

CATEGORY 10

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9910080129 DOC.DATE: 99/09/30 NOTARIZED: NO DOCKET #
FACIL:50-296 Browns Ferry Nuclear Power Station, Unit 3, Tennessee 05000296
AUTH.NAME : AUTHOR AFFILIATION
ROGERS,A.T. Tennessee Valley Authority
HERRON,J.T. Tennessee Valley Authority
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 99-005-00:on 990901,SR for standby liquid control sampling was not met.Caused by deficient procedure for chemical addition to standby liquid control.Revised procedure.With 990930 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 8
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

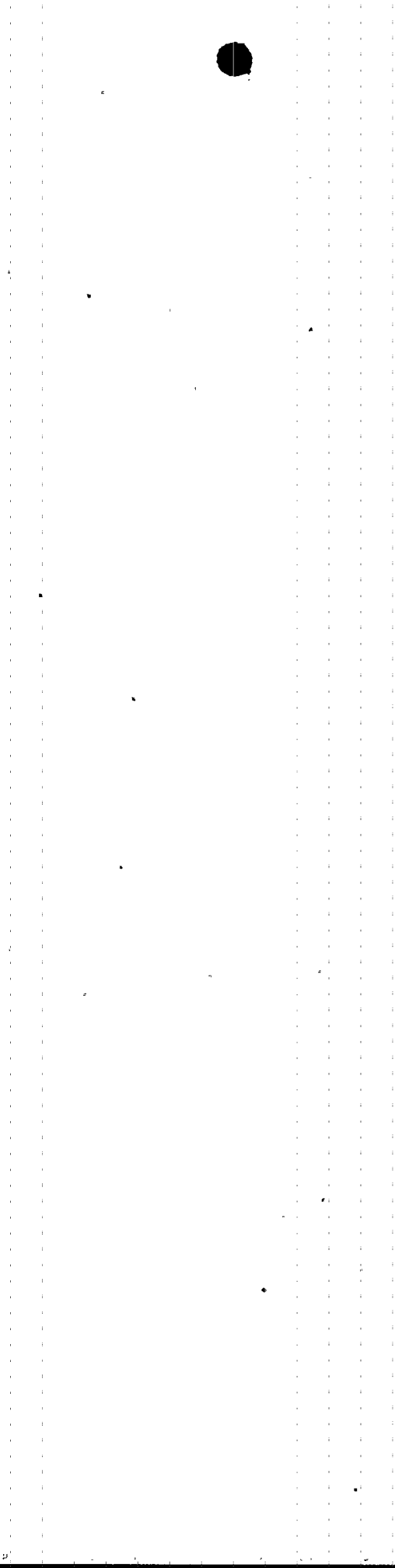
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Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

John T. Herron
Interim Vice President, Browns Ferry Nuclear Plant

September 30, 1999

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

10 CFR 50.73

Dear Sir:

BROWNS FERRY NUCLEAR PLANT (BFN) - UNIT 3 - DOCKET NO. 50-296 -
FACILITY OPERATING LICENSE DPR-68 - LICENSEE EVENT REPORT (LER)
50-296/1999005

The enclosed report provides details concerning an event where
a Technical Specifications surveillance requirement was not
met.

This condition is reportable in accordance with 10 CFR 50.73
(a) (2) (i) (B) as a condition prohibited by the plant's
technical specifications.

