

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <u>Sequoyah, Unit 1</u>	DOCKET NUMBER (2) 0   5   0   0   0   3   2   7	PAGE (3) 1 OF 04
--	--	---------------------

Two Surveillance Requirements Not Performed Because of Inadequate Procedures

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																																					
0	9	8	8	6	0	1	0	8	<u>Sequoyah, Unit 2</u>																																					
6	8	6	6	0	0	6	8	6	DOCKET NUMBER(S) 0   5   0   0   0   3   2   8																																					
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9) 5</td> <td colspan="11">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="5">POWER LEVEL (10) 0.0 b</td> <td>20.402(b)</td> <td>20.405(c)</td> <td>50.73(a)(2)(iv)</td> <td>73.71(b)</td> </tr> <tr> <td>20.405(a)(1)(i)</td> <td>50.36(c)(1)</td> <td>50.73(a)(2)(v)</td> <td>73.71(c)</td> </tr> <tr> <td>20.405(a)(1)(ii)</td> <td>50.36(c)(2)</td> <td>50.73(a)(2)(vii)</td> <td rowspan="3">OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td> </tr> <tr> <td>20.405(a)(1)(iii)</td> <td>50.73(a)(2)(i)</td> <td>50.73(a)(2)(viii)(A)</td> </tr> <tr> <td>20.405(a)(1)(iv)</td> <td>50.73(a)(2)(ii)</td> <td>50.73(a)(2)(viii)(B)</td> </tr> <tr> <td>20.405(a)(1)(v)</td> <td>50.73(a)(2)(iii)</td> <td>50.73(a)(2)(ix)</td> <td></td> </tr> </table>												OPERATING MODE (9) 5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)											POWER LEVEL (10) 0.0 b	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)	20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	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)	
OPERATING MODE (9) 5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)																																													
POWER LEVEL (10) 0.0 b	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)																																										
	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)																																										
	20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	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)																																												

LICENSEE CONTACT FOR THIS LER (12)

NAME <u>Glenn Duggin, Plant Operating Review Staff</u>	TELEPHONE NUMBER 6   1   5   8   7   0   -   6   5   4   8
---	---

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)

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

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

On September 8, 1986, it was determined that an inadequate surveillance instruction (SI) existed for parts of Surveillance Requirement (SR) 4.0.5 in that SI-129, "Emergency Core Cooling Safety Injection Pump Operability," does not require the verification of closing of the discharge check valve during testing if the reactor coolant system is less than 1700 psig. Also, this SI and SIs for other pumps do not require system resistance to be varied to determine a reference value to evaluate pump performance. These are ASME Boiler and Pressure Vessel Code, Section XI criteria that have not been met. The SIs will be revised to correct performance of the test or relief will be requested.

On September 8, 1986, it was determined that thermocouples and resistance temperature detectors (RTD) have not been calibrated as required by technical specification (TS) definition 1.3 for channel calibration. The TS requires the sensor to be calibrated when the channel is calibrated, but since thermocouples and RTDs cannot be adjusted, a calibration was previously assumed to be nonapplicable. Several systems contain thermocouples and RTDs on both units which have not been included in the calibration. As corrective action, a calibration technique will be implemented before startup.

For both the above occurrences, the cause has been determined to be inadequate procedures for implementation of the surveillance requirements. All of the above calibrations, tests, and procedure changes will be complete or resolved before unit startup.

LER 111

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Sequoyah, Unit 1	DOCKET NUMBER (2)  0 5   0 0   0 3   2 7	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8   6	— 0 4 2	— 0   0	0   2	OF	0   4

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

DESCRIPTION OF EVENT

Both events described in this report were discovered while unit 1 was in mode 5 (0 percent power, 300 psig, 129 degrees F) and unit 2 was in mode 5 (0 percent power, 300 psig, 125 degrees). These events were discovered by a procedure review effort still in progress. The procedures apply to both units 1 and 2.

Event Number One

The following items pertain to Surveillance Requirement (SR) 4.0.5, which are the ASME Boiler and Pressure Vessel Code, Section XI requirements.

At 1330 CDT on September 8, 1986, it was determined that SI-129, "Emergency Core Cooling Safety Injection Pump Operability," does not require verification of the closing of the discharge check valve on the safety injection pump (SIP) (IEEE system BQ) during testing if the reactor coolant system (RCS) (IEEE system AB) is less than 1700 psig. This check valve test ensures that if one SIP fails to start, flow will not be lost back through the failed SIP. For test performance when RCS pressure is greater than 1700 psi, the verification of closing of the discharge check valve is performed.

The 1977 ASME Boiler and Pressure Code, Section XI, Subsection IWP-3100 requires that the differential pressure or measured flow rate equals a reference value (baseline value) in performance of an in-service test. For the centrifugal charging pumps, safety injection pumps, residual heat removal pumps, containment spray pumps, boric acid transfer pumps, auxiliary feedwater pumps, and the diesel fuel transfer pumps for unit 2 only, the system resistance has not been varied to set either the differential pressure or flow to evaluate pump performance. Unit 1 follows the 1974 code which does not have this requirement for fixed resistance systems. See additional information for a list of pumps and SIs affected.

