

TENNESSEE VALLEY AUTHORITY

6N 38A Lookout Place
Chattanooga, Tennessee 37402-2801

June 25, 1990

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

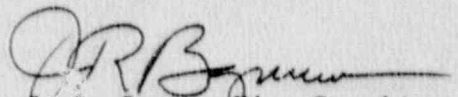
Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNIT 1 - DOCKET NO.
50-327 - FACILITY OPERATING LICENSE DPR-77 - LICENSEE EVENT REPORT (LER)
50-327/90010

The enclosed LER provides details concerning an entry into Limiting Condition for Operation 3.0.3 when a main steam isolation valve was declared inoperable because it failed to close while another main steam isolation valve was inoperable for maintenance. This event is being reported in accordance with 10 CFR 50.73(a)(2)(i) as an operation prohibited by technical specifications.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


J. B. Bynum, Vice President
Nuclear Power Production

Enclosure

cc (Enclosure):

INPO Records Center
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

NRC Resident Inspector
Sequoyah Nuclear Plant
2600 Igou Ferry Road
Soddy Daisy, Tennessee 37379

Regional Administration
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
101 Marietta Street, Suite 2900
Atlanta, Georgia 30323

9006280334 900625
PDR ADOCK 05000327
S PDC

JE22
11

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Sequoyah Nuclear Plant, Unit 1 DOCKET NUMBER (2) 050003 PAGE (3) 27 OF 04

TITLE (4) Limiting Condition for Operation 3.0.3 entered when one main steam line isolation valve (MSIV) failed to close with another MSIV inoperable for corrective maintenance.

EVENT DAY (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)		
05	26	90	001	0	06	25	90		050003		

OPERATING MODE (9) 3 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following)(11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> OTHER (Specify in
<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	Abstract below and in
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	Text, NRC Form 366A)
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
<u>Russell R. Thompson, Compliance Licensing Engineer</u>	<u>615 843-7470</u>

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

On May 26, 1990, at 0100 Eastern daylight time (EDT) with Unit 1 in Mode 3, Limiting Condition for Operation (LCO) 3.0.3 was entered because main steam isolation valve (MSIV) failed to close when another MSIV was inoperable for maintenance activities. A work request (WR) to adjust the packing on MSIV Loop 1 Valve 1-FCV-1-004 had been performed. During the performance of the WR, MSIV Loop 4 Valve 1-FCV-1-029 was erroneously stroked on two separate occasions. During the second stroking attempt, Valve 1-FCV-1-029 failed to close and was declared inoperable. A WR was immediately written to repair 1-FCV-1-029. Maintenance and postmaintenance testing (PMT) was completed on Valve 1-FCV-1-004, and LCO 3.0.3 was exited at 0316 EDT. Valve 1-FCV-1-029 was returned operable at 0426 EDT after the valve was stroke tested. The valve was found to have dirt and grime on the stem and valve guides and required only cleaning and relubricating to restore operability. The remaining two MSIVs were inspected and tested to ensure operability of the valves as a precautionary measure.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)			
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER				
Sequoyah Nuclear Plant Unit 1	0150101031217	90	01	01	01	01	01	01

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

Description of Event

On May 26, 1990, at 0100 Eastern daylight item (EDT) with Unit 1 in Mode 3 (0 percent reactor power, 2,140 pounds per square inch gauge [psig], and reactor coolant system [RCS] temperature at 547 degrees Fahrenheit [F]), Limiting Condition for Operation (LCO) 3.0.3 was entered when Main Steam Isolation Valve (MSIV) 1-FCV-1-029 (EIIS Code SB) was declared inoperable when the valve failed to close when stroked, and Valve 1-FCV-1-004 was inoperable at the same time for maintenance activities. LCO 3.7.1.5. provides an action statement in Mode 3 for one MSIV inoperable, i.e., subsequent operation in Modes 2 or 3 may proceed provided the isolation valve is maintained closed. Additionally, the provisions of Technical Specification (TS) 3.0.4 are not applicable in Modes 2 or 3. Otherwise, it requires the unit to be placed in at least hot standby within the next six hours and in hot shutdown within the following six hours. No action statement is provided for two MSIVs being inoperable.

On May 25, 1990, at approximately 2300 EDT, MSIV 1-FCV-1-004 was removed from service to perform packing adjustments and limit switch adjustments. In accordance with TS, LCO 3.7.1.5 was entered when MSIV 1-FCV-1-004 was declared inoperable. 1-FCV-1-004 was closed at this time in accordance with the action provisions of LCO 3.7.1.5. During the performance of the maintenance activities, personnel contacted the main control room (MCR) and requested that "No. 4" MSIV be stroked. The control room operator then stroked Loop 4 MSIV 1-FCV-1-029 instead of Loop 1 MSIV 1-FCV-1-004. Maintenance personnel in the vicinity of the MSIVs noted immediately that the wrong MSIV had been actuated. The Maintenance personnel notified the control room of the error, and the control room operator opened MSIV 1-FCV-1-029. MSIV 1-FCV-1-004 was then stroked for Surveillance Instruction (SI) 166.6, "Testing of Category 'A' or 'B' Valves After Maintenance or Upon from a Hold Order." MSIV 1-FCV-1-004 did not meet its SI-166.6 stroke time requirements, and the valve packing was again adjusted. (During this period, the midnight shift Operations crew replaced the evening shift crew.)

