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Robert A. Fenech
Vice President, Sequoyah Nuclear Plant

February 8, 1994

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) 50-328/94003

The enclosed LER provides details concerning the opening of a cold leg accumulator isolation valve. This resulted in 90 gallons of the cold leg accumulator solution injecting into the reactor coolant system. This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv) as an event that resulted in an engineered safety feature actuation.

Sincerely,

Robert A. Fenech

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Enclosure
cc: See page 2

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cc (Enclosure):

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NRC Form 366 (5-92)

U.S. NUCLEAR REGULATORY COMMISSION

Approved OMB No. 3150-0104
Expires 5/31/95

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
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TITLE (4)
The Opening of a Cold Leg Accumulator (CLA) Isolation Valve Results in Injection Into Reactor Coolant System

EVENT DAY (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 1	1 0	9 4	9 4	0 0 3	0 0	0 2	0 8	9 4		0 5 0 0 0

OPERATING MODE (9)	4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following)(11)			
POWER LEVEL (10)	0 0	20.402(b)	20.405(c)	XX 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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (AREA CODE)
K. E. Meade, Compliance Licensing	6 1 5 8 4 3 - 7 7 6 6

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)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On January 10, 1994, Unit 2 was preparing to start up from a forced outage. The Unit 2 senior reactor operator (SRO) directed a unit operator and an assistant shift operations supervisor trainee to lift a clearance on the CLA isolation valves. Once power was restored, the valve immediately started opening. The operators quickly opened the breaker to the power supply and contacted the main control room SRO. The SRO instructed the operators to place power back on the valve so that the main control room operators could close the valve. Approximately 90 gallons of inventory from the No. 1 CLA injected into the reactor coolant system. The cause of this event was that personnel did not fully evaluate the cause and effect of placing power on the CLA isolation valves at that point in the start-up process. The operators involved with this event will be counseled by the Operations superintendent with regard to attention to detail and the Stop-Think-Act-Review (STAR) process.

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

I. PLANT CONDITIONS

Unit 2 was in Mode 4 with the reactor coolant system (RCS) at approximately 338 degrees Fahrenheit (F) and 580 pounds per square inch gauge (psig).

II. DESCRIPTION OF EVENT

A. Event

On January 10, 1994, Unit 2 was preparing to start up from a forced outage as the result of a charging pump problem. Operations personnel were in preparation to change from Mode 4 to Mode 3 (RCS temperature greater than 350 degrees F). The Unit 2 senior reactor operator (SRO) directed an unit operator and an assistant shift operations supervisor trainee to lift the clearances on the cold leg accumulator (CLAs) isolation valves. The CLAs are required to be operable in Mode 3 with pressurizer pressure greater than 1,000 psig. This clearance is normally lifted in accordance with General Operating Instruction (GOI) 1 with the unit in Mode 3. However, the operators were already going to be in the area of the CLA breakers, performing additional steps in GOI-1. Therefore, Operations personnel decided to lift the subject clearance at this time instead of making two trips to the electrical board. The operators lifted the clearance to the No. 1 CLA isolation valve and restored power to the valve. Once power was restored, the valve immediately started opening. The operators quickly opened the breaker to the power supply and contacted the main control room SRO. The SRO instructed the operators to place power back on the valve so that the main control room operators could close the valve. The valve opened as the result of seal-in contact in the open circuit for the subject valve. This seal-in is normally broken by cycling the control power breaker for the CLA isolation valve. This action is delineated in a later step in GOI-1. The event lasted less than two minutes. Approximately 90 gallons of inventory from the No. 1 CLA injected into the reactor coolant system.

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

None.

C. Dates and Approximate Times of Major Occurrences

January 10, 1993 1900 Eastern standard time (EST)	The Unit 2 SRO held a prejob briefing with the personnel involved with lifting the subject clearance. All aspects of the job were discussed, including the inadvertent opening of any of the valves.
January 10, 1994 1916 EST	The subject operators lifted the clearance to the No. 1 CLA isolation valve. The valve opened and injected approximately 90 gallons of inventory into the RCS before the valve could be closed.

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D. Other Systems or Secondary Functions Affected

None.

E. Method of Discovery

The operators immediately observed that the valve was opening once power was placed on the valve.

Operator Actions

Operations personnel immediately opened the power supply breaker to the subject valve and contacted the main control room once it was determined that the valve had started to open. Personnel were instructed to place power back on the valve in order to allow the main control room operators to close the valve. This quick response minimized the amount of inventory from the CLA that was injected into the RCS.

G. Safety System Response

No safety system responses were required.

III. CAUSE OF EVENT

A. Immediate Cause

The immediate cause of this event was the failure to cycle the control power breaker that would break the seal-in contact in the open circuit of the CLA isolation valve.

B. Root Cause

The root cause of this event was that personnel did not fully evaluate the cause and effect of placing power on the CLA isolation valves at that point in the start-up process. The personnel involved discussed lifting the clearance and the possible ramifications but failed to remember the GOI step that states, "cycling of the control power breaker is required to prevent opening of the valve."

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IV. ANALYSIS OF EVENT

The CLAs are designed to inject approximately 8,000 gallons of between 2,400 and 2,700 parts per million of borated water into the RCS in the event of a loss of coolant accident. The CLAs are required by technical specifications to be operable in Mode 3 with the pressurizer pressure greater than 1,000 psig. This event occurred with the unit in Mode 4 at a pressurizer pressure of approximately 580 psig. Therefore, the CLAs were not required to be operable.

Thermal shock to the RCS as a result of the injection of 90 gallons of CLA inventory was also analyzed. The No. 1 reactor coolant pump was running during this event. The No. 1 CLA injects into the Loop 1 RCS cold leg. The water injected by the cycling of the CLA isolation valve would have been quickly swept away. A pocket of cold water would not have been left as a result of this event. Therefore, this analysis has determined that thermal shocking of the RCS did not occur as a result of this event.

Reactivity control was also evaluated for this condition. However, the RCS was already borated to shutdown conditions. The addition of the 90 gallons of CLA inventory would not have significantly affected this condition.

Based on this information, it has been concluded that there was no danger to the health and safety of the public as a result of this event.

V. CORRECTIVE ACTION

A. Immediate Corrective Action

The immediate corrective action for this event was to close the CLA isolation valve. This was accomplished in an expeditious manner by Operations personnel.

B. Corrective Action to Prevent Recurrence

The operators involved with this event will be counseled by the Operations superintendent with regard to attention to detail and the Stop-Think-Act-Review (STAR) process.

An operator aide was placed on the CLA isolation valve breaker compartment stating the requirement to cycle the control power breaker before closing the supply power breaker to the isolation valve.

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

VI. ADDITIONAL INFORMATION

A. Failed Components

None.

B. Previous Similar Events

A review of previous similar reportable events identified several LERs associated with clearance problems. The corrective actions for these LERs were specific to the subject events and would not have prevented this event from occurring.

VII. COMMITMENT

The operators involved with this event will be counseled by the Operations superintendent by February 28, 1994, with regard to attention to detail and the Stop-Think-Act-Review (STAR) process.