



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37379-2000

Robert A. Fenech  
Vice President, Sequoyah Nuclear Plant

December 31, 1992

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

Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNIT 2 - DOCKET  
NO. 50-328 - FACILITY OPERATING LICENSE DPR-79 - LICENSEE EVENT REPORT  
(LER) 50-328/92015

The enclosed LER provides details concerning a manual start of the  
auxiliary feedwater system resulting from a secondary system  
perturbation. This event is being reported in accordance with  
10 CFR 50.73(a)(2)(iv) as an event that resulted in the manual actuation  
of engineered safety features.

Sincerely,

Robert A. Fenech

Enclosure  
cc: See page 2

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U.S. Nuclear Regulatory Commission

Page 2

December 31, 1992

cc (Enclosure):

INPO Records Center  
Institute of Nuclear Power Operations  
1100 Circle 75 Parkway, Suite 1500  
Atlanta, Georgia 30339-3064

Mr. D. E. LaBarge, Project Manager  
U.S. Nuclear Regulatory Commission  
One White Flint, North  
11555 Rockville Pike  
Rockville, Maryland 20852-2739

NRC Resident Inspector  
Sequoyah Nuclear Plant  
2600 Igou Ferry Road  
Soddy-Daisy, Tennessee 37379-3624

Mr. B. A. Wilson, Project Chief  
U.S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323-0199

(6-89)

Expires 4/30/92

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Sequoyah Nuclear Plant, Unit 2 DOCKET NUMBER (2) 050003 PAGE (3) 18  
 TITLE (4) Manual Auxiliary Feedwater Start as a Result of a Secondary System Perturbation.

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 (5)
12	08	92	015	00	12	03	92				050003

OPERATING MODE (9) 1 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5:  
 (Check one or more of the following)(11)  
 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  
 (10) 10  20.405(a)(1)(iii)  50.73(a)(2)(i)  50.73(a)(2)(viii)(A) Abstract below and in  
 20.405(a)(1)(iv)  50.73(a)(2)(ii)  50.73(a)(2)(viii)(B) Text, NRC Form 366A  
 20.405(a)(1)(v)  50.73(a)(2)(iii)  50.73(a)(2)(x)

LICENSEE CONTACT FOR THIS LER (12)

NAME J. W. Proffitt, Compliance Licensing TELEPHONE NUMBER 615843-6651  
 AREA CODE

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
X	S/D	L/C	V/V	037	N				

SUPPLEMENTAL REPORT EXPECTED (14)

EXPECTED SUBMISSION DATE (15) NO

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

On December 8, 1992, at 0942 Eastern standard time (EST), with Unit 2 operating at approximately 100 percent reactor power, a turbine runback and further manual reduction to approximately 28 percent reactor power occurred. A failure of the No. 3 heater drain tank (HDT) level controller initiated the transient. Before the event, the controller was operating erratically. The system engineer, in conjunction with Operations, thought that debris or water may have been affecting the controller. The system engineer depressed the controller relay clean-out plug momentarily, which appeared to make the controller more stable. When the controller began operating erratically again, the system engineer depressed the clean-out plug again. The plug stuck in the depressed position, resulting in the controller output going to zero and the No. 3 HDT level control valves beginning to close. Condensate flow was subsequently diverted to the condenser, resulting in an automatic runback. Further manual reduction was taken because of steam flow/feedwater flow mismatch and low steam generator levels; the motor-driven auxiliary feedwater pumps were manually started. The unit was stabilized, and the No. 3 HDT level controller relay was replaced and returned to service.

(6-89)

Expires 4/30/92

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	NUMBER	REVISION NUMBER	
Sequoyah Nuclear Plant, Unit 2		1992	015	000	2 of 5

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

## I. PLANT CONDITIONS

Unit 2 was in power operation at approximately 100 percent reactor thermal power.

## II. DESCRIPTION OF EVENT

## A. Event

On December 8, 1992, at 0942 Eastern standard time (EST), a turbine runback and further manual reduction to approximately 28 percent reactor power occurred. A malfunction of the No. 3 heater drain tank (HDT) level controller (EIIS Code LC) relay initiated the transient. Before the event, the controller was operating erratically; therefore, the system engineer, in conjunction with Operations, thought that debris or water may have been affecting the controller. The system engineer depressed the controller relay clean-out plug momentarily, which appeared to make the controller more stable. The clean-out plug is a device used to remove debris or moisture from the controller relay. The system engineer had checked for moisture but was not sure if moisture was present. When the controller began operating erratically again, he proceeded to depress the clean-out plug again. This time, the plug stuck in the depressed position, resulting in the controller output going to zero and the No. 3 HDT level control valves beginning to close. This resulted in an automatic runback and subsequent manual runback. During the event, because of steam flow/feedwater flow mismatch and low steam generator levels, the motor-driven auxiliary feedwater (AFW) (EIIS Code BA) pumps were manually started. The No. 3 HDT level controller relay was replaced and returned to service.