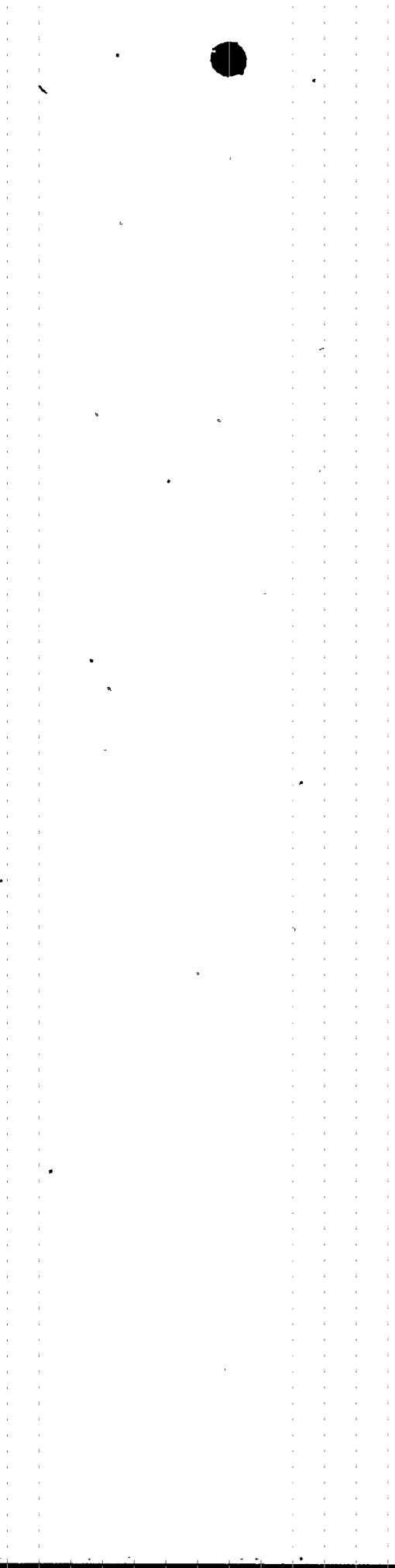
Sincerely,


John T. Herron

cc: See page 2

9910080129 990930
PDR ADOCK 05000296
S PDR

IE22/1



U.S. Nuclear Regulatory Commission
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Enclosure

cc (Enclosure):

Mr. William O. Long, Senior Project Manager
U.S. Nuclear Regulatory Commission
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Mr. Paul E. Frederickson, Branch Chief
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NRC Resident Inspector
Browns Ferry Nuclear Plant
10833 Shaw Road
Athens, Alabama 35611



LICENSEE EVENT REPORT (LER)

See reverse for required number of digits/characters for each block)

FACILITY NAME (1) Browns Ferry Nuclear Plant Unit 3	DOCKET NUMBER (2) 05000296	PAGE (3) 1 of 6
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TITLE (4)
Surveillance Requirement For Standby Liquid Control Sampling Was Not Met

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER				FACILITY NAME	DOCKET NUMBER
09	01	99	1999	005	000	9	30	99	NA	NA

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
POWER LEVEL (10) 100	20.2201(b)	20.2203(a)(2)(v)	X	50.73(a)(2)(i)(B)	50.73(a)(2)(viii)					
	20.2203(a)(1)	20.2203(a)(3)(i)		50.73(a)(2)(ii)	50.73(a)(2)(x)					
	20.2203(a)(2)(i)	20.2203(a)(3)(ii)		50.73(a)(2)(iii)	73.71					
	20.2203(a)(2)(ii)	20.2203(a)(4)		50.73(a)(2)(iv)	OTHER					
	20.2203(a)(2)(iii)	50.36(c)(1)		50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A					
	20.2203(a)(2)(iv)	50.36(c)(2)		50.73(a)(2)(vii)						

LICENSEE CONTACT FOR THIS LER (12)

NAME Anthony T. Rogers, Senior Licensing Project Manager	TELEPHONE NUMBER (include Area Code) (256) 729-2977
--	---

