

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

JUL 05 1988

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

Gentlemen:

In the Matter of)
Tennessee Valley Authority)

Docket No. 50-328

SEQUOYAH NUCLEAR PLANT (SQN) UNIT 2 - NOTICE OF VIOLATION AND PROPOSED
IMPOSITION OF CIVIL PENALTY (NRC INSPECTION REPORT NO. 50-328/88-20) -
RESPONSE TO NOTICE OF VIOLATION

Enclosed is TVA's response to S. D. Ebnetter's letter to S. A. White dated
June 3, 1988, that transmitted two notices of violation and proposed
imposition of civil penalty and two violations not assessed a civil penalty
(NRC Inspection Report No. 50-328/88-20).

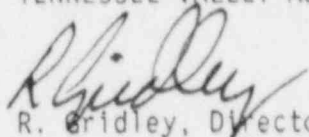
Enclosure 1 provides TVA's response to the notices of violation assessed a
civil penalty. Enclosure 2 provides TVA's response to notices of violation
not assessed a civil penalty. Summary statements of commitments contained in
this submittal are provided in enclosure 3.

Fees in response to the civil penalty of \$50,000 are being wired to NRC,
attention Director, Office of Enforcement.

If you have any questions, please telephone me at (615) 751-2729.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


R. Bradley, Director
Nuclear Licensing and
Regulatory Affairs

Enclosures
cc: See page 2

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U.S. Nuclear Regulatory Commission

JUL 05 1988

cc (Enclosures):

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ENCLOSURE 1

RESPONSE TO NRC INSPECTION REPORT NUMBER 50-328/88-20
REPLY TO A NOTICE OF VIOLATION
PROPOSED CIVIL PENALTY
S. D. EBNETER'S LETTER TO S. A. WHITE
DATED JUNE 3, 1988

Violation 50-328/88-20.I.A

"I. Violations Assessed a Civil Penalty

- A. Technical Specification 3.5.2 requires for MODES 1, 2, and 3, a minimum of two independent emergency core cooling system (ECCS) subsystems shall be operable with each subsystem comprised of, among other equipment, one operable centrifugal charging pump.

Technical Specification 3.0.3, which contains the ACTION requirements when two ECCS subsystems are inoperable, requires, in part, that within one hour, action shall be initiated to place the unit in a MODE in which the Specification does not apply.

Contrary to the above, on March 9, 1988, with the unit in MODE 3, two ECCS subsystems were inoperable for one hour and twenty-four minutes and action was not initiated to place the unit in a MODE in which the Specification does not apply. Both centrifugal charging pumps were in the pull-to-lock position and would not have operated automatically upon receipt of a safety injection signal."

Admission or Denial of the Alleged Violation

TVA admits the violation subject to the following corrections and clarification. During the 1 hour 24 minutes in question, the handswitch (HS) for the 2B-B centrifugal charging pump (CCP) was not in the pull-to-lock (PTL) position. Maintenance had previously been completed on the 2B-B pump, and the pump had been returned to service and was in service providing charging flow and RCP seal flow. However, the postmaintenance test (PMT) had not yet been completed; and therefore the 2B-B pump was not technically declared operable at that time. The 2B-B CCP would have operated automatically upon receiving a safety injection signal. The 2A-A CCP HS was in the PTL position as discussed below.

Reason for the Violation

The immediate causes of the violation were a result of the day-shift reactor operator (RO) (operator A) not recognizing that placing the CCP HS in the PTL position would result in the CCP being considered inoperable. The 2B-B CCP, for which maintenance had previously been completed, was placed in service to perform a PMT. The 2A-A CCP HS was placed in the PTL position. The PMT on 2B-B was completed 1 hour and 24 minutes later, and the 2B-B CCP was left in service with the 2A-A CCP HS still in the PTL position. Because of the operator's (operator B) interpretation of the switch position and a high level of activity in the Main Control Room (MCR) during the turnover process, the subsequent shift turnover did not identify that the 2A-A pump was inoperable as a result of the HS being in the PTL position. Because the turnover process

did not identify the 2A-A CCP as being inoperable, the HS position was incorrectly logged in the System Status Checklist (Appendix B1) of Administrative Instruction (AI) 5, "Shift Relief and Turnover."