After the packing on MSIV 1-FCV-1-004 had been readjusted, Maintenance personnel again requested the MSIV be stroked. Again MSIV 1-FCV-1-029 was stroked instead of MSIV 1-FCV-1-004. The control room operator noted that MSIV 1-FCV-1-029 did not indicate full closed. This was confirmed by Maintenance and Operations personnel, which noted that the valve lacked 1 to 2 inches from stroking full closed. (MSIV 1-FCV-1-029 did eventually "drift" to the full closed position before any maintenance was performed.) A WR was written to repair MSIV 1-FCV-1-029 at this time. Upon recognition of both MSIVs being inoperable, the shift operations supervisor (SOS) immediately entered LCO 3.0.3. Maintenance continued to work on MSIV 1-FCV-1-004, and after valve packing adjustments and limit switch setting were completed, the valve was stroke tested in accordance with SI 166.6. Upon successful completion of SI-166.6 for MSIV 1-FCV-1-004, the valve was declared operable, and LCO 3.0.3 was exited at 0316 EDT on May 26, 1990. Unit 1 remained in LCO 3.7.1.5 as work continued on MSIV 1-FCV-1-029. Maintenance polished and relubricated the stem and valve guides of MSIV 1-FCV-1-029, and stroke tested the valve in accordance with SI-166.6. SI-166.6 documented the stroke time of less than five seconds, the valve was declared operable, and LCO 3.7.1.5 was exited at 0426 EDT.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)				PAGE (3)						
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER								
Sequoyah Nuclear Plant Unit 1	05000327	19	0	0	0	1	0	0	0	3	0	4

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

Cause of Event

The root cause of this event--the failure of one MSIV with another already inoperable for corrective maintenance--has not been determined, but is attributed to be the result of valve stem and valve guide binding (MSIV 1-FCV-1-004 required packing adjustments, limit switch setting, and relubrication; MSIV 1-FCV-1-029 required cleaning of the stem and valve guides and relubrication). Testing to satisfy Surveillance Requirement 4.7.1.5 was satisfactorily completed on April 3, 1990, and the MSIV valve stems and valve guides were cleaned and lubricated on May 14, 1990. No cause for the dirt and grime on 1-FCV-1-029 was determined. Additionally, the event was identified as a result of miscommunication between Maintenance and Operations personnel.

Analysis of Event

This event is being reported in accordance with 10 CFR 50.73(a)(2)(i) as an operation prohibited by technical specifications.

The design of the main steam system is described in Section 10.3 of the SQN Updated Final Safety Analysis Report (UFSAR). As shown on UFSAR, Figure 10,3,2-1, capability to isolate each of the main steam lines is provided by an MSIV in series with a check valves. The steam line warning lines (MSIV bypass lines) also contain isolation valves.

Rapid closure (automatic) of the MSIVs is required to mitigate a postulated rupture of the main steam lines (reference UFSAR, Section 15.4.2). Isolation of the steam lines limits the cooldown transient in the reactor coolant system by terminating/limiting the blowdown of the steam generator inventory.

Manual closure of an MSIV is used to mitigate the consequence of a postulated steam generator tube rupture (reference UFSAR, Section 15.4.3). During this event, the MSIV on the faulted steam generator is closed to minimize contamination of the secondary system and ensure termination of radioactive releases to the atmosphere.

The plant configuration continued to be bounded by the UFSAR accident analysis during the time LCO 3.0.3 was applied. Loop 1 MSIV 1-FCV-1-004 was closed during this period, except when it was opened to perform stroke time testing. Therefore, it was capable of performing its intended safety function. Because an independent single random failure need not be assumed while complying with TS action provisions (reference American National Standards Institute/American Nuclear Society 58.9), the inability to close 1-FCV-1-029 does not violate the assumptions of the steam line rupture analyses presented in UFSAR Section 15.4.2. These analyses assume that one MSIV does not close concurrent with the postulated steam line rupture. Additionally, the time duration involved with this event was sufficiently short so that the probability of a severe accident was not significantly increased. Within three hours, the main steam

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)				PAGE (3)						
		SEQUENTIAL		REVISION								
		YEAR	NUMBER	NUMBER								
Sequoyah Nuclear Plant Unit 1		0	1	0	--	0	0	0	4	OF	0	4

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

Analysis of Event (Continued)

isolation valves were restored to operability. Because the plant configuration was bounded by the UFSAR accident analysis, and the time duration of the event was short, this event did not adversely affect the health and safety or plant personnel or the general public.

Corrective Action

As immediate corrective action, Unit 1 entered LCO 3.0.3. Maintenance completed work scheduled on MSIV 1-FCV-1-004 and LCO 3.0.3 was exited. Maintenance then completed work on MSIV 1-FCV-1-029 and restored it to operable status. A work request was written to ensure the remaining two MSIVs 1-FCV-1-011 and 1-FCV-1-022 were operable. Each MSIV was lubricated, and the valves were stroke tested in accordance with SI-166.6. No problems were identified with MSIVs 1-FCV-1-011 and 1-FCV-1-022.

As corrective action for the miscommunication between Maintenance and Operations, the importance of clear communication was discussed with the personnel involved with this event at the time of occurrence. Additionally, an Operations training letter will be prepared by July 9, 1990, reinforcing the importance of good communication practices when manipulating plant equipment. This LER will also be included with the lesson plans for Weeks 4 and 5 Operations requalification training by July 16, 1990, and 1990 third quarter Maintenance briefing on Industry and SQN Experience Report Familiarization by August 3, 1990.

Additional Information

There have been no previous LERs reported as a result of entry into LCO 3.0.3 because of inoperable MSIVs.

Commitments

1. An Operations training letter will be prepared by July 9, 1990, reinforcing the importance of good communication practices when manipulating plant equipment.
2. This LER will be incorporated into the lesson plan for Weeks 4 and 5 of Operations requalification training by July 16, 1990.
3. This LER will be included with the lesson plan for the 1990 third quarter Maintenance briefing on industry and SQN Experience Report Familiarization by August 3, 1990.

0907h