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Robert A. Fenech  
Vice President, Sequoyah Nuclear Plant

April 22, 1993

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) 50-328/93004

The enclosed LER provides details concerning a failure to perform a  
surveillance instruction for verification of ice condenser chemistry.

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

Sincerely,

Robert A. Fenech

Enclosure  
cc: See page 2

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S PDR

U.S. Nuclear Regulatory Commission

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cc (Enclosure):

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## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Sequoyah Nuclear Plant, Unit 2 DOCKET NUMBER (2) | PAGE (3) |  
015001013 12 18 11 OF 017TITLE (4) Failure to Perform a Technical Specification (TS) Surveillance Instruction for Verification of  
Ice Condenser Chemistry Within the Required TS TimeframeEVENT DAY (5) | LER NUMBER (6) | REPORT DATE (7) | OTHER FACILITIES INVOLVED (8)  
| SEQUENTIAL | REVISION | FACILITY NAMES | DOCKET NUMBER(S) |  
MONTH | DAY | YEAR | YEAR | NUMBER | NUMBER | MONTH | DAY | YEAR | |  
01 | 31 | 2 | 3 | 9 | 3 | 9 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 2 | 2 | 9 | 3 | | 01500101 | |OPERATING | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5:  
MODE | (Check one or more of the following)(11)  
(9) | 5 | 20.402(b) | 20.405(c) | 50.73(a)(2)(iv) | 73.71(b)  
POWER | 20.405(a)(1)(i) | 50.36(c)(1) | 50.73(a)(2)(v) | 73.71(c)  
LEVEL | 20.405(a)(1)(ii) | 50.36(c)(2) | 50.73(a)(2)(vii) | OTHER (Specify in  
(10) | 0 | 0 | 0 | 20.405(a)(1)(iii) | XX 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 | TELEPHONE NUMBER  
| AREA CODE |  
C. H. Whittemore, Compliance Licensing | 6 | 1 | 5 | 8 | 4 | 3 | - | 7 | 2 | 1 | 0

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

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

## SUPPLEMENTAL REPORT EXPECTED (14)

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

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

On March 23, 1993, with Unit 2 in Mode 5, Chemistry personnel were preparing to perform the annually-required surveillance instruction (SI) for ice condenser chemistry when it was discovered that the surveillance interval as specified in Technical Specification (TS) 4.6.5.1 had been exceeded. The last performance of the SI was on September 21, 1991. In March 1992, a non-TS special SI that measured the boron concentration of the ice before it was blown into the ice condenser ice baskets was erroneously accepted as a completed test that satisfied TS Surveillance Requirement 4.6.5.1(b). The acceptance of the SI as a TS test caused the regular periodical SI to be rescheduled. Upon discovery of the missed surveillance, the surveillance test verifying the acceptability of the chemistry of the ice was immediately performed by the Chemistry test personnel and found to meet the acceptance criteria. The cause of this event was ineffective communication between Chemistry personnel and Technical Information Center personnel, coupled with a lack of knowledge of the rescheduling matrix by the SI test director and poor procedural guidance. The procedure governing the surveillance test program will be revised to clearly delineate the test director's and SI reviewer's responsibilities concerning the completion of the data sheets for verification of SI performance.

LICENSEE EVENT REPORT (LER)

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)				PAGE (3)			
Sequoyah Nuclear Plant, Unit 2			SEQUENTIAL		REVISION				
		YEAR	NUMBER		NUMBER				
	0500032893	--	0	0	4	--	0	0	02 OF 07

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

I. PLANT CONDITIONS

Unit 2 was in Mode 5 in a forced outage.

II. DESCRIPTION OF EVENT

A. Event

On March 23, 1993, with Unit 2 in Mode 5, Chemistry personnel were preparing to perform the annually-required surveillance instruction (SI) for ice condenser (EHS Code BC) chemistry when it was discovered that the surveillance interval as specified in Technical Specification (TS) 4.6.5.1 had been exceeded. TS 4.6.5.1 requires that the chemical analysis verifying the boron concentration be performed at least once every 12 months. The last performance of this SI was on September 21, 1991. Therefore, it had been approximately 18 months since the last qualified sampling periodical surveillance had been performed.

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

None.

C. Dates and Approximate Times of Major Occurrences

March 17, 1992 Operations requested the Chemistry section to prepare to sample the ice for boron concentration from bins in the auxiliary building in anticipation of replenishing the Unit 2 ice condenser baskets. This is a non-TS surveillance.

The Chemistry section requested the Technical Information Center (TIC) to prepare a Unit 2 special performance ice-making SI. This was an incorrect description of the SI package. Chemistry was actually going to perform a non-TS ice-bin sampling SI to be used for determining the boron concentration of the ice before it is put in the Unit 2 ice condenser baskets.

