

TENNESSEE VALLEY AUTHORITY

6N 38A Lookout Place

August 28, 1989

U.S. Nuclear Regulatory Commission  
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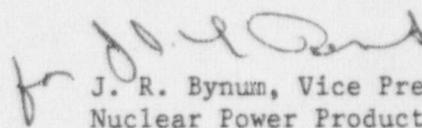
Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNIT 1 - DOCKET NO.  
50-327 - FACILITY OPERATING LICENSE DPR-77 - LICENSEE EVENT REPORT (LER)  
50-327/89023

The enclosed LER provides details concerning the reactor coolant vent system manual isolation valves not being locked open because of inadequate provisions for implementation of technical specification revisions issued during power operation. This event is reported in accordance with 10 CFR 50.73, paragraph a.2.i.b.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

  
J. R. Bynum, Vice President  
Nuclear Power Production

Enclosure

cc (Enclosure):

Regional Administration  
U.S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Region II  
101 Marietta Street, Suite 2900  
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INPO Records Center  
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1100 Circle 75 Parkway, Suite 1500  
Atlanta, Georgia 30339

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Sequoyah Nuclear Plant, Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 3 2 7	PAGE (3) 1 OF 0 6
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TITLE (4) Failure to enter Limiting Condition for Operation 3.4.11 after discovering the reactor coolant vent system was inoperable.

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		DOCKET NUMBER(S)								
0	7	2	8	8	9	0	2	3	0	0	0	0	5	0	0	0	3	2	8
0	7	2	8	8	9	0	2	3	0	0	0	0	5	0	0	0			

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)									
POWER LEVEL (10) 1 0 0	20.402(b)	20.405(c)	50.73(e)(2)(iv)	73.71(b)						
	20.405(e)(1)(i)	50.36(c)(1)	50.73(e)(2)(v)	73.71(c)						
	20.405(e)(1)(ii)	50.36(e)(2)	50.73(e)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	20.405(e)(1)(iii)	X 50.73(e)(2)(ii)	50.73(e)(2)(viii)(A)							
	20.405(e)(1)(iv)	50.73(e)(2)(iii)	50.73(e)(2)(vii)(B)							
20.405(e)(1)(v)	50.73(e)(2)(iii)	50.73(e)(2)(ix)								

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER
NAME Sydney W. Spencer, Compliance Licensing Engineer		AREA CODE
		6 1 5 8 4 3 - 7 5 4 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

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

On July 28, 1989, at 1700 EDT, with both units in Mode 1, Limiting Condition for Operation (LCO) 3.4.11 was entered for both units because of inoperable reactor coolant system (RCS) head vents. The shift technical advisor (STA) on duty during the evening shift on July 27, 1989, was reviewing the new RCS vent technical specification (TS). He noted that the upstream manual isolation valves were not identified as locked open on the flow prints. The configuration control status files were reviewed, and the valves were listed as open but not locked open. The STA notified the shift operations supervisor but the operating shift crew failed to declare the reactor coolant vent system inoperable and enter the applicable LCO TS action. As a result of further discussions and investigations between TVA and NRC, the reactor coolant vent system was declared inoperable, and LCO 3.4.11 was entered. As immediate corrective action, TVA removed power from the solenoid valves and requested a waiver of compliance. Long-term corrective actions include: ensuring appropriate plans exist for implementation of new TS changes and a clarification of TS 3.4.11.

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

DESCRIPTION OF EVENT

On July 28, 1989, at 1700 Eastern daylight time (EDT), with both units in Mode 1 (Units 1 and 2 at 100 percent power, approximately 2,235 pounds per square inch gauge and reactor coolant system [RCS] average temperature 578 degrees Fahrenheit), it was determined that the reactor coolant vent system (EHS Code AB) was inoperable because of the upstream manual isolation valves not being locked open as required by Limiting Condition for Operation (LCO) 3.4.11. As immediate corrective action, TVA removed power from the solenoid valves and requested a waiver of compliance.

The condition was identified at approximately 1720 on July 27, 1989, when a Site Licensing engineer requested information from the duty shift technical advisor (STA) as to the best way to inform the plant Operations crews of changes being planned to Technical Specification (TS) 3.4.11.b in response to the NRC questions raised in the June 1, 1989, letter that transmitted the new TS to TVA.