Event Number Two

At 1600 CDT on September 8, 1986, it was determined that the calibration of temperature sensors, thermocouples and resistance temperature detectors (RTD), has not been performed as required by the technical specification (TS) definition 1.3 for channel calibration. The sensor is required to be calibrated when the rest of the channel is calibrated but was not done. A channel usually consists of a sensor, modifier, and indicator and may supply an input to the reactor protection system logic. These temperature sensors are used in several places on various systems, such as the RCS narrow range temperature, residual heat removal (RHR) temperature (IEEE system BP), pressurizer relief tank (PRT) temperature (IEEE system AB), and the incore thermocouples (IEEE system IG). All elements of these channels have been calibrated as required except for the sensor. These temperature sensors are not required operable in mode 5.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Sequoyah, Unit 1	DOCKET NUMBER (2)  0 5   0   0   0   3   2   7 8   6	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8   6	- 0   4   2	- 0   0	0   3	OF 0   4

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

CAUSE OF EVENTS

Event Number One

This lack of a closing test for the SIP discharge check valve at less than 1700 psig was caused by the valve alignment required by the procedure at less than 1700 psig. This valve alignment was chosen to prevent the SIP from injecting into the RCS at low pressure.

The system resistance/reference value for pump testing event was caused by the item being left out of the procedures during initial writing of the procedure because of the complexity of SR 4.0.5 requirements and our interpretation of ASME XI requirements. It is suspected that the procedures were initially written for unit 1, subject to the 1974 code, and not later revised to reflect the 1977 code requirements for unit 2.

Event Number Two

These temperature sensors have no calibration adjustments; therefore, it had been assumed that no calibration was necessary. However, the definition of channel calibration requires the sensor to be included in the calibration of a channel.

ANALYSIS OF EVENTS

Both of these events are failures to perform SRs which ensure equipment operability, and they are reportable under 10 CFR 50.73, paragraph a.2.i.

If any equipment failure or degradation had occurred, the appropriate limiting condition for operation (LCO) would have been entered and followed.

No problems have been discovered during plant operation or testing of the affected pumps. The method of testing used was slightly less conservative than the ASME requirements; however, significant pump degradation would still have been detected using current methods. The discharge check valves on the SIPs have never failed to backseat during a performance of SI-129 with RCS pressure greater than 1700 psig. The proper functioning of the sensor can be detected by channel checks or continuity checks, and thermocouples and RTD failures would have been detected by channel checks and functional tests. The operability of plant equipment has not been significantly affected, while in any mode, by the inadequate pump surveillance instructions (SIs) or the failure to calibrate temperature sensors.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Sequoyah, Unit 1	DOCKET NUMBER (2)  0 5 0 0 0 3 2 7 8 6 - 0 4 2 - 0 0 0 0 4 OF 0 4	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		

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

## CORRECTIVE ACTIONS

## Event Number One

SI-129 will be revised to require verification of closing of the discharge check valve with RCS pressure less than 1700 psi. Relief will be requested from ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWP-3100 on some of the pumps because of the danger of pump damage, and the remaining pumps will be tested correctly. All action will be completed before unit startup.

## Event Number Two

A Westinghouse cross-calibration procedure will be implemented to verify calibration of the RCS RTDs and thermocouples. Industry methods for calibration for temperature sensors are being evaluated, and a calibration verification method will be chosen and implemented for the other temperature channels by startup.

## ADDITIONAL INFORMATION

A complete SI review and TS comparison is still being performed by various plant sections. If other discrepancies are discovered, they will be reported as required under 10 CFR 50.73 rules.

Listed below are the ASME, Section XI, pump SIs affected by the system resistance/reference value event. Only the unit 2 pumps were affected with the exception of centrifugal charging pumps:

SI-7	Electrical Power System: Diesel Generators
SI-37	Containment Spray Pump Test - Units 1 and 2
SI-40	Centrifugal Charging Pump - Units 1 and 2
SI-128	Emergency Core-Cooling Systems Residual Heat Removal Pumps - Units 1 and 2
SI-129	Emergency Core Cooling Safety Injection Pump Operability - Units 1 and 2
SI-130.1	Turbine-Driven Auxiliary Feedwater Pumps - Units 1 and 2
SI-130.2	Motor Driven Auxiliary Feedwater Pumps - Units 1 and 2
SI-304	Boric Acid Transfer Pumps - Units 1 and 2

Previous Occurrences - SR not performed - 12 - SQRO-50-327/86039, 86035, 86030, 86027, 86023, 86020, 86018, 86017, 86013, 86011, 86008, and 86007. ASME Tests - 2 - SQRO-50-327/86031 and 86028.

TENNESSEE VALLEY AUTHORITY

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

October 8, 1986

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

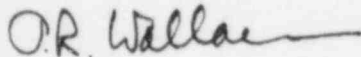
Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNIT 1 - DOCKET NO.  
50-327 - FACILITY OPERATING LICENSE DPR-77 - REPORTABLE OCCURRENCE REPORT  
SQRO-50-327/86042

The enclosed licensee event report provides details concerning the two technical specification surveillance requirements not being performed because of inadequate procedures. This event is reported in accordance with 10 CFR 50.73, paragraph a.2.i.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



P. R. Wallace  
Plant Manager

Enclosure  
cc (Enclosure):

J. Nelson Grace, Regional Administrator  
U.S. Nuclear Regulatory Commission  
Suite 2900  
101 Marietta Street, NW  
Atlanta, Georgia 30323

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

NRC Inspector, Sequoyah Nuclear Plant