

LICENSEE EVENT REPORT (LER)

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| FACILITY NAME (1) Sequoyah, Unit 2 | DOCKET NUMBER (2) 0 5 0 0 0 3 2 8 | PAGE (3) 1 OF 0 4 |
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Inadequate Performance Of An Surveillance Instruction During Functional Testing Of A Radiation Monitor Results In A Containment Ventilation Isolation

| EVENT DATE (5) | | | LER NUMBER (6) | | | REPORT DATE (7) | | | OTHER FACILITIES INVOLVED (8) | | |
|----------------|-----|---------|----------------|-------------------|-----------------|-----------------|-----|---------|-------------------------------|--|--|
| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | MONTH | DAY | YEAR | FACILITY NAMES | | |
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| OPERATING MODE (9) 1 | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11) | | | | | | | |
| POWER LEVEL (10) 0 9 8 | 20.402(b) | 20.405(a) | XX | 50.73(a)(2)(iv) | 73.71(b) | | | |
| | 20.405(a)(1)(i) | 50.36(a)(1) | | 50.73(a)(2)(v) | 73.71(c) | | | |
| | 20.405(a)(1)(ii) | 50.36(a)(2) | | 50.73(a)(2)(vi) | OTHER (Specify in Abstract below and in Text, NRC Form 366A) | | | |
| | 20.405(a)(1)(iii) | 50.73(a)(2)(i) | | 50.73(a)(2)(viii)(A) | | | | |
| | 20.405(a)(1)(iv) | 50.73(a)(2)(ii) | | 50.73(a)(2)(viii)(B) | | | | |
| 20.405(a)(1)(v) | 50.73(a)(2)(iii) | | 50.73(a)(2)(ix) | | | | | |

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| LICENSEE CONTACT FOR THIS LER (12) | | TELEPHONE NUMBER | |
| NAME B. E. Kilgore, Plant Operations Review Staff | | 6 1 5 8 7 1 0 - 7 1 0 8 7 | |

| COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13) | | | | | | | | | | |
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| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRC | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRC | |
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| SUPPLEMENTAL REPORT EXPECTED (14) | | | EXPECTED SUBMISSION DATE (15) | | MONTH | DAY | YEAR |
| <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) | <input type="checkbox"/> NO | | | | | | |

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

On August 31, 1988 at 0920 EDT with Unit 2 in mode one, an "A" train containment ventilation isolation (CVI) occurred. An investigation by Operation and Instrument Maintenance (IM) personnel concluded that the CVI resulted from the performance of Surveillance Instruction (SI)-82.2 "Functional Test For Radiation Monitoring System".

The immediate cause of the CVI was found to be that a current path was inadvertently created across Radiation Monitor (RM) 2-RM-90-106 high particulate radiation relay contacts during the performance of SI-82.2. The root cause of this event is attributed to an error made by IM personnel when steps in SI-82.2 were performed out of sequence. The out of sequence performance resulted in an "A" train CVI.

For immediate corrective action, Operations personnel verified that there was no high radiation and reset the CVI in accordance with System Operating Instruction (SOI) SOI-30.2B "Containment Ventilation System Isolation". Plant Management has met with IM personnel to discuss this event and others recent events in which Instrument Maintenance personnel were directly involved. Plant Management included in their discussion the lessons learned from these events and reemphasized the need for adherence to procedure to ensure that the potential for future events is reduced.

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TEXT (if more space is required, use additional NRC Form 368A (1) (17))

DESCRIPTION OF THE EVENT

On August 31, 1988 at 0920 EDT with unit 2 in mode one (98 percent power, 2235 psig and 577 degrees F), an "A" train containment ventilation isolation (CVI) (EIIS code BD) occurred. An investigation by Operation and Instrument Maintenance (IM) personnel concluded that the CVI resulted from the performance of Surveillance Instruction (SI)-82.2 "Functional Test For Radiation Monitoring System". This SI is used to test Radiation Monitor (RM) 2-RM-90-106 "Containment Building Lower Compartment AIR Monitor" (EIIS code IL).

On August 31, 1988, at 0738 EDT, IM personnel prepared for performance of SI-82.2 by coordinating with Operations personnel for authorization to start work. SI-82.2 performs channel functional testing and verifies the operability of various RMs and their associated alarms. Performance of SI-82.2 in part ensures that functional test requirements, for both the containment purge system exhaust and containment upper and lower compartment air monitors, are met in accordance with Technical Specification (TS) Surveillance Requirements (SR). Functional testing under SI-82.2 includes verifying the high radiation setpoint, the downscale setpoint, the high voltage setting and that the high radiation relay and the auxiliary and solid state protection system (SSPS) separation relay actuate upon a manually initiated trip signal. Upon completion of the test handswitches in the Main Control Room (MCR), which block spurious high radiation actuation signals to the SSPS during testing, are returned to the normal (unblock) position and voltage is verified to be present at the high radiation relay and auxiliary and SSPS separation relay.