Because the STA was unfamiliar with the new TS, he familiarized himself with the TS requirement for two reactor head vent paths. While tracing the reactor head vent flow path on the plant flow prints, the STA observed the upstream manual isolation valves (87-514 and 68-598) were not indicated "locked open" on the flow print. Believing a possible drawing deviation existed, the STA reviewed the active valve alignment checklist for System Operating Instruction (SOI) 68.1 from the unit status file. The investigation indicated that both valves were verified open but not locked open in accordance with Surveillance Requirement (SR) 4.4.11.a. Using the TS/Surveillance Procedure Cross-Reference, no procedure could be identified implementing SR 4.4.11.a.

At approximately 2000, the STA presented the evaluation results to the shift operations supervisor (SOS). The SOS, after reviewing the information, instructed the STA to request any additional available information or recommendations from the duty Site Licensing manager with regard to the operability of the reactor head vent system. The duty Licensing manager indicated the issue of the reactor head vent valves (HCV-87-514 and HCV-68-598) not locked in the open position had been discussed with Operations and, because of valve inaccessibility during reactor power operation, the decision had been made not to lock the valves open until the next outage. The STA requested documentation to ensure this position was acceptable to plant management and regulatory organizations. The duty Licensing manager committed to contact the Operations Support Group manager in the morning and to generate the requested documentation. While the STA was discussing the problem with the duty Licensing manager, the SOS contacted the duty Operations Support Group manager and also discussed the operational requirements of TS 3/4.4.11.

Following both telephone conversations, the SOS, the Unit 1 assistant shift operations supervisor, and the STA discussed the operability of the reactor head vent valves. The following specific issues were raised and considered:

- SOI-68.1A valve checklist documented double verification that both valves were aligned to the open position.
- Both valves are physically located within the polar crane wall. All entrances into the polar crane wall are locked and controlled during power operation (preventing any unauthorized changes in the valves' positions).

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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DESCRIPTION OF EVENT (continued)

- The surveillance interval for the valve verification, in accordance with SR 4.4.11.a, is once every 18 months.
- The TS bases for 3/4.4.11 indicate the pressurizer vent, which was operable, is sufficient to meet the provisions of TS 3/4.4.11.
- The TS change was issued during mid-cycle and valves are not accessible during power operation.
- The duty Licensing manager's acknowledgement that it was known the valves were not locked and this fact had been previously discussed with Operations.
- Because the TS was issued mid-cycle, the shift crew considered the possibility of a compliance mechanism existing that would allow continued operation.

Based on the above information, the SOS concluded not enough information was available at the time to declare the reactor head vent system inoperable. The action statement for Specification 3.4.11 was not entered because the TS bases for 3/4.4.11 indicated two RCS vent paths were still operable. The SOS indicated either a waiver of compliance for SR 4.4.11.a would be needed or credit taken for the 18-month surveillance interval (before the valves would have to be verified locked). The duty Operations manager and the STA agreed with the SOS's assessment. The duty Operations manager and the duty Licensing manager committed to pursue the matter on the following "day shift." The duty plant manager was not notified because TS Action 3.4.11 was not entered.

On July 28, 1989, TVA contacted NRC to discuss the situation and ask if there were any interpretations regarding TSs issued mid-cycle with requirements that can only be complied with during an outage. Subsequent conversations occurred to discuss verification of open valves, possible flow tests, and waiver of compliance. NRC and TVA agreed that technically SQN was in noncompliance with the TS, and both units entered LCO 3.4.11 for inoperable RCS vent at 1700 EDT. The solenoid valves had power disconnected in accordance with the action statement, and TVA telecopied a formal request for waiver of compliance to NRC at 1745.

On July 31, 1989, at 1445 EDT, TVA and NRC held a telephone conference call to discuss available test data and TVA's position on conducting a flow test at power. TVA stated that a flow test in any mode other than Mode 5 would not be prudent and would constitute an unreviewed safety question. NRC approved the waiver of compliance and requested that TVA submit an exigent TS change. TVA submitted the exigent TS change to defer the requirement to lock the manual isolation valves until the next refueling outage for each unit. NRC approved exigent TS Change 89-38 on August 11, 1989.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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CAUSE OF EVENT

The root cause of the failure to implement SR 4.4.11.a was the failure of Operations to act on actions assigned in accordance with Standard Practice SQA30, "Responsibility for Technical Specification Changes and Operating License Amendments." In August and October of 1987 prior to receipt of the approved TS, Licensing had notified Operations in accordance with SQA30 that administrative controls and/or procedure revisions should be initiated to implement the reactor head vent system TS change. Actions were not taken prior to receipt of the new TS, which occurred during mid-cycle. A contributing cause was the failure of the management systems to follow up on these notifications and the failure to track the procedure revision action.