During a nonscheduled shift turnover, a new system status checklist (Appendix B1 of AI-5) was not completed by operator C; and the incorrectly positioned CCP HS was not identified at that time. The incorrectly positioned CCP HS was subsequently identified by an NRC inspector, and the HS was then returned to the A-Auto position. During the initial 1-hour-24-minute period, the 2A-A CCP HS was in the PTL position and the 2B-B CCP was technically inoperable because of a PMT being performed. However, the 2B-B pump was in service and operating during this period with the HS in the A-Auto position. Subsequent completion of the PMT indicated that, had an accident occurred, the 2B-B pump would have operated automatically to provide required emergency core cooling.

The root causes of the violation resulted from management not adequately considering the potential effects of temporarily assigning operators to a cold shutdown unit and back to an operating unit (mode 3). Operator A had recently been transferred from unit 1 to unit 2 before this event. This contributed to the operator not fully refocusing to more restrictive technical specification (TS) requirements, to thinking operability requirements were being met with the CCP HS in the PTL position as previously permitted in cold shutdown for reactivity control considerations, and to automatically placing the nonrunning pump in PTL as required in modes 4 and 5 for cold overpressurization considerations. Also, management direction regarding detail of operator log entries and operator communication were less than fully adequate, thus allowing a misleading log entry on the status of CCP-2A-A that resulted in a failure to communicate abnormal status of safety-related equipment.

In addition to the above, procedural weaknesses contributed to failure to recognize the situation. AI-5 did not adequately address nonscheduled shift turnovers. This resulted in the evening shift relief (operator C) not performing a new, independent Appendix B1 to AI-5. An existing TS interpretation (TSI) concerning the operability of a CCP in the PTL position was not consistent with current plant management philosophy. A discrepancy existed between section B of General Operating Instruction (GOI) 3, "Plant Shutdown from Minimum Load to Cold Shutdown," (precaution for solid water operation) and TS 3.1.2.4 (CCPs needed for reactivity control). GOI-3 requires one CCP to be locked out when reactor coolant system (RCS) temperature is less than 350 degrees Fahrenheit, mode 4, while TS 3.1.2.4 requires both CCPs to be operable in modes 1 through 4. These procedural weaknesses partly contributed to operator perception that the 2A-A pump was operable with the HS in PTL and failure to identify and question the abnormal HS position.

Corrective Steps That Have Been Taken and Results Achieved

The 2B-B CCP was declared operable following PMT, and limiting condition for operation (LCO) 3.0.3 was exited. The 2A-A CCP HS was placed in the A-Auto position upon identification, therefore exiting LCO 3.5.2.

TVA has instituted extensive corrective actions to prevent recurrence of this event. These actions include changes to plant procedures, additional administrative controls, increased operator training, and a formal review of TSIs currently in use. The following lists the specific actions completed by TVA to date.

1. Controls have been established to limit interchanging operators from a cold shutdown unit to an operating unit. Approval to interchange must come from the plant manager.
2. AI-6, "Log Entries and Review," (for operator log entries) has been revised to delineate the level of detail for log entries such as specifying switch positions.
3. AI-30, "Nuclear Plant Conduct of Operation," (for operator communication) has been revised to increase the level of communication among operators by specifying interface requirements that must be satisfied during control board manipulations that relate to changing switch positions or taking major equipment out of service.
4. AI-5 has been revised to require the completion of an Appendix B1 checklist for nonscheduled shift relief.
5. A review of formal SQN TSIs has been performed for technical adequacy and clarity. TSIs needing changes have been corrected.
6. AI-5 has been revised to require the unit supervisor senior reactor operator (SRO) to observe the main control board status for abnormal conditions before assuming shift. A checklist-type guidance is provided, and the review is documented in the unit supervisor log.
7. Senior Office of Nuclear Power management has addressed Operations personnel on the causes, conclusions, and corrective actions for this event.
8. Signs to emphasize plant operating mode have been placed in the MCR and auxiliary instrument room.
9. Training has been completed on procedure changes and TSI changes for unit 2 operators.
10. Scenarios emphasizing the use of TSs have been incorporated into the operator simulator training program. Training sessions with unit 2 licensed operators have been conducted.

