

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Sequoyah, Unit 1		DOCKET NUMBER (2) 0 5 0 0 0 3 2 7 1	PAGE (3) 1 OF 0 4
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Event Title: Relay Deenergized When Bumped During Modification Work Resulting In An Auxiliary Building Isolation Train 'B' Actuation

EVENT DATE (6)			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 (5)
09	29	88	88	034	00	10	14	88	Sequoyah, Unit 2	0 5 0 0 0 3 2 8
										0 5 0 0 0

OPERATING MODE (8) 4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50. (Check one or more of the following) (11)									
POWER LEVEL (10) 000	20.402(a)	20.405(a)	60.73(a)(2)(i)	73.71(a)						
	20.405(a)(1)(i)	60.38(a)(1)	60.73(a)(2)(iv)	73.71(a)						
	20.405(a)(1)(ii)	60.38(a)(2)	60.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	20.405(a)(1)(iii)	60.73(a)(2)(ii)	60.73(a)(2)(viii)(A)							
	20.405(a)(1)(iv)	60.73(a)(2)(ix)	60.73(a)(2)(viii)(B)							
	20.405(a)(1)(v)	60.73(a)(2)(iii)	60.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME T. K. Phifer, Plant Reporting Section	AREA CODE 615	870-7585	

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	1	23	188

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

At 1359 EDT, on September 29, 1988, with unit 1 in mode 4 (0 percent power, 355 psig, and 246 degrees F) and unit 2 in mode 1 (65 percent power, 2235 psig, and 565 degrees F), a train 'B' Auxiliary Building Isolation (ABI) (RIIS code VF) occurred. The Auxiliary Building (AB) is a common building for units 1 and 2 and is the secondary containment enclosure for both units.

Before this event, modifications personnel were performing work inside O-M-12 under Work Plan (WP)-11266 R1. WP 11266 R1 was generated to implement a design change which installs a seal-in circuit for an ABI caused by a high radiation condition in the AB. The cause of this event has been investigated, and it has been concluded that while performing the work inside O-M-12, an electrician inadvertently bumped a time delay relay (TDR) for O-RM-90-103. O-M-90-103 is the train B spent fuel pool area radiation monitor. Two recommendations from the investigation of this event were made to prevent recurrence of this type of event. One was to require the appropriate monitors to be blocked when work is performed inside a main control room panel in O-M-12 and the second was to install a protective cover for appropriate TDRs. TVA will evaluate both options and revise this report by December 31, 1988 to provide the course of action to be taken.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
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TEXT (If more space is required, use additional NRC Form 388A's.)

DESCRIPTION OF EVENT

At 1359 EDT, on September 29, 1988, with unit 1 in mode 4 (0 percent power, 355 psig, and 246 degrees F) and unit 2 in mode 1 (65 percent power, 2235 psig, and 565 degrees F), a train 'B' Auxiliary Building Isolation (ABI) (EIIS code VF) occurred. The Auxiliary Building (AB) is a column building for units 1 and 2 and is the secondary containment enclosure for both units.

Before this event, modifications personnel were performing work inside O-M-12 under Work Plan (WP)-11266 R1. O-M-12, which is a common panel for units 1 and 2, is located between each units main control room (MCR) boards and primarily contains radiation monitoring instrumentation (EIIS code IL). WP-11266 R1 was generated to implement a design change which installs a seal-in circuit for an ABI caused by a high radiation condition in the AB. This circuit seals in the high radiation ABI signal requiring a manual reset to remove the signal.

A high radiation time delay relay (TDR) for radiation monitor (RM) O-RM-90-103 is also housed inside O-M-12. This TDR is a plug-in type which deenergizes to trip and is located in the vicinity of the work being performed under the WR identified above. O-RM-90-103 is the ABI train 'B' RM for the spent fuel pool area which is common to both units and located within the AB.

A 1359 EDT, on September 29, 1988, the O-RM-90-103 high radiation annunciator alarmed and the unit 1 operations personnel observed that the radiation analyzer for O-RM-90-103 did not indicate a high radiation level. Operations personnel proceeded to identify if any equipment had been affected based on the alarm. The operators observed that a train 'B' ABI actuation had occurred and immediately, initiated an investigation in accordance with SQA-186, "Root Cause Assessment for Adverse Actions/Conditions". In addition, the operators were aware of the work being performed in O-M-12 and immediately requested that the work be stopped until further notice.