B. Inoperable Structures, Components, or Systems That Contributed to the Event

None.

C. Dates and Approximate Times of Major Occurrences

1. December 8, 1992 at 0910 EST      The Unit 2 turbine building assistant unit operator (AUO) notified the Unit 2 senior reactor operator (SRO) that the No. 3 HDT level was increasing to the top of the sight glass.
2. December 8, 1992 at 0915 EST      The Unit 2 SRO notified the system engineer of the increasing level in the No. 3 HDT.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)								
		YEAR	NUMBER	REVISION	NUMBER	OF	TOTAL						
Sequoyah Nuclear Plant, Unit 2	015010312181912	--	0	1	5	--	0	0	0	3	OF	0	5

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

3. December 8, 1992 at 0930 EST  
The system engineer and the Unit 2 turbine building AUO went to investigate the problem with the No. 3 HDT level controller and make necessary adjustments.
4. December 8, 1992 between 0930 EST and 0942 EST  
After consulting with the AUO, the system engineer depressed the clean-out plug on the No. 3 HDT level controller to clear out any debris or moisture that could be causing the controller's erratic operation. The clean-out plug was depressed a second time and became stuck.
5. December 8, 1992 at 0942 EST  
The main control room (MCR) Operations personnel observed the No. 3 HDT flow decreasing and other secondary side perturbations and automatic runback. As a result of the transient, a large mismatch existed between feedwater flow and steam flow. To compensate, the MCR operators continued a manual reduction and started the motor-driven AFW pumps to increase steam generator level.
6. December 8, 1992 at 0956 EST  
The plant was stabilized at 28 percent reactor power, and AFW was subsequently removed from service.

D. Other Systems or Secondary Functions Affected

None.

E. Method of Discovery

The condensate/feedwater transient was discovered during observations of plant parameters by MCR Operations personnel following the malfunction of the No. 3 HDT level controller relay.

F. Operator Actions

As a result of the condensate/feedwater transient, Operations personnel started the motor-driven AFW pumps in response to a steam flow/feedwater flow mismatch and decreasing steam generator levels. The plant was subsequently placed in a stable condition at 28 percent reactor power.

G. Safety System Responses

The auxiliary feedwater system performed as expected.



## LICENSEE EVENT REPORT (LER)

## TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	NUMBER	REVISION	NUMBER	OF	TOTAL
Sequoyah Nuclear Plant, Unit 2	10500032892	0	15	0	0	4	5

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

## III. CAUSE OF EVENT

A. Immediate Cause

Auxiliary feedwater was manually started as a result of low steam generator level and a steam flow/feedwater flow mismatch, following a condensate and feedwater transient.

B. Root Cause

The root cause of the condensate/feedwater transient was determined to be failure of the No. 3 HDT level controller relay clean-out plug to operate as designed. During investigation of the No. 3 HDT level controller operating erratically, the clean-out plug was depressed and became stuck in the depressed position, initiating the transient. The whisker on the end of the clean-out plug was subsequently found to be bent, causing mechanical binding. The cause of the bent whisker has not been determined.

C. Contributing Factors

None.

## IV. ANALYSIS OF EVENT

Plant equipment required to operate after AFW was manually started, performed as expected. Plant parameters were reviewed and were found to be within expected ranges. Therefore, the event did not adversely affect the health and safety of plant personnel or the public.

## V. CORRECTIVE ACTION

A. Immediate Corrective Actions

As a result of the condensate/feedwater transient, Operations personnel manually started the AFW pumps in response to decreasing steam generator levels and loss of the 2A MFP. The plant was subsequently placed in a stable condition.

B. Corrective Actions to Prevent Recurrence

The No. 3 HDT level controller problem was corrected and the controller was returned to service.

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 2	0500328	1982	015	00	0	0	5 OF 5

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

VI. ADDITIONAL INFORMATION

A. Failed Components

The clean-out plug on the No. 3 HDT level controller relay failed in the depressed position initiating the event.

B. Previous Similar Events

A review of previously reported events identified several events associated with condensate and feedwater transients. Although these events involved level control valve and/or controller problems, they were not similar to the problem discussed in this LER. This is the first LER that resulted from a malfunction of the level controller relay clean-out plug. Therefore, the corrective action could not have prevented this event.