11. The requirement in GOI-3, to place one CCP HS in the PTL position below 350 degrees Fahrenheit, has been revised to perform the action of PTL upon entry into mode 5. Revision 37 was approved May 13, 1988.
12. TS 3.5.3, mode 4, and 3.1.2.4, modes 1-4, have been evaluated and determined to be consistent.

Corrective Steps That Will Be Taken to Avoid Further Violations

1. Training for unit 1 operators will be given on procedure changes and TSI changes before unit 1 enters mode 2 as committed to in Licensee Event Report (LER) SQR0-50-328/88010.
2. Scenarios emphasizing the use of TSs have been incorporated into operator simulator training. Training for unit 1 operators will be completed before unit 1 enters mode 2 as committed to in LER SQR0-50-328/88010.
3. Corresponding changes to the Final Safety Analysis Report, section 5.2.2.4.4, regarding administrative procedures for RCS pressure control during low-temperature operation will be submitted in the next annual update.

Date When Full Compliance Will Be Achieved

TVA is in full compliance.

Violation 50-328/88-20.I.B

"B. 10 CFR 50.72.b.2.iii requires the reporting to the NRC Operations Center via the Emergency Notification System (Red Phone) within four hours of occurrence, any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to shut down the reactor and maintain it in a safe shutdown condition, remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident.

Contrary to the above, on March 9, 1988, the inoperability of the centrifugal charging pumps was not reported to the NRC Operations Center within the required four hours after it was identified.

Collectively, these violations have been categorized in the aggregate as a Severity Level III problem (Supplement I).

Cumulative Civil Penalty - \$50,000 (assessed equally between the violations)."

Admission or Denial of the Alleged Violation

TVA admits the violation.

Reason for the Violation

On March 9, 1988, at approximately 2000 eastern standard time, the shift operation supervisor (SOS) was made aware of the 2A-A CCP HS having been in the PTL position. The SOS assessed the event along with the shift technical advisor, and a potential reportable occurrence was written. At this time, the SOS did not have positive evidence that the 2A-A CCP was inoperable as a result of being in PTL coincident with the 2B-B CCP undergoing a PMT earlier that day. Following verification the following morning with the operators involved that the 2A-A CCP HS had been in the PTL position coincident with the PMT on the 2B-B CCP and that this condition had lasted for 1 hour 24 minutes, it was concluded that TS LCO 3.0.3 had been inadvertently entered. Because this situation was not recognized at the time, a shutdown had not been initiated within one hour, resulting in an operation prohibited by TSs. This would be reportable to NRC in accordance with 10 CFR 50.73.a.2.i.B (LER). In an effort to keep NRC apprised of activities at SQN, a conservative application of 10 CFR 50.72 was also applied; and the four hour notification was effected.

TVA does not wish to pursue this specific event further; however, in reviewing the overall issue with respect to NRC guidelines for reporting, it is unclear that the event in itself meets any of the requirements of 10 CFR 50.72 rules. It does, however, meet the requirements of 10 CFR 50.73 for a 30-day LER in accordance with 10 CFR 50.73.a.2.i as an operation prohibited by the TSs. The event was conservatively reported as a four hour notification under the 10 CFR 50.72.b.2.iii rule. This rule addresses any event or condition that alone could have prevented the fulfillment of safety functions. This rule does not require that you assume a failure of the opposite train. Specifically, NUREG-1022, Supplement 1, question 7.8, states that unrelated, independent failures that did not actually occur should not be included in the evaluation if an event or condition is reportable under this rule. During this event, the 2B-B CCP was in operation, as was stated earlier, and was always capable of performing its intended safety function. Had an accident occurred during this time, the 2B-B CCP would have continued to operate and perform its emergency core cooling function.