CAUSE OF EVENT

The cause of this event has been investigated including the possible causes of an ABI train 'B' actuation, and it has been concluded that while performing the work inside O-M-12, an electrician inadvertently bumped the time delay relay (TDR) for O-RM-90-103.

The normal initiating sources which will actuate an ABI are as follows:

1. Manual initiation from either unit by handswitches HS-30-101A and -101B on panel M-6 (requires both handswitches from either unit to initiate both trains of ABI).
2. Unit 1 or 2 containment phase A isolation signal (both trains A and B).

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

3. Outside air inlet temperature to AB exceeding 115 degrees F (TS-30-103 and -103A for unit 1 or TS-30-104 and 104a for unit 2). This requires actuation of both temperature switches from either unit to get both trains of ABI.
4. High radiation in the AB general exhaust vent sensed by O-RM-90-101A, -101B, or 101C. (Any one channel will initiate both trains of ABI).
5. High radiation in the spent fuel pool area sensed by O-RM-90-102 (Train A) and O-RM-90-103 (Train B). Note: These monitors do not start the various AB space cooler units.

Immediately after the ABI actuation, the radiation monitor (RM) recorder chart (RR-90-102) for the spent fuel pool RMs (RM-90-102 and -103) was reviewed and verified that no high radiation signal was received from these two monitors. Also, the (RM) recorder (1-RR-90-101) chart was reviewed to confirm that a high radiation condition did not exist in the AB general exhaust vent (RM-90-101A, -101B and -101C). This confirmed that no actual high radiation condition existed. Also, the operator did receive a high radiation alarm, however, the radiation analyzer for O-RM-90-103 did not indicate that the high radiation setpoint had been exceeded by the nonpresence of a red light. This combination of indications can be generated by the circuitry associated with the TDR.

Interviews with the personnel performing the work subsequent to the event supported the conclusion that the TDR was bumped resulting in the ABI train 'B' actuation.

ANALYSIS OF EVENT

An ABI is an engineered safety features (ESF) actuation and is reportable pursuant to the criteria established in 10 CFR 50.73, a.2.iv.

Subsequent to the ABI signal, all equipment functioned as designed as the general supply and exhaust fans shut off, the fuel handling area fans shut off, the appropriate dampers operated, and train 'B' of Auxiliary Building gas treatment system started. Since no high radiation levels actually existed, then this unplanned operation of an ESF posed no safety consequence.

CORRECTIVE ACTION

Immediate corrective action taken by the operators subsequent to the ABI was to verify there was not an actual high radiation condition in the spent fuel pool area. Operators then performed SOL-30.5D, "Recovery From Auxiliary Building Isolation", for the restoration of the ventilation system, and an immediate investigation of the event ensued. The investigation was implemented in accordance with SQA-186. The following two items reflect the type of recommendations resulting from the investigation to prevent recurrence of this type of event:

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TEXT (if more space is required, use additional NRC Form 388A's) (17)

1. Require the appropriate monitors to be blocked when work is performed inside a MCR panel housing a TDR.
2. Install a protective cover for TDRs associated with radiation monitors that generate ESF actuations.

TVA will evaluate both options and revise this report by December 31, 1988 to provide the course of action to be taken.

ADDITION INFORMATION

There have been two previous occurrences of ABIs caused by a TDR being bumped SQRO-50-327/84068 and 85023. These events involved modifications personnel and electrical maintenance personnel; respectively.

COMMITMENTS

1. TVA will evaluate both recommendations resulting from the investigation of this event and will revise this report by December 31, 1988 to provide NRC with the course of action to be taken and a schedule for implementation.

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

October 14, 1988

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

Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2 - DOCKET
NOS. 50-327 AND 50-328 - FACILITY OPERATING LICENSE DPR-77 AND -79 -
REPORTABLE OCCURRENCE REPORT SQRO-50-327/88034 REVISION 0

The enclosed licensee event report provides details concerning an
inadvertent Auxiliary Building isolation which occurred during modification
work inside again control room panel. This event is reported in accordance
with 10 CFR 50.73, paragraph a.2.iv.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


S. J. Smith
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

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