The TIC gave Chemistry personnel the Unit 2 TS special performance ice basket sampling SI. The SI package cover sheet and the SI tracking system were annotated to indicate that the package was a Unit 2 TS SI package. Also, the cover sheet of the SI was erroneously stamped "Special Performance-Ice Making."

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Sequoyah Nuclear Plant, Unit 2		[ SEQUENTIAL ] [ REVISION ]	
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

March 18, 1992 Chemistry personnel recognized that the SI package did not contain all the necessary data sheets to perform the ice bin sampling activity. Chemistry obtained the needed non-TS SI data sheets without informing TIC personnel that the SI package was incorrect. Consequently, the TS annotation of the package was not changed. Chemistry was now prepared to perform a non-TS SI with a TS designated SI package. It should be noted that the non-TS SI is not scheduled because it is used for both Units 1 and 2 when ice is required.

March 18, 1992 Sampling and analysis of ice from the ice-making bins in the common unit equipment began.

April 20, 1992 Sampling and analysis ended.

May 2, 1992 The Chemistry shift supervisor reviewed the completed SI package for technical adequacy and acceptance criteria. A deficiency notice (DN) documenting a discrepancy concerning ice with a high boron concentration was noted.

May 3, 1992 The SI package was given to the primary chemist for independent review.

May 2-7, 1992 A decision was reached that because of the DN, certain ice baskets should be sampled where ice with a high boron concentration may have been sprayed into the baskets from the ice bins. Since the ice was in the ice condenser basket, this would require the performance of the Unit 2 ice basket sampling TS SI. The Chemistry shift supervisor then marked the reschedule block on the original SI package "YES", believing that this would initiate the performance of the special Unit 2 ice basket sampling SI.

May 8, 1992 Work Control SI status personnel keyed in a complete performance code for the SI package to be used for rescheduling. This was based on the YES block of the rescheduling question being checked in conjunction with the package being incorrectly annotated as a TS SI. This rescheduled the next Unit 2 TS SI to be run in 12 months, i.e., March 1993.

August 29, 1992 This was the actual due date for the ice condenser basket-sampling TS SI.

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Sequoyah Nuclear Plant, Unit 2		<div> <div>SEQUENTIAL</div> <div>REVISION</div> </div>	<div> <div></div> <div></div> </div>
	<div> <div>YEAR</div> <div>NUMBER</div> </div>	<div> <div>NUMBER</div> <div>NUMBER</div> </div>	<div> <div></div> <div></div> </div>
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

March 23, 1993 The fact that the surveillance interval was exceeded was recognized during the review of previous performance packages as required by the Chemistry sampling instruction.

Chemistry management and Operations were notified of the missed ice condenser surveillance.

March 24, 1993 The ice condenser baskets were sampled and the ice boron concentration was analyzed.

March 25, 1993 The SI performance was accepted.

D. Other Systems or Secondary Function Affected

None.

E. Method of Discovery

Part of the acceptance criteria of the SI basket-sampling acceptance criteria is to review the previous three performances of the surveillance. The missed surveillance was discovered by Chemistry personnel when they noticed that the last performance was a special performance on March 18, 1992, which did not qualify as a complete periodic surveillance.

F. Operator Action

Upon discovery of the missed SI, the shift operations supervisor (SOS) was notified. The SOS reviewed the SI packages and determined that operability was not affected in accordance with Limiting Condition for Operation (LCO) 3.6.5.1 because the unit was in Mode 5, i.e., LCO 3.6.5.1 applicability is only for Modes 1, 2, 3, and 4.

G. Safety System Responses

Not applicable - no safety system responses were required.

III. CAUSE OF EVENT

A. Immediate Cause

The immediate cause of this event was the failure to perform a TS surveillance periodic test of the boron concentration of the ice because of a scheduling error.

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

B. Root Cause

The root cause of this event was a lack of knowledge and procedural guidance. The test director that requested the SI package was not familiar with the SI processes, i.e., TS packages versus non-TS packages, and therefore did not realize that the SI package should have been taken back to the TIC for verification of the correct SI data sheets when it was determined that additional data sheets were needed. This resulted in the original SI package not being correctly annotated and tracked as a non-TS SI. Also, the SI reviewer was not knowledgeable of the rescheduling process and what constituted a complete performance for rescheduling an SI. This resulted in the reschedule block being incorrectly marked YES.

Additionally, the surveillance test program procedure is not clear on the meaning of the rescheduling blocks that are used by SI scheduling personnel to track and schedule SIs. Neither the procedure for conduct of testing nor the procedure governing the surveillance test program adequately explains the scheduling process and what constitutes complete performance of a test for rescheduling. In general, personnel revealed that there is a lack of understanding of the requirements of the surveillance test program.