In conclusion, a notification was not made to NRC within four hours of the identification of the 2A-A CCP HS in the PTL position; but it is believed that a conservative interpretation of the reporting requirements was made upon confirmation that TS 3.0.3 had inadvertently been entered and confirmation that the duration resulted in the action of TS 3.0.3 not being complied with.

Corrective Steps That Have Been Taken

Immediate corrective actions were effected by making the telephone notification. TVA senior management has directed the shift supervisors to ensure control of shift activities and to become more involved with incidents of this nature. The SOSs are aware of their responsibility to perform determinations and notifications in accordance with 10 CFR 50.72.

TVA management has additionally discussed with the SOSs the importance of aggressively pursuing resolutions in a timely fashion of incidents involving TSs. TVA management has also directed the SOSs to be conservative during evaluations of events involving TSs and to initiate a notification when situations indicate this action could be required.

Corrective Steps That Will Be Taken to Avoid Further Violations

No further action is required.

Date When Full Compliance Will Be Achieved .

TVA is in full compliance.

ENCLOSURE 2

RESPONSE TO NRC INSPECTION REPORT NUMBER 50-328/88-20
REPLY TO A NOTICE OF VIOLATION
NOT ASSESSED A CIVIL PENALTY
S. D. EBNETER'S LETTER TO S. A. WHITE
DATED JUNE 3, 1988

Violation 50-328/88-20.II.A

"II. Violations Not Assessed a Civil Penalty

- A. Technical Specification 6.8.1 requires that written procedures be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Appendix A of Regulatory Guide 1.33 requires that procedures be established and implemented to control system operations and administrative activities.

Contrary to the above, the licensee failed to adequately establish and implement procedures in the following instances:

1. On March 5, 1988, a Technical Specification Interpretation was established and used that conflicted with the plant Technical Specifications. Technical Specification Interpretation 8 allowed operation of the facility, with Technical Specification 3.0.5 invoked, with one alternate motor driven auxiliary feedwater train operable and the capability to supply at least three steam generators from the turbine driven auxiliary feedwater pump. In some circumstances, this allowed operation of the facility with flow paths to only three steam generators. However, Technical Specification 3.7.1.2 requires that flow paths to all four steam generators be operable.
2. On March 9, 1988, the improper implementation of the AI-5 Lead Operator Checklist resulted in the improper documentation of the 2A-A CCP control room handswitch position. The checklist indicated that the handswitch was in the proper position (i.e. A-Auto), whereas the actual position was pull-to-lock (PTL).

This is a Severity Level IV violation (Supplement I)."

Admission or Denial of the Alleged Violation (example 1)

TVA admits the violation.

Reason for the Violation

On March 5, 1988, during the performance of Surveillance Instruction (SI) 166.8, "Increased Frequency Testing of Category A and B Valves," valve 2-LCV-3-175 failed to stroke. SI-166.8 requires that, if the valve exceeds the maximum allowable stroke time, the valve shall be declared inoperable and repaired. The valve should have been declared inoperable and LCO 3.7.1.2 entered; but the operator used the operation of unit 2 without entry into an LCO. Additionally, the valve stroke was not recorded in the SOS, UO, or RO.

The root cause of this violation was failure to properly implement SI-166.8 as written, failure to record the occurrence in operational logs at the time of the event, and use of an inadequate TSI resulting in failure to enter an LCO.

Corrective Steps That Have Been Taken and Results Achieved

1. AI-6 has been revised to delineate the level of detail for log entries.
2. A review of formal SQN TSIs has been performed for technical adequacy and clarity. TSIs needing changes have been corrected.
3. Scenarios emphasizing the use of TSs have been incorporated into the operator simulator training program.
4. Late entries were written in SOS/UO/RO logs to reflect the findings of valve nonactuation by the previous shifts.

