

LICENSEE EVENT REPORT (LER)

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

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 (1-B 133), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) North Anna Power Station, Units 1 and 2		DOCKET NUMBER (2) 05000338	PAGE (3) 1 OF 3
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TITLE (4)
INCOMPLETE SURVEILLANCE ON REACTOR PROTECTION P8 LOGIC CIRCUITRY

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	DOCUMENT NUMBER
1	8	98	98	001	00	02	03	98	North Anna, Unit 2	05000339
									FACILITY NAME	DOCUMENT NUMBER
										05000

OPERATING MODE (9) 1	POWER LEVEL (10) 100%	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	
20.2203(a)(2)(iv)			50.36(c)(2)					50.73(a)(2)(vii)		or in NRC Form 366A			

LICENSEE CONTACT FOR THIS LER (12)									
NAME W. R. Matthews, Station Manager						TELEPHONE NUMBER (Include Area Code) (540) 894-2101			

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)					EXPECTED SUBMISSION DATE	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 January 8, 1998, with Units 1 and 2 at 100 percent power, Mode 1, it was determined that a potential to miss interlock logic surveillance testing during previous mid-cycle shutdowns existed. Notification was received from Westinghouse concerning a Solid State Protection System interlock circuit that is not fully tested during semi-automatic testing of the system. The reactor trip system interlock, P8, blocks the reactor trip function for low flow in a single reactor coolant loop below 28 percent power. It is likely that the surveillance was not performed during mid-cycle shutdowns since no reactor coolant pumps would have been shutdown. This is reportable pursuant to 10 CFR 50.73 (a)(2)(i)(B), for a condition prohibited by the Technical Specifications.

The cause of the incomplete surveillance is attributed to inadequate test design supplied by the vendor and the assumption that all functions, above and below P8 setpoint, were fully tested during the semi-automatic test performed on each train of SSPS every other 31 days.

This condition posed no significant safety implications since it was determined the logic circuits could perform their design function, and did not affect the operability of the system. Therefore, the health and safety of the public were not affected at any time during this condition.

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TEXT CONTINUATION

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		YEAR 98	SEQUENTIAL NUMBER 001	REVISION NUMBER 00	

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

1.0 Description of the Event

Westinghouse Technical Bulletin, No. NSD-TB-97-07, identified a condition applicable to the North Anna Power Station regarding incomplete Solid State Protection System (SSPS) (EISS System - JG) interlock testing. A portion of the P8 interlock logic circuitry (EISS Component IEL) that prevents a reactor trip caused by low flow in a single reactor coolant loop (EISS System AB) with 3 of 4 power range levels below 28 percent was not tested. Technical Specification (TS) requires the logic for reactor trip system interlocks be demonstrated operable prior to each reactor startup unless performed during the preceding 92 days. If the reactor trip breakers (RTB) (EISS System JD, Component BKR) remain closed below the P8 setpoint with fewer than three reactor coolant pumps (RCP) (EISS System AB, Component P) running and SSPS fully operational then the block of the reactor trip due to low RC flow below the P8 setpoint is operable.

Due to a relatively constant startup sequence following refueling outages, it can be logically assumed that this surveillance has been correctly performed following each startup from a refueling outage or extended shutdown to Mode 5. A review of the operator narrative logs, plant computer (EISS System ID, Component CPU) points, and control room alarm printers determined that this portion of the P8 circuitry was verified operable within 92 days prior to the last Unit 1 & 2 reactor startups.

The problem arises with mid-cycle shutdowns, especially shutdowns which do not require cooldown and entry into Mode 5. For these outages, it is likely that the surveillance was not performed since no RCPs would have been shutdown. If these outages occurred more than 92 days from the end of the previous refueling, then this surveillance would have been missed. On August 27, 1996, Unit 1 experienced an automatic reactor trip from 100 percent power. The unit was stabilized and remained in Mode 3 before being returned to power on August 29, 1996. During this time the RCPs were not shutdown and the trip was greater than 92 days from the last refueling outage. As such, the surveillance for the P8 interlock logic that prevents a reactor trip following low flow in a single reactor coolant loop with 3 of 4 power range levels below 28 percent was not tested. Since the test procedures did not contain steps to ensure adequate testing, we believe the surveillance was missed during other mid cycle shutdowns which did not require cooldown and entry into Mode 5.

2.0 Significant Safety Consequences and Implications

This condition posed no significant safety implications since it was determined the logic circuits could perform their design function, and did not affect the operability of the system. Therefore, the health and safety of the public were not affected at any time during this condition.

This incomplete surveillance is reportable pursuant to 10 CFR 50.73 (a)(2)(i)(B) for a condition prohibited by the TS.

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		98	001	00	

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

3.0 Cause of the Event

The cause of the incomplete surveillance is attributed to inadequate test design supplied by the vendor. As a result, the test procedures did not ensure that functions below P8 setpoint were fully tested during the semi-automatic test performed on each train of SSPS.

4.0 Immediate Corrective Actions

Reviewed information from the last startup following refueling for each unit and noted that the surveillance was met and the reactor trip system interlocks were operable.

5.0 Additional Corrective Actions

A review of the SSPS and associated procedures and drawings determined the other interlocks are being fully tested in accordance with TS. Procedure changes were written to the channel functional tests and are ready to be implemented prior to the next reactor startup to ensure the required P8 surveillance is met. In addition, P8 was placed in action to alert the Operators to the requirement for demonstrating the P8 function in question operable prior to the next reactor startup.

6.0 Actions to Prevent Recurrence

The vendor recommendation to ensure adequate testing is being evaluated along with other possible solutions. Corrective actions will be implemented as necessary.

7.0 Similar Events

LER N1-97-009-00 identified an incomplete surveillance on Solid State Protection System circuits for feedwater isolation from P14, S/G Hi Hi Level, and P-10 block of the Source Range Trip due to inadequate test design supplied by the vendor.

8.0 Additional Information

None