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FEB 18 1997

U.S. Nuclear Regulatory Commission
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Gentlemen:

In the Matter of) Docket No. 50-390
Tennessee Valley Authority)

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1 - NRC INSPECTION REPORT NO.
50-390, 391/96-13 - REPLY TO NOTICES OF VIOLATION

The purpose of this letter is to provide a reply to Notices of Violation (NOVs) 50-390/96-13-04, 50-390/96-13-05, and 50-390/96-13-06 which are documented in the subject inspection report dated January 16, 1997. TVA's response to NOV 50-390/96-13-04 is provided in Enclosure 1 and documents an incident concerning the configuration of an Auxiliary Feedwater valve that was not maintained during a maintenance activity. A previous report on this incident was submitted to NRC on December 24, 1996, as Licensee Event Report (LER) 390/96024.

TVA's reply to NOV 50-390/96-13-05 is provided in Enclosure 2 and discusses problems associated with Periodic Instruction (PI) 1-PI-OPS-1-FP, "Freeze Protection." Also included in Inspection Report 50-390/96-13 regarding this issue was a comment concerning a self-assessment which concluded that the site freeze protection was acceptable. The reason for the limited effectiveness of this assessment has since been evaluated for improvements under the Corrective Action Program. The evaluation has concluded that the scope of the freeze protection self-assessment was too narrowly focused. To prevent recurrence, the plant staff has taken

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actions to ensure leadership responsibilities, scope and criteria, and cross organizational participation are adequately addressed in future departmental self-assessments. Additionally, a desk top procedure has been issued to provide this guidance.

Provided in Enclosure 3 is TVA's response to NOV 50-390/96-13-06. This violation concerns the failure to implement a program defined in Technical Specification 5.7.2.15, "Explosive Gas and Storage Tank Radioactivity Monitoring Program." A previous report on this incident was submitted to NRC on January 10, 1997, as Licensee Event Report (LER) 390/96025.

A listing of the commitments made in this letter is provided in Enclosure 4. Should there be questions regarding these responses, please contact P. L. Pace at (423) 365-1824.

Sincerely,



J. A. Scalice

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ENCLOSURE 1
WATTS BAR NUCLEAR PLANT UNIT 1
REPLY TO NOTICE OF VIOLATION (NOV)
NOV 50-390/96-13-04

NOTICE OF VIOLATION 50-390/96-13-04

"A. Technical Specification 5.7.1.1 requires, in part, that procedures shall be established, implemented, and maintained covering the activities recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, Quality Assurance Program Requirements (Operations). Appendix A of Regulatory Guide 1.33, Section 9, includes procedures for control of maintenance activities.

Site Standard Practice (SSP)-6.02, Maintenance Management System, Revision 16, requires the following:

- Step 2.5.4: "If configuration changes are required that are not controlled by written site or planning instructions, then use Appendix R, "Configuration Control Log for Wire Lifts" or "Configuration Control Log for Configuration Changes".... List configuration changes in sufficient detail to uniquely identify each item, and initial and date...."
- Step 2.3.3.C.6.a: "If the scope of the WO changed during performance, then verify the WO has been reevaluated and the PMT revised to reflect the scope change or is still adequate...."
- Step 2.4.3.C.15: "Ensure PMTs including any additional PMTs on Appendix L, "addendum to planning Form..."

Contrary to the above, between October 13, 1996, and October 15, 1996, the licensee failed to initiate a configuration control log for configuration changes that would sufficiently identify each item disconnected while performing maintenance activities on auxiliary feedwater system level control bypass valve 1-LCV-3-148A. Specifically, the licensee did not identify the outlet port of the valve prior to disconnecting the air tubing while troubleshooting. This resulted in the tubing being reconnected to the exhaust port of the valve instead of the outlet port. Also, licensee personnel failed to: 1) reevaluate the work order and the post-maintenance testing to reflect changes in work scope; and 2) adequately document and verify post-maintenance testing on an Appendix L. These failures resulted in auxiliary feedwater system level control bypass valve 1-LCV-3-148A being inoperable from October 15, 1996, to November 27, 1996.