C. Contributing Causes

A contributing cause to this event was ineffective communication between Chemistry personnel and TIC personnel.

IV. ANALYSIS OF EVENT

The ice condenser boron concentration is maintained at 1,800 parts per million (ppm) to ensure that the ice contribution to the sump inventory is sufficiently borated to maintain a total inventory of borated water, which satisfies postaccident safety analysis requirements. A review of the ice added to the baskets confirms that the ice added to the ice condenser bays contains, as a minimum, 1,900 ppm boron. Once the ice is loaded into the ice condenser bays, there is no credible mechanism for loss of a significant quantity of boron from the bays between outages. Subsequent sampling from the ice baskets and analysis confirmed that the TS acceptable concentration of greater than 1,800 ppm was maintained. Based on this information, it is determined that Sequoyah was not operating outside of its design basis as a result of the sampling and the analysis frequency requirement being exceeded. Therefore, it has been determined that this event did not have an adverse effect on the health and safety of plant personnel or the public.

## SEE EVENT REPORT (LER)

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## V. CORRECTIVE ACTIONS

A. Immediate Corrective Action

The immediate corrective action was to perform the periodic SI to verify that the Unit 2 ice condenser bays contained acceptable levels of boron concentration in the ice.

B. Corrective Actions to Prevent Recurrence

Since the occurrence of this event in March 1992, the Chemistry section has implemented the use of a designated individual to be the section's SI coordinator. In this role, this individual reviews all Chemistry SI packages to ensure that the package, including the tracking cover sheet, is correctly completed.

The procedure governing the surveillance test program (Site Standard Practice [SSP] 8.2, "Surveillance Test Program") will be revised to clearly delineate the test director's role and the SI reviewer's responsibilities concerning the completion of the data sheets for verification of SI performances.

Key topics, i.e., the effective communication, lack of knowledge and procedural guidance, of this event will be incorporated into a training letter to the test directors and SI coordinators. The letter will clearly delineate the test director's and SI reviewer's responsibilities concerning the completion of the data sheets for verification of SI performances with respect to the scheduling of future performances.

The Site Quality organization will conduct an SI assessment. In this assessment, a representative sampling of the SIs that were used to reschedule TS surveillances from special performance packages will be reviewed to verify that rescheduling has been correctly performed. Any adverse finding will be appropriately dispositioned.

## VI. ADDITIONAL INFORMATION

A. Failed Components

None.

B. Previous Similar Events

A search of the NER and LER databases was conducted to identify any previous or similar event with corrective actions that could have prevented this event. Seven items were identified in the LER database that were similar in nature (50-327/92001, 50-328/92006, 50-327/90007, 50-327/90027, 50-328/89010, 50-327/89027, and 50-327/89010).



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One event (LER 50-327/89010) had corrective actions that should have prevented this event but were not broad enough. In this previous event, the scheduled performance date of a periodic surveillance had been based on an incomplete package performed on November 10, 1987. The November package had been incorrectly designated as a basis for scheduling the next performance of the SI and led to TS components not being tested within the required frequency. The special performance package was incorrectly designated as a basis for scheduling the next performance of the SI. The SI cover sheets, during that time period, were stamped with a caption that contained two questions: (1) Was this SI performance a complete performance? and (2) Is this performance date to be used as a base for scheduling the next performance of this SI? For the November special performance, the first question was correctly checked NO. The second question was incorrectly marked YES.

The root cause of the LER 50-327/89010 event was an inadequate procedure coupled with a personnel error. The corrective action included counseling the personnel and revising the scheduling procedure. The procedure revision improved the process, but the corrective action did not go far enough. The corrective action should have included specific training of test directors in the process of correctly completing the paperwork to ensure that completed tests are correctly designated as such and that inadequate or incomplete tests are also properly noted. The lack of specific training and unclear directions concerning completion of the SI documentation increased the potential for a failure of the process. The previous corrective action was not adequate to prevent recurrence without training and clear directions.

## VII. COMMITMENTS

1. The procedure governing the surveillance test program (SSP-6.2) will be revised to clearly delineate the test director's role and the SI reviewer's responsibilities concerning the completion of the data sheets for verification of SI performance. This will be accomplished by July 7, 1993.
2. Key topics, i.e., ineffective communication, lack of knowledge and procedural guidance, of this event will be incorporated into a training letter to test directors and SI coordinators. The letter will clearly delineate the test director's and SI reviewer's responsibilities concerning the completion of the data sheets for verification of SI performances with respect to the scheduling of future performances. This will be accomplished by May 7, 1993.
3. The Site Quality organization will conduct an SI assessment by reviewing a sampling of SIs that were used to reschedule TS surveillances from special performance packages to verify that rescheduling has been correctly performed. This will be accomplished by June 1, 1993. Any adverse finding will be appropriately dispositioned.