IM personnel successfully performed instructions in SI-82.2 to test the high radiation setpoint, the downscale setpoint and the high voltage settings for RM 2-RM-90-106A (particulate channel). Testing then continued to verify actuation of the high radiation relay and auxiliary and SSPS separation relay. The high radiation relay (K2-R106A) and auxiliary and SSPS separation relay (K106B) were tested in accordance with SI-82.2 steps 5.3.12 through 5.3.12.6 to verify contact closure for a simulated high radiation condition by measuring continuity across their contacts with a digital multimeter (DMM). Continuity is measured with the DMM in the resistance measurement position. Two DMMs were used to measure the contact closure (one for each relay) while the radiation analyzer module output was manually increased to simulate a high radiation condition. The relays were then verified to open (reset) once the simulated high radiation condition was cleared. Once the K106B and K2-R106A relay contact actuations were verified, SI-82.2 step 5.4.12.7 instructed IM personnel to adjust the DMM to measure 48 Volts direct current (DC). In the voltage measurement position the DMM is used to verify that approximately 48 volts DC are present at the relay contacts. This ensures that a signal will be generated to the SSPS once relay contact closure occurs resulting from an actual high radiation signal. SI-82.2 then instructed IM personnel in step 5.4.12.8 to request Operation personnel to return the bypass handswitches (HS-90-136A1, and 136A2) to the normal (unblock) position. With one multimeter switched to the voltage measurement position the bypass handswitches were returned to normal by operations personnel and an "A" train CVI immediately occurred.

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TEXT (if more space is required, use additional NRC Form 365A's) (17)

Operations verified that no high radiation condition existed and the CVI was subsequently reset in accordance with System Operating Instruction (SOI) SOI 30.2B "Containment Ventilation System Isolation".

CAUSE OF THE EVENT

The immediate cause of the CVI was found to be that a current path was inadvertently created across the K2-R106A high radiation relay contacts during the performance of SI-82.2 step 5.4.12.7. When Operations returned the bypass handswitches to the normal (unblock) position during performance of step 5.3.12.8, the current path created across the K2-R106A relay contacts allowed a spurious high radiation signal to the "A" train of the SSPS and subsequently initiated an "A" train CVI.

The root cause of this event is attributed to an error made by IM personnel during performance of SI-82.2. Steps 5.3.12.7 and 5.3.12.8 were performed out of sequence. Step 5.3.12.7 required the DMMs to be adjusted to measure 48 volts DC. During performance of this step IM personnel adjusted the DMM connected across the K106B relay contacts; however, the DMM connected across the K2-R106A relay contacts was left in the resistance measurement position. In the resistance position a current path was created across the K2-R106A relay contacts allowing a spurious high radiation signal to the "A" train SSPS when the bypass handswitches in the MCR were returned to the normal (unblock) position. A precaution exist in SI-82.2 which warns personnel that a CVI could occur if the DMM are not placed in the voltage measurement position. A second party verification (by signature) is required for step 5.3.12.7. Step 5.3.12.8 which instructed IM personnel to request that Operations return the bypass handswitches to the normal position was performed out of sequence before the procedure was signed that both DMM were set to the voltage measurement position in accordance with step 5.3.12.7.

ANALYSIS OF THE EVENT

A CVI is an engineered safety feature actuation which is reportable for all modes of operation in accordance with 10 CFR 50.73, paragraph a.2.iv.

This event did not adversely affect the health and safety of the public. The actuation of the "A" train CVI system was caused by an inadequate performance of SI-82.2 by IM personnel. Operations personnel took appropriate actions to determine the cause of the CVI and reset the system in accordance with SOI 30.2B "Containment Ventilation System Isolation" once it was discovered that the CVI did not result from an actual high radiation condition. Since no hardware problems were found during the performance of the SI-82.2 functional test, TVA is confident that in the event of an actual high radiation condition all equipment would have performed as designed.

CORRECTIVE ACTION

Operations personnel took immediate corrective action to verify that no high radiation existed then reset the CVI in accordance with SOI-30.2B.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

For further corrective action, Plant Management has met with Instrumentation personnel to discuss this event and other recent events in which Instrument Maintenance personnel were directly involved. Plant Management included in their discussion the lessons learned from these events and reemphasized the need for adherence to procedure to ensure that the potential for future events is reduced.

ADDITIONAL INFORMATION

There have been three previously recorded Licensee Event Reports (LERs) which report CVI occurrences which resulted from a failure to correctly implement procedures. Reference LERS: SQRO-50-327/88006, 88014, 85039.

COMMITMENTS

None

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TENNESSEE VALLEY AUTHORITY

Sequoyah Nuclear Plant
Post Office Box 2000
Soddy-Daisy, Tennessee 37379

September 22, 1988

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNIT 2 - DOCKET NO.
50-328 - FACILITY OPERATING LICENSE DPR-79 - REPORTABLE OCCURRENCE REPORT
SQRO-50-328/88035

The enclosed licensee event report provides details concerning a containment ventilation isolation which resulted from an inadequate performance of a surveillance instruction to functionally test a radiation monitor. This event is reported in accordance with 10 CFR 50.73, paragraph a.2.iv. as an engineered safety feature actuation.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


S. J. Smith
Plant Manager

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