TVA RESPONSE

TVA agrees that this violation example occurred.

REASON FOR THE VIOLATION

A failure by personnel to adequately adhere to the requirements of SSP-6.02 for control of equipment configuration and testing resulted in this violation.

Maintenance activities performed during a mid-cycle outage which began in October 1996 included the calibration of the level modifier for LCV-3-148A, and for this work the detail contained in the Work Order (WO) logs was inadequate. This resulted in the air supply line to the valve operator for LCV-3-148A being incorrectly installed on the exhaust port of the solenoid valve. The wording that was contained in the log regarding the actions taken during the calibration of the valve's level modifier also contributed to the improper verification of the reinstallation of the air line. The wording, as written in the log, implied that the air supply line was removed from the air operator of LCV-3-148A, instead of being removed from the solenoid. Due to this, the post-maintenance verification of the reinstallation of the supply line was made at the valve operator.

Further contributing to this deficiency were two factors. First was the inadequate confirmation of the testing of the valve once the mid-cycle maintenance work had been completed. For the maintenance performed, the stroking of the valve would routinely be the post maintenance testing (PMT) for the calibration of the level modifier. Although this is an appropriate PMT for the work performed, documentation of the actions performed was not adequate and lacked accountability for the performance of the test. This was apparent in that the stroking of the valve was documented as complete in the WO log but the entry in the WO log did not identify who in Operations was contacted regarding the testing of the valve and an entry was not made in an operator's log regarding the performance of the PMT. The second factor was the ability to directly mate the air supply line to a 90° pipe fitting installed in the exhaust port. This fitting was installed in accordance with industry guidance to prevent foreign material intrusion. However, this configuration allowed the interchange of the supply line to appear to be correct.

CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND RESULTS ACHIEVED

A WO was initiated to troubleshoot and repair LCV-3-148A on November 26, 1996. The termination of the air supply from the solenoid to the valve operator on LCV-3-148A was corrected and the valve was returned to service on November 27, 1996. In an effort to bound the scope of this deficiency, a series of the tasks completed

by the personnel that performed the calibration of the level modifier and the verification of the installation of the air supply line were reviewed. This review determined that the WO for the calibration of the level modifier was the only corrective maintenance performed by these individuals. Therefore, this condition was considered an isolated incident.

CORRECTIVE STEPS TO AVOID FURTHER VIOLATIONS

The corrective actions defined to address recurrence of this deficiency included the following. Counseling of the individuals involved in the incorrect installation of the air line could not occur since they were temporary contractors and were not employed at WBN at the time the installation error was identified. However, the actions below regarding maintenance training address the specifics of this issue when personnel are processed on site:

1. A series of briefings that concentrated on the documentation expectations for the work document logs were held with appropriate Maintenance personnel. The proper documentation to be recorded in the logs for the performance of a PMT was also discussed during these briefings.
2. A discussion of the appropriate level of documentation to be provided in the work document logs has been added to the training module which directs the future training of Maintenance personnel as they are processed on site.
3. A discussion of this event has been added to a training module which covers industry events and directs training for Maintenance personnel.
4. The fitting installed in the exhaust port of the solenoid valve for LCV-3-148A was modified so that the air supply line cannot be mated to the exhaust port. Similar modifications were also made to each of the remaining solenoid valves for the bypass LCV's in the motor driven AFW trains.
5. Operations held crew briefings on this event to stress the key problem areas and how interface with Operations contributed to the event.
6. The need to enhance the administrative controls for exiting a Limiting Condition for Operation (LCO) after completion of a work order has been evaluated. This evaluation found existing procedural controls to be adequate. However, a standing order was issued to ensure each shift senior reactor operator (SRO) reviews the procedural requirements associated with control of an LCO.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

With respect to the subject violation, TVA is in full compliance.