Corrective Action That Will Be Taken to Avoid Further Violations

No further corrective action is required.

Date When Full Compliance Will Be Achieved

TVA is in full compliance.

Admission or Denial of the Alleged Violation (example 2)

TVA admits the violation.

Reason for the Violation

The HS for 2A-A CCP was placed in the PTL position by the day-shift RO (operator A) when the 2B-B CCP was placed in service to perform a PMT. Because of the operator's (operator B) interpretation of the switch position and a high level of activity occurring in the MCR during the turnover process, the subsequent shift turnover did not identify that the 2A-A pump was inoperable as a result of the HS being in the PTL position. Because the turnover process did not identify the 2A-A CCP as being inoperable, the HS position was incorrectly logged in the System Status Checklist (Appendix B1) of AI-5.

Corrective Steps That Have Been Taken and Results Achieved

1. AI-6 (for operator log entries) has been revised to delineate the level of detail for log entries such as specifying switch positions.
2. AI-30 (for operator communication) has been revised to increase the level of communication among operators by specifying interface requirements that must be satisfied during control board manipulations that relate to changing switch positions or taking major equipment out of service.
3. AI-5 has been revised to require the unit supervisor SRO to observe the main control board status for abnormal conditions before assuming shift. A checklist-type guidance is provided, and the review is documented in the unit supervisor log.

Corrective Steps That Will Be Taken to Avoid Further Violations

No further action is required.

Date When Full Compliance Will Be Achieved

TVA is in full compliance.

Violation 50-328/88-20.II.B

"B. TS 4.5.1.1.1.6 requires that each cold leg accumulator be demonstrated operable by verifying the boron concentration within six hours after each solution volume increase of greater than or equal to 1 percent of the tank volume.

Contrary to the above, on March 6, 1988, the number 3 cold leg accumulator boron concentration was not verified within six hours after a solution volume increase of greater than 1 percent of tank volume due to inleakage.

This is a Severity Level IV violation (Supplement I)."

Admission or Denial of the Alleged Violation

TVA admits the violation.

Reason for the Violation

The root causes of this violation have been determined to be that the Operations shift crews did not consider that the RCS leakage into the accumulator, after draining the accumulator, constituted a filling operation and that applicable Operations procedures did not alert the operator to request a boron concentration sample for such an event.

Corrective Steps That Have Been Taken and Results Achieved

Immediate corrective actions were to declare the accumulator inoperable and to have the Radiochemistry Laboratory verify the boron concentration.

Radiochemistry Laboratory personnel sampled the accumulator; and the results of the sample yielded a boron concentration of 2,085 parts per million, which is within TS limits. The accumulator was then declared operable.

In order to preclude recurrence of the event, System Operating Instruction 63.1, "Emergency Core Cooling System," has been revised to require a boron concentration sample to be taken after both filling and draining occur. This will prevent refilling of the accumulator without obtaining the corresponding boron concentration as required by TSs. A training letter has been issued to Operations personnel detailing the subject matter of this incident. This will ensure that operators are aware that inleakage into a tank or accumulator constitutes a refilling operation and that appropriate action must be initiated. Additionally, SI-2, "Shift Log," contains a note that will alert Operations personnel to notify the Radiochemistry Laboratory to perform a boron concentration analysis when cold-leg accumulator volume increases by 1 percent or greater, as required by TSs.

Corrective Steps That Will Be Taken to Avoid Further Violations

No further corrective action is required.

Date When Full Compliance Will Be Achieved

TVA is in full compliance.

ENCLOSURE 3

2. Commitments

1. Training for unit 1 operators will be given on procedure changes and TSI changes before unit 1 enters mode 2 as committed to in LER SQRO-50-328/88010.
2. Scenarios emphasizing the use of TSs have been incorporated into operator simulator training. Training for unit 1 operators will be completed before unit 1 enters mode 2 as committed to in LER SQRO-50-328/88010.
3. Corresponding changes to the Final Safety Analysis Report, section 5.2.2.4.4, will be submitted in the next annual update.