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
NA									

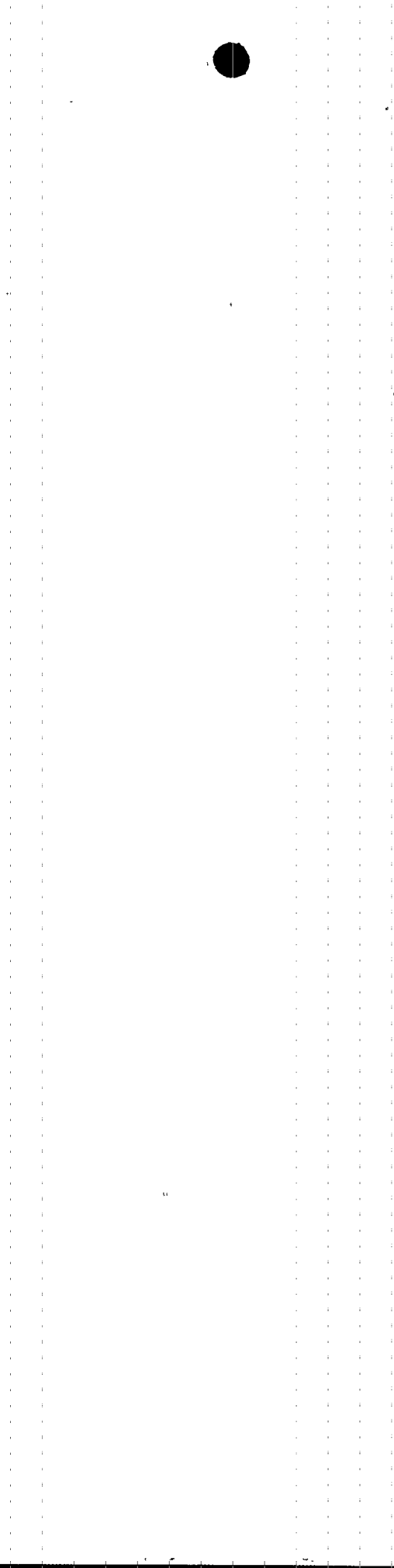
SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On September 1, 1999, plant personnel discovered that Surveillance Requirement (SR) 3-SR-3.1.7.9 had not been performed within the required 24-hour period following a chemical addition made to the Standby Liquid Control (SLC) tank on August 9, 1999. The SR requires that the sodium pentaborate enrichment is within the established limits after addition of boron to the SLC tank in order to ensure the proper boron atom percentage is being used. The sodium pentaborate enrichment must be calculated within 24 hours and verified by analysis within 30 days. Upon discovery of the missed surveillance, the required surveillance was initiated and the sample was shipped to the contract lab to verify the analysis. The analysis verified that the established limits were being met. The root cause of the event was a deficient procedure for chemical addition to the SLC tank. The procedure will be revised to require the conditional surveillance. There were no actual or potential safety consequences as a result of this event nor did this event adversely affect the safety of plant personnel or the public.

This condition is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications.



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

I. PLANT CONDITION(S)

At the time of the discovery of this condition, Unit 2 and Unit 3 were operating at 100 percent power, and Unit 1 was shutdown and defueled.

II. DESCRIPTION OF EVENT

A. Event:

On September 1, 1999, plant personnel discovered that Surveillance Requirement (SR) 3-SR-3.1.7.9 had not been performed within the required 24-hour period following a chemical addition made to the Standby Liquid Control (SLC) tank on August 9, 1999. The SR requires that the sodium pentaborate enrichment is within the established limits after addition of boron to the SLC tank in order to ensure the proper boron atom percentage is being used. The sodium pentaborate enrichment must be calculated within 24 hours and verified by analysis within 30 days. Upon discovery of the missed surveillance, the required surveillance was initiated and the sample was shipped to the contract lab to verify the analysis. The analysis verified that the established limits were being met. There were no actual or potential safety consequences as a result of this event nor did this event adversely affect the safety of plant personnel or the public.

Upon discovery of the failure to meet the requirements of 3-SR-3.1.7.9, a 24-hour TS LCO was entered until a valid sample was obtained.

This condition is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications (TS).

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

None.

C. Dates and Approximate Times of Major Occurrences:

August 9, 1999 ~1300 hours CST	Chemical addition completed on Unit 3 SLC tank.
August 31, 1999 ~1400 hours CST	Cognizant chemist realized 3-SR-3.1.7.9, SLC System Boron-10 Enrichment Calculation and Verification, may have not been processed and initiated verification of procedure status.
September 1, 1999 1230 hours CST	Cognizant chemist notified Chemistry management that 3-SR-3.1.7.9 had not been performed.
September 1, 1999 1352 hours CST	3-SR-3.1.7.9 commenced in order to meet the 30-day requirement of the SR.
September 1, 1999 ~1600 hours CST	Chemistry management determined that the 24-hour verification had not been performed.



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C. Dates and Approximate Times of Major Occurrences (continued):

- | | |
|----------------------------------|--|
| September 1, 1999 1646 hours CST | Chemistry management notified Operations that since 3-SR-3.1.7.9 had not been performed, the 24-hour verification had not been completed. Operations entered SR 3.0.3 to complete the required surveillance within 24 hours effective at 1230 hours. |
| September 1, 1999 1715 hours CST | The 24-hour verification of SPB enrichment completed satisfactorily and SR 3.0.3 exited. |
| September 2, 1999 | 3-SR-3.1.7.9 completed satisfactorily following verification of the SPB enrichment from the laboratory. |

D. Other Systems or Secondary Functions Affected

None.

E. Method of Discovery

These conditions were discovered by the cognizant chemist during periodic review of surveillance procedures.

F. Operator Actions

Upon discovery of this condition, a 24-hour LCO was entered until the requirements of the SR were met.

G. Safety System Responses

None.