ENCLOSURE 2
WATTS BAR NUCLEAR PLANT UNIT 1
REPLY TO NOTICE OF VIOLATION
NOV 50-390/96-13-05

NOTICE OF VIOLATION 50-390/96-13-05

"B. Technical Specification 5.7.1.1 requires, in part, that procedures shall be established, implemented, and maintained covering the activities recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, Quality Assurance Program Requirements (Operations). Appendix A of Regulatory Guide 1.33, Section 9, includes procedures for control of maintenance activities.

Plant Instruction (PI) 1-PI-OPS-1-FP, Freeze Protection, Revision 0, Step 5.2.[2] requires, in part, "[a] verification that all freeze protection devices, such as heat trace or space heaters have power and are operable.... [b] verifications that all control equipment, i.e., recorders, thermostats and alarms, are operable...."

Contrary to the above, on December 11, 1996, the NRC identified that the licensee failed to establish adequate procedures to verify the operability of freeze protection devices as specified in Step 5.2.[2]. Specifically, the freeze protection checksheet contained in 1-PI-OPS-1-FP, which is used for field verification, only required circuit breaker position to be checked and did not require verification of operability. Examples are:

- Temperature recorders 0-TR-234-1 (Auxiliary Building) and 0-TR-234-2 (Intake Pumping Station) are not checked and both recorder temperature data logger paper drives were inoperable.
- Thermostat temperature switch setpoint manipulation to verify operability is not performed; only the freeze protection device circuit breaker is verified to be in its required position on freeze protection checksheets.
- The refueling water storage tank level transmitter cabinet heaters and the 5000 gallon demineralized water tank circuits 449 and 450 could not be verified as operable.
- Thermostats for the main feedwater transmitter sensing lines are not checked for operability."

TVA RESPONSE

TVA agrees that this violation occurred.

REASON FOR THE VIOLATION

The violation occurred due to a program weakness in that appropriate ownership was not provided to ensure proper coordination between the various departments responsible for the elements of the freeze protection program.

A contributing cause has been attributed to the use of the procedural checklist in Plant Instruction (PI) 1-PI-OPS-1-FP, "Freeze Protection," rather than the complete guidance in the procedure.

CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND RESULTS ACHIEVED

The Maintenance and Modifications organization has been assigned ownership of freeze protection as a program. The freeze protection program owner responsibilities include developing a freeze protection program description to establish methods for monitoring implementation of the freeze protection requirements.

Walkdowns of the freeze protection equipment were conducted to identify both hardware and procedural problems. The specific items listed in the subject violation have been included in the list of problems found.

Comparisons have been performed against 1-PI-OPS-1-FP and the applicable Preventative Maintenance (PM) instructions to identify any other procedural conflicts or discrepancies.

The hardware and procedural problems found have been documented within the Corrective Action Program and the conditions have been addressed by work orders and procedural changes.

CORRECTIVE STEPS TO AVOID FURTHER VIOLATIONS

More specific guidance has been incorporated into 1-PI-OPS-1-FP. Although 1-PI-OPS-1-FP serves as a tool to identify problems and initiate equipment trouble shooting and repair, determination of freeze protection equipment operability is intended to be controlled by the PM instructions. Thus, the language in 1-PI-OPS-1-FP that implied that it was used to perform operability determinations has been changed to clarify that the procedure performs functional checks.

Other similar periodic instructions performed by non-licensed operators (area routines), have been reviewed and have been determined to be consistent with the above philosophy.

The revision to 1-PI-OPS-1-FP has been field performed and additional changes have been incorporated based on performance feedback. Management expectations have been emphasized to on-shift Operations crews to utilize complete procedural guidance when checklists are used. Self-checking, problem identification and resolution have also been reemphasized by the "night order" process.

The shift manager's clerical support have been instructed to provide complete instruction copies when requested for performance.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

With respect to the subject violation, TVA will be in full compliance by April 15, 1997.

