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 (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Susquehanna Steam Electric Station - Unit 1	05000387	1 OF 4

TITLE (4)
Feedwater/Main Turbine Trip System Actuation Instrumentation, Inadequate Surveillance Testing

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
									Susquehanna SES - Unit 2	05000388
5	10	98	98	-- 010 --	00	6	9	98	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10)	000	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)
Stephen J. Ellis - Senior Engineer, Licensing	717 / 542-3537

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 May 10, 1998 with Unit 1 in Condition 5 (Refueling) and Unit 2 in Condition 1 (Power Operation), it was determined that for two periods of time in the history of each unit, the requirement to test through and including the actuated device for the Logic System Functional Test (LSFT) of the Reactor Vessel Water Level-High trip function of the main turbine had not been met. The surveillance shortcoming was identified on March 6, 1998, at which time it was determined that adequate alternate testing existed for the current operating cycle for both units. The follow-up review identified these past occurrences. The surveillance, when originally written, did not include this testing, with some evidence that, at that time, the existing test was considered adequate. The most likely cause of the condition reported is the lack of a clear definition of the scope of the LSFTs. The conditions discussed in this report constitute times when the required Technical Specification surveillance testing was not adequately met, and as such, is reportable in accordance with the guidance of NUREG 1022, per 10CFR50.73(a)(2)(i)(B). The untested portion of the main turbine trip logic associated with the Reactor Vessel Water Level-High instruments has functioned when tested or actuated. It is concluded that the subject trip function would have functioned if called upon. Based on this, there was no safety consequence and the safety significance is minimal. The health and safety of the public was not compromised. As a review for surveillance program adequacy, detailed reviews of the logic system testing of three systems were completed with no discrepancies found. A clear definition of the "Logic System" has been developed and incorporated into the appropriate procedure. Other corrective actions include: Plant Operations Review Committee approval of the alternate testing, and the revision and performance of the appropriate surveillance procedures.

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Susquehanna Steam Electric Station - Unit 1	05000 387	98	-- 010 --	00	2 OF 4

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

EVENT DESCRIPTION

On May 10, 1998, with Unit 1 in Condition 5 (Refueling) at 0% power and Unit 2 in Condition 1 (Power Operation) at 100% power, it was determined that on four occasions in the past, two on Unit 1 and two on Unit 2, the required surveillance, per Technical Specification 4.3.9.2, for the 18 month Logic System Functional Test (LSFT) of the Feedwater/Main Turbine trip system actuation instrumentation, had not been completed through, and including, the actuated device (as required by the definition of a LSFT).

On March 6, 1998, during a review associated with the Improved Technical Specifications (ITS) of the implementing procedures for the 18 Month LSFTs of the Main Turbine (EIIS Code: TA) trip channels associated with the Reactor Vessel Water Level-High instrumentation (EIIS Code: JB), it was identified that testing through, and including, the actuating device, was not documented. Adequate "alternate testing" had been performed for the current period for both units and was subsequently approved by the Plant Operations Review Committee (PORC). Since the alternate testing was not part of the normal surveillance, but was an actual turbine trip that actuated the main stop valves (the actuated device) via the appropriate logic path, the potential existed that in the past, the Technical Specification surveillance requirements may not have been met, and a historical review was initiated.

The historical review concluded that, for Unit 1 there were two periods when the surveillance requirement was not met; 11/30/90 to 11/12/92, and 9/30/94 to 2/25/97.

Similarly, for Unit 2, there were two periods when the surveillance requirement was not met; 3/03/89 to 5/28/90, and 4/14/92 to 7/14/96.

CAUSE OF EVENT

The most probable cause for the event was determined to be no clear definition of the scope of the LSFT at the time of initial surveillance program development. At the time of the initial surveillance program/procedure reviews, the understanding of the plant design and the licensing and design bases were not as thorough as today. Thus, the subject actuating device had not been included in the LSFT and had not been tested for the identified time periods.

Improvements in the surveillance testing programs and procedures, since the time of the initial establishment of the surveillance requirement, provide the necessary controls to ensure new, and revisions to existing, surveillance procedures maintain and/or achieve the required scope of testing.

REPORTABILITY/ANALYSIS

The conditions described in this report identify periods in the history of the plant where the required Technical Specification surveillance 4.3.9.2, was not adequately performed. As such, these occurrences have been determined reportable per 10CFR50.73(a)(2)(i)(B), in that the surveillance requirements had not been met for those historical periods of time.

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
	05000	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Susquehanna Steam Electric Station - Unit 1	387	98	-- 010 --	00	3 OF 4

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

The conditions described were identified as a result of a review performed in conjunction with PP&L's ITS effort. The review identified a shortcoming in the existing surveillance procedures associated with the LSFT of the Reactor Vessel Water Level-High trip function. It was further determined that, for the current period on both units, "alternate testing" had been performed to assure the LSFT requirements were satisfied. In this case, the alternate testing takes credit for a turbine trip which energized the required logic to fulfill the surveillance requirements.

The Main Turbine trip logic has operated correctly when called upon for test or to trip the Main Turbine both before, and after, the periods where the surveillance requirements were not met. Based on this, and the highly reliable nature of this D.C. powered circuitry, it is concluded that the subject trip function would have functioned if called upon. There is no documented evidence that the main turbines have ever failed to trip when required with respect to this actuation function. From this, it is concluded that there is no safety consequence to the conditions noted in this report, and the safety significance is minimal. The health and safety of the public was not compromised.

It should be noted that there have been several industry notifications that addressed the adequacy of logic circuit testing, the most recent being Generic Letter 96-01. In our response to the Generic Letter, PP&L stated that we believe that we were in compliance with the Susquehanna S.E.S. Technical Specification with regard to system logic testing. This conclusion was based on having implemented a comprehensive review of applicable surveillances and that the programmatic controls in place were adequate to capture changes made to logic as a result of modifications. It is PP&L's position that this missed surveillance, and those discussed in Licensee Event Report (LER) 50-387/98-004-00 are isolated exceptions.

In accordance with the guidance of NUREG 1022, Revision 1, the submission date for this report was determined to be June 10, 1998.

CORRECTIVE ACTIONS

In response to a similar condition documented on March 13, 1998 in LER 50-387/98-004-00, a number of actions have been taken which are applicable to these events. A clear definition of "Logic System" for Logic System Functional Testing has been developed and added to the appropriate procedures. Also, a vertical slice review of LSFTs for Unit 2 Core Spray, Division I, Unit 1 Automatic Depressurization System, Division II, and Unit 1 Drywell Cooling, Division II, Containment Isolation, have been completed with no discrepancies identified.

The following corrective actions, in addition to those noted above, have been completed:

- The Plant Operations Review Committee (PORC) approved the alternate testing for both Unit 1 and Unit 2.
- The Unit 1 surveillance procedure was revised to incorporate the required testing.

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
	05000	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Susquehanna Steam Electric Station - Unit 1	387	98	-- 010 --	00	4 OF 4

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

- The revised Unit 1 surveillance procedure was performed during the Unit 1 10th Refueling Outage.

The Unit 2 surveillance procedure is scheduled to be revised to incorporate the required testing prior to the expiration of the existing surveillance.

ADDITIONAL INFORMATION

Past Similar Events:	Docket No. 50-387	LER 95-012-00
		LER 97-018-00
		LER 98-004-00
	Docket No. 50-388	LER 93-008-00

Failed Components: None