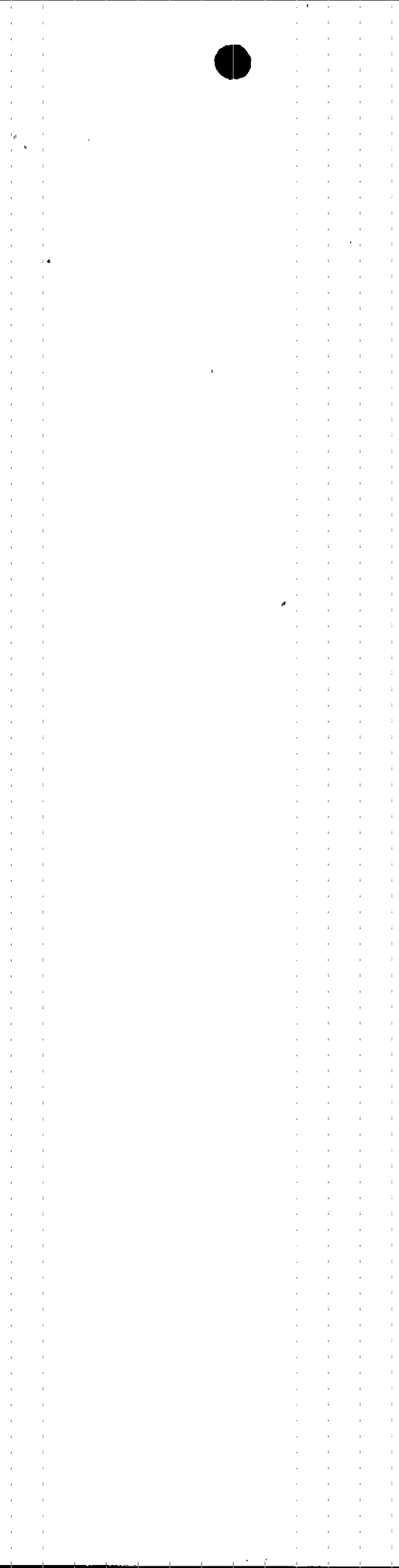
III. CAUSE OF THE EVENT

A. Immediate Cause

The requirements of 3-SR-3.1.7.9 to calculate the SPB enrichment had not been met.

B. Root Cause

The root cause of this event was a deficient procedure which was being used to make chemical additions to the SLC tank.



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IV. ANALYSIS OF THE EVENT

Trending analysis of Unit 3 SLC surveillances had indicated that the weight percent concentration of Boron-10 had decreased over a period of time and was approaching the lower administrative limit. After discussions between chemistry management and the system cognizant chemist a decision was made to make an addition to the Unit 3 SLC tank to increase the percent weight concentration. 3-TI-18 would be the controlling document for the addition and was added July 14, 1999, to the five week out work schedule. Since the routine monthly compliance SLC surveillances were scheduled for August 9, 1999, 3-TI-18 was tied to the 3-SR-3.1.7.3 performance. On September 1, 1999, the cognizant chemist, after reviewing Unit 3 SLC addition data, discovered that Chemistry had failed to perform 3-SR-3.1.7.9 after the August 9, 1999 addition to the U-3 SLC tank. 3-SR-3.1.7.9 requirements state, "verify sodium pentaborate enrichment is within the limits established by 3-SR-3.1.7.5 by calculating the Boron-10 enrichment within 24 hours and verifying by analysis within 30 days", after an addition to the SLC tank. Upon further review by Chemistry management, it was determined that the 24-hour requirement had not met, and SR 3.0.3 was entered. The required samples were obtained and shipped to the contract lab for verification. The lab analysis verified that the results were acceptable and 3-SR-3.1.7.9 was completed satisfactorily.

The controlling procedure, 3-TI-18, provides adequate instruction for making changes to the SLC contents. However the procedure failed to clearly require performance of SR 3.1.7.9 and had no requirements to verify its completion within 24 hours.