ENCLOSURE 3
WATTS BAR NUCLEAR PLANT UNIT 1
REPLY TO NOTICE OF VIOLATION
NOV 50-390/96-13-06

DESCRIPTION OF VIOLATION 50-390/96-13-06

"C. Technical Specification 5.7.2, Programs and Manuals, requires, in part, that programs shall be established, implemented, and maintained for:

"Explosive Gas and Storage Tank Radioactive Monitoring Program. The program shall include: a) The limits for concentrations of hydrogen and oxygen in the Waste Gas Holdup System and a surveillance program to ensure the limits are maintained...."

The Final Safety Analysis Report (FSAR), Section 11.3, Gaseous Waste Systems, requires, in part, that:

"One automatic sequential gas analyzer determines the quantity of oxygen and hydrogen in the gas space of the volume control tank, pressurizer relief tank, holdup tanks, evaporators, gas decay tanks, reactor coolant drain tank...."

Contrary to the above, on December 4, 1996, the NRC determined that the licensee failed to implement a surveillance program, as identified in the FSAR, Section 11.3, to determine if hydrogen and oxygen levels are maintained within limits. Specifically, the licensee did not have the waste gas analyzer aligned to automatically determine the quantity of oxygen in the specified tanks. The failure to automatically monitor the gaseous level in the tanks has existed since plant licensing."

TVA RESPONSE

TVA agrees that the violation occurred.

REASON FOR VIOLATION

This violation occurred because Chemistry personnel failed to implement commitments described in FSAR Section 11.3 to ensure that explosive gas limits were being maintained in accordance with the Technical Specification. Personnel involved in issuing the procedure to implement the explosive gas program misunderstood the scope of the program as approved by NRC. This misunderstanding was concerned with the intended mode of operating the sequential gas analyzer. The mode of operation was considered to be consistent with the operation of similar analyzers at other plants. The differences between the procedural mode of operating the sequential gas analyzer and the text of the FSAR were not resolved during FSAR development.

CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND RESULTS ACHIEVED

When it was determined that the automatic sequential gas analyzer should have been operating in the sequential mode in lieu of being aligned only to the in-service waste gas decay tank, actions were taken to realign the analyzer to operate in the automatic sequential mode. TVA's review of the FSAR section for commitments associated with the explosive gas and storage tank radioactive monitoring program discovered that the high-high oxygen alarm (4 percent alarm) was not installed on the sequential gas analyzer. Therefore, the analyzer was determined to be inoperable. Manual sampling was initiated to compensate for the inoperable monitor in accordance with requirements in WBN's explosive gas monitoring program. Installation and testing of the 4 percent alarm is now complete.

Personnel involved in the original errors have been individually counseled on verification and adequacy of licensing documents.

During the follow up review to ensure compliance with the Technical Specification Program, the second gas analyzer which is continuously aligned to the waste gas compressor, failed to meet the calibration acceptance criteria. After several unsuccessful attempts to calibrate and discussions with the vendor, the analyzer was replaced with an improved model, tested, and successfully calibrated.

CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATIONS

The explosive gas program procedure, Plant Administrative Instruction (PAI) 15.01 has been revised to include the program commitments as described in the FSAR.

New or revised surveillance and/or operating procedures have been issued to incorporate the requirements of the revised PAI 15.01.

The Chemistry controlled programs in Technical Specification, Section 5.7.2, and related FSAR sections were reviewed to ensure appropriate compliance. No issues were identified in reference to those Technical Specification programs. Several inconsistencies, outside the scope of this violation, were identified and documented in accordance with the WBN Corrective Action Program.

A memorandum was issued to the involved department employees delineating the details of the problem and ways that it could be prevented.

DATE WHEN IN FULL COMPLIANCE WILL BE ACHIEVED

TVA is in compliance with the requirements of Technical Specification Section 5.7.2.15.

ENCLOSURE 4

COMMITMENT SUMMARY

1. A freeze protection program description will be developed to establish methods for monitoring implementation of the freeze protection requirements.