage of the new tags will be implemented by May 15, 1991.

4. TVA will purchase a computerized hold order system for BFN. This system will be purchased and placed into service by August 30, 1991.

5. TVA will evaluate the events discussed in Inspection Reports 90-29 and 90-33 using INPO's HPES method. These evaluations will be completed by March 15, 1991. Any corrective actions identified during these evaluations will be developed and scheduled for implementation at that time.