Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381

MAR 2 7 1996

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

Gentlemen:

In the Matter of) Docket No. 50-390
Tennessee Valley Authority)

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - FACILITY OPERATING LICENSE NPF-90 - LICENSEE EVENT REPORT (LER) 50-390/96008

The enclosure provides LER 50-390/96008 concerning a reportable event involving noncompliance with WBN Technical Specification surveillance requirement (SR) 3.7.5.3. This LER is provided in accordance with 10 CFR 50.73 (a)(2)(i).

If you should have any questions, please contact P. L. Pace at (423) 365-1824.

Sincerely,

for D. V. Kehoe
Nuclear Assurance
and Licensing Manager

Enclosure
cc: See page 2

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Enclosure
cc (Enclosure):

NRC Resident Inspector
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Spring City, Tennessee 37381

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ENCLOSURE

NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
WATTS BAR NUCLEAR PLANT - UNIT 1	05000-390	1 OF 5

TITLE (4)

TESTING OF SAFETY-RELATED LOGIC CIRCUITS

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
02	26	96	96	-- 008 --	00	03	27	96	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	4
POWER LEVEL (10)	000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		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	TELEPHONE NUMBER (Include Area Code)
Robert M. Brown, Compliance Licensing Engineer	(423) 365-8195

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 15 single-spaced typewritten lines) (16)

On February 26, 1996, Technical Support personnel discovered a failure to adequately perform WBN Technical Specification surveillance requirement (SR)-3.7.5.3 while performing a technical review of Surveillance Instruction (SI) 1-SI-3-201-A, Revision 1, "Response Time Test - Auxiliary Feedwater (AFW) Pump 1A-A Suction Header Transfer - Train A." SR-3.7.5.3 requires verification on each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. SR-3.7.5.3 was not satisfied because the SI called for placing a jumper wire across a breaker auxiliary relay contact in the valve actuation circuit (pump running interlock). Therefore, this portion of the circuit was not tested. TVA's review found two more surveillance applications where jumper wires or parallel contacts were used to bypass the pump running interlocks for the engineered safety feature (ESF) actuation logic paths. The errors occurred because the procedure writers had misinterpreted the requirement for including the actuation of the specific contact interlocks in the test lineup. Immediate corrective measures consisted of performing functional tests to determine if the contact interlocks would have performed their intended safety functions. The tests confirmed that the interlocks were fully capable of operating while Unit 1 was in the applicable modes (1, 2, 3, and 4). Other corrective measures included counseling or training technical procedure writers, and revising applicable procedures to ensure the bypassed interlocks are tested in the future.

I. PLANT CONDITIONS:

Westinghouse - Pressurized Water Reactor

Watts Bar Nuclear Plant Unit 1 was in Mode 4 with the reactor coolant system (RCS) (EIIS; AB) temperature at 230 degrees Fahrenheit, pressure at 320 psig, and a boron concentration of approximately 1253 ppm.

II. DESCRIPTION OF EVENT

A. Event

On February 26, 1996, Technical Support personnel discovered a failure to adequately perform WBN Technical Specification SR-3.7.5.3 while performing a technical review of 1-SI-3-201-A, Revision 1, "Response Time Test - Auxiliary Feedwater (AFW) Pump 1A-A Suction Header Transfer - Train A." SR-3.7.5.3 requires verification on each AFW (EIIS; BA) automatic valve (EIIS; FCV) that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. SR-3.7.5.3 was not satisfied because the SI called for placing a jumper wire across a breaker auxiliary relay contact in the valve actuation circuit (i.e., the pump running interlock). WBPER960059 was initiated to document the condition in the Corrective Action Program. The Problem Evaluation Report (PER) process confirmed the original finding and found two more applications where jumper wires or parallel contacts were used to make up the pump running interlocks (EIIS; EIL) for the ESF valve logic actuation paths. The three conditions were as follows:

(1) AFW (EIIS; BA) Suction Swap-Over Valves (EIIS; FCV)
Jumper wires were used to simulate the 52STA pump running contact interlocks (EIIS; EIL) for the Motor Driven Auxiliary Feedwater Pumps (MDAFWPs) (EIIS; P) (1-PMP-003-0118-A and -0128-B) in the ESF actuation path for the suction swap-over valves (1-FCV-003-0116A-A, -0116B-A, -0126A-B, and -0126B-B). The 52STA contact interlocks had been verified during preoperational testing; however, the surveillance requirement performance deadline had expired.