IV. ASSESSMENT OF THE SAFETY CONSEQUENCES:

The SLC System is designed to provide the capability of bringing the reactor, at any time in a fuel cycle, from full power and minimum control rod inventory (which is at the peak of the xenon transient) to a subcritical condition with the reactor in the most reactive, xenon free state without taking credit for control rod movement. The SLC System satisfies the requirements of 10 CFR 50.62 on anticipated transient without scram. The SLC System consists of a boron solution storage tank, two positive displacement pumps in parallel and two explosive valves in parallel for redundancy, and associated piping and valves used to transfer borated water from the storage tank to the reactor pressure vessel. The borated solution is discharged near the bottom of the core shroud, where it then mixes with the cooling water rising through the core. The SLC System is manually initiated from the main control room, as directed by the emergency operating instructions, if the operator believes the reactor cannot be shut down, or kept shut down, with the control rods. The SLC System is used in the event that enough control rods cannot be inserted to accomplish shutdown and cooldown in the normal manner. The SLC System injects borated water into the reactor core to add negative reactivity to compensate for all of the various reactivity effects that could occur during plant operations. To meet this objective, it is necessary to inject a quantity of boron, which produces a concentration of 660 ppm of natural boron, in the reactor coolant at 70°F. To allow for imperfect mixing, leakage and the volume in other piping connected to the reactor system, an amount of boron equal to 25% of the amount cited above is added. This volume versus concentration limit and the temperature versus concentration limits are calculated such that the required concentration is achieved accounting for dilution in the RPV with normal water level and including the water volume in the entire residual heat removal shutdown cooling piping and in the recirculation loop piping.



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IV. ASSESSMENT OF THE SAFETY CONSEQUENCES (continued):

Upon discovery of the missed SR, a sample was obtained and verified to meet the system requirements and it can be concluded that at no time was the system ever outside the required limits, nor was the system required for service. Therefore, there were no actual or potential safety consequences as a result of this event. For the reasons stated above, this event did not adversely affect the safety of plant personnel or the public.

VI. CORRECTIVE ACTIONS

A. Immediate Corrective Actions

Operations entered a 24-hour TS LCO in accordance with SR 3.0.3 for the affected surveillance requirements.

B. Corrective Actions to Prevent Recurrence

The controlling procedure, 3-TI-18, Enriched Sodium Pentaborate (SPB) Solution Preparation Procedure for the Standby Liquid Control (SLC) System, will be revised to ensure the conditional surveillance requirements of SR 3.1.7.9 will be met.¹

The affected surveillance procedures will be revised to ensure the cognizant reviews are completed prior to expiration of the surveillance interval.¹

Chemistry personnel were briefed on this event and the significance of Technical Specification compliance.

VII. ADDITIONAL INFORMATION

A. Failed Components

None.

B. Previous LERs on Similar Events

LER 260/97004 documented a TS surveillance which was missed. The root cause was determined to be ineffective control of outage schedules. Therefore, the corrective actions for that event would not have prevented this missed surveillance requirement.

¹ TVA does not consider this corrective action a regulatory commitment. The completion of this item will be tracked in TVA's Corrective Action Program.



The table on this page is a ledger with a central column for descriptions and two columns on either side for numerical entries. The table has a header row with labels, followed by several rows of data. The numerical columns contain values such as 100.00, 200.00, 300.00, and so on, with some entries being blank. The descriptions in the central column are mostly blank, with some faint markings that are difficult to read.

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B. Previous LERs on Similar Events (continued):

LER 259/1999002 documented an inadequate surveillance instruction for calibration of Standby Gas Treatment Train B relative humidity control heater flow switches due to technical inaccuracies in the surveillance instruction. The corrective actions for this condition would not have prevented this missed surveillance requirement.

LER 260/97002 documented an inadequate surveillance procedure discovered during a review associated with Generic Letter 96-01. The corrective actions for this condition would not have prevented this missed surveillance requirement.

LER 260/296/1998004 documented improper implementation of SR requirements for drywell leakage and Average Power Range Monitors voter checks due to misinterpretation of the requirements and procedural inadequacies. The corrective actions for this condition would not have prevented this missed surveillance requirement.

LER 260/1999002 documented failure to perform the required 24-hour check of all control rods inserted due to misinterpretation of the SR resulting from an inadequate procedure. The corrective actions for this condition would not have prevented this missed surveillance requirement.

LER 260/99007 documented failure to obtain required oxygen concentration readings for the suppression chamber due to failure of the operators to adequately communicate and track the status of the inoperable oxygen sampling system. The corrective actions for this condition would not have prevented this missed surveillance requirement.

No other LERs were identified where a SR was not met. This event was the result of a deficient procedure which should have required performance of a conditional SR. Therefore, it is unlikely any of the past corrective actions would have prevented this event.

C. Additional Information

None.

D. Safety System Functional Failure:

This event did not result in a safety system functional failure in accordance with NEI 99-02.

VIII. COMMITMENTS

None.



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