There are several causes of the failure of the shift crew to declare the RCS vent system inoperable, once they determined that the manual isolation valves were not locked. This included failure to recognize that the lack of a baseline performance for SR 4.4.11.a constituted noncompliance with the TSs.

An additional contributing cause was the discrepancy in the terminology used in the RCS vent specification. The term "paths" was used in the LCO, the term "system" was used in the footnote, and the TS bases stated that having either the head vent system or the pressurizer relief paths was sufficient to meet the provisions of Specification 3.4.11.

Another contributing cause was the failure of the various offsite managers contacted on the evening of July 27, 1989, to recognize that the lack of a baseline performance for SR 4.4.11.a constituted noncompliance with the TSs. Additionally, the duty plant manager was not notified the evening of July 27, 1989, although a questionable situation existed that could affect operability and TS compliance.

ANALYSIS OF THE EVENT

The event is being reported in accordance with 10 CFR 50.73, paragraph a.2.i.b, as an operation or condition prohibited by the plant's TSs. The RCS head vent system is a backup safety system installed as a result of the NRC actions initiated after the Three Mile Island accident. The system is designed to vent noncondensibles collected in the upper head generated during core uncovering scenarios. It can also be used to vent steam bubbles collected in the reactor head during rapid cooldown scenarios. Instructions for the use of the RCS head vent system are contained in the symptom-based Function Restoration Guideline FR-1.3. Because the manual valves were always open, although not locked, the system could still perform the required function. There was a minor safety impact during the 72-hour period the RCS head vent solenoid valves had power removed. The safety impact is limited to the possible problems associated with the task of restoring power to the solenoid valves prior to their use in the event of certain accident scenarios that lead to the generation of significant quantities of hydrogen. No impact is considered for the rapid cooldown scenarios because the plant design includes a relatively large amount of core bypass flow directed to the upper head region as part of the upper head functional requirements. This relatively large flow ensures that the upper head temperature will follow any primary loop cooldown without any significant time lag or temperature difference, preventing situations that could lead to steam bubble formation. At no time during the event did a safety problem exist that could cause a hazard to the health and safety of the plant staff or the general public.

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IMMEDIATE CORRECTIVE ACTIONS

- Both units entered LCO 3.4.11 for inoperable RCS head vents at 1700 EDT on July 28, 1989. Power was removed from the valves in accordance with Action a at 1745 EDT on July 28, 1989.
- TVA requested a waiver of compliance with respect to the SR 4.4.11.a requirement to have the manual isolation valves locked.
- NRC approved the waiver of compliance at 1605 EDT on July 31, 1989, and TVA restored power to the valves.
- TVA submitted an exigent TS change request on August 2, 1989.
- NRC approved the exigent TS change on August 11, 1989.

LONG-TERM CORRECTIVE ACTIONS

- There is no specific action considered appropriate to address Operations' failure to revise procedures when notified because of personnel changes that have taken place since the 1987 procedure revision requests. However, Standard Practice SQA30 was found to be deficient in several areas. It did not address implementation plans for proposed changes. The responsibility for ensuring implementation was divided between Site Licensing and the plant support staff. Initial procedure revision actions were not tracked. The implementation requirements did not address the need to establish baseline performance of new SRs.

SNQ will revise SQA30 to address these deficiencies by September 30, 1989.

- TS 3.4.11 was found to contain ambiguous language that could lead to possible misinterpretations.

SNQ previously committed to submit a revised TS to NRC by November 15, 1989.

- There was a general lack of understanding regarding the fact that the failure to have a baseline performance for a new SR constituted noncompliance with the TSs. There was additionally a failure to escalate this questionable situation to plant management in a timely manner.

The Site Director has conducted meetings with key site personnel to discuss TS requirements and the proper approach necessary to establish compliance, especially where situations are questionable or subject to interpretation. The Plant Manager, Operations Manager, and Operations Superintendent have met with the SOSs to emphasize the importance of notifying and escalating to upper plant management any questionable situations especially as related to TS requirements, reportability determinations, and operability determinations.

- Plant drawing changes and procedures revisions will be implemented to require the manual isolation valves to be locked open.

SNQ Operations will initiate the proper actions to ensure complete compliance by startup from the Cycle 4 refueling outage for each unit.

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ADDITIONAL INFORMATION

There have been no previous LERs written as a result of inoperable equipment because of implementation of revised TSs.

LIST OF NEW COMMITMENTS

1. SQN will revise SQA30 to address noted deficiencies by September 30, 1989.
2. SQN will initiate the proper actions to ensure complete compliance by startup from the Cycle 4 refueling outage for each unit.

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