(2) Turbine Driven Auxiliary Feedwater Pump (TDAFWP) (EIIS; P) Suction Swap-Over Valves (EIIS; FCV)
Jumper wires were used to simulate the TDAFWP (1-PMP-003-0001A-S) trip and throttle valve (EIIS; FCV) (1-FCV-001-0051-S) opening in the ESF logic actuation path for the suction swap-over valves (1-FCV-003-136A-A, -136B-A, -0179A-B and -0179B-B). The contact interlocks had been verified during preoperational testing; however, the surveillance requirement performance deadline had expired.

(3) Containment Spray (EIIS; BE) Pump (EIIS; P) (CSP) Header Valves (EIIS; FCV)
Parallel testing of contacts were used to simulate the 52STA contact for CSP 1A-A (1-PMP-072-0027-A) and CSP 1B-B (1-PMP-072-0010-B) pump running interlocks (EIIS; EIL) in the ESF actuation logic paths; however, the contacts were functionally verified during preoperational testing and the condition was identified before the surveillance requirement performance deadline had expired.

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

There were no structures, components, or systems inoperable at the start of the event that contributed to the event.

C. **Dates and Approximate Times of Major Occurrences**

The surveillance requirement verification frequency for the MDAFWP 1A-A (EIIS; P) 52STA contact interlock, MDAFWP 1B-B 52STA contact interlock, and the TDAFWP trip and throttle valve contact interlock expired on February 19, 1996.

D. **Other Systems or Secondary Functions Affected**

There were no failures that rendered a train or a safety system inoperable.

E. **Method of Discovery**

Technical Support personnel discovered a failure to adequately perform SR-3.7.5.3 while performing a technical review of 1-SI-3-201-A, Revision 1. WBPER960059 was issued to document the condition in the Corrective Actions Program. The extent of condition review for the PER confirmed the original finding and found two more applications where jumper wires were used.

F. **Operator Actions**

Functional tests were performed on the bypassed interlocks. No problems were found.

G. **Automatic and Manual Safety System Responses**

There were no automatic or manual safety system responses and none were necessary.

III. CAUSE OF EVENT

A. Cause

The cause was determined to be the lack of detailed description of the testing methods. The technical writers and reviewers considered that the procedures satisfied the surveillance requirements. Neither the writers nor the reviewers considered verification of the 52STA finger interlock (EIIS; EIL) was required by the WBN Technical Specification surveillance requirements. In other actuation logic paths, the required equipment interlocks were made up as part of the equipment lineups.

IV. ANALYSIS OF EVENT - ASSESSMENT OF SAFETY CONSEQUENCES

Test verification of the 52STA contacts for the Containment Spray (EIIS; BE) and AFW (EIIS; BA) suction swap-over valves, and the TDAFWP trip and throttle valve contact interlocks were performed with acceptable results. Although the contacts were bypassed in previous surveillance tests, they were determined to be fully capable of operating to perform their intended safety function while Unit 1 was in applicable modes (1, 2, 3, and 4). Accordingly, there were no safety implications to the public related to the event. No other systems or secondary functions were affected by this event.

V. CORRECTIVE ACTIONS

A. Immediate Corrective Actions

Functional tests were conducted to determine if the contact interlocks (EIIS; EIL) would perform their intended safety functions. The tests confirmed that the interlocks were fully capable of operating to perform their intended safety function while Unit 1 was in applicable modes (1, 2, 3, and 4).

B. Corrective Actions to Prevent Recurrence

1. Review of applicable SIs determined only three ESF logic actuation paths had contacts not fully tested. These are listed in Section II.A.

2. Appropriate Technical Support and Maintenance procedure writers and technical reviewers have been trained or counseled on the subject event.

3. 1-SI-99-300-A, "Engineered Safety Features Actuation System Slave Relay Go Test Train A," and 1-SI-99-300-B, "Engineered Safety Features Actuation System Slave Relay Go Test Train B," have been revised to capture testing of the 52STA contacts for the MDAFWP 1A-A and 1B-B, CSP 1A-A and 1B-B, and the pump running interlock for the TDAFWP.

VI. ADDITIONAL INFORMATION

A. Failed Components

1. Safety Train Inoperability

There were no failures that rendered a train or a safety system inoperable.

2. Component/System Failure Information

a. Method of Discovery of Each Component or System Failure:

There were no component failures involved.

b. Failure Mode, Mechanism, and Effect of Each Failed Component:

There were no component failures involved.

c. Root Cause of Failure:

There were no component failures involved.

d. For Failed Components With Multiple Functions, List of Systems or Secondary Functions Affected:

There were no component failures involved.

e. Manufacturer and Model Number of Each Failed Component:

There were no component failures involved.

B. Previous Similar Events

There were no previous similar events.

VII. COMMITMENTS

All corrective actions are complete.