

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 (1-6-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.

FACILITY NAME (1) NORTH ANNA POWER STATION , UNIT 2		DOCKET NUMBER (2) 05000339	PAGE (3) 1 OF 3
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TITLE (4)
REACTOR TRIP DUE TO LIGHTNING STRIKE

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
09	17	98	98	004	00	10	06	98	FACILITY NAME	05000
									FACILITY NAME	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)	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)	X 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, Site Vice President	TELEPHONE NUMBER (Include Area Code) (540) 894-2101
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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)

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

At 2032 hours on September 17, 1998, with Unit 2 in Mode 1 at 100 percent power, an automatic reactor trip occurred due to an Over-Temperature Delta-T protection actuation. Just prior to and at the time of the trip, a lightning storm was in progress whereby plant personnel noticed a lightning strike inside the protected area in the vicinity of Unit 2. A non-emergency four hour report was made to the NRC at 2305 hours pursuant to 10CFR50.72(b)(2)(ii). This event is reportable pursuant to 10CFR50.73(a)(2)(iv).

The probable cause of the automatic reactor trip was due to the actuation of the Over-Temperature/Delta-T protection circuitry caused by a lightning strike.

No significant safety implications resulted from the reactor trip because the reactor protection safety systems functioned successfully to trip the reactor safely as designed. Therefore, the health and safety of the public were not affected at any time during this event.

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TEXT CONTINUATION**

FACILITY NAME (1) North Anna Power Station, Unit 2	DOCKET 05000339	LER NUMBER (6)			PAGE (3) 2 OF 3
		YEAR 98	SEQUENTIAL NUMBER -- 004 --	REVISION NUMBER 00	

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

1.0 DESCRIPTION OF THE EVENT

On September 17, 1998, Unit 2 was operating at steady state conditions at 100 percent power. All primary system parameters were normal for full power operation with no major surveillances or testing activities in progress.

At 2032 hours on September 17, 1998, North Anna Unit 2 experienced an automatic reactor trip from 100 percent power (Mode 1) due to an Over-Temperature Delta-T protection actuation on the "B" loop. Just prior to and at the time of the trip, a lightning storm was in progress whereby plant personnel noticed a lightning strike inside the protected area in the vicinity of Unit 2. It is believed that the lightning strike caused the actuation of the Delta-T/Tavg protective circuitry resulting in conditions that caused the reactor to trip.

The Unit was returned to 100 percent power at 0410 hours on September 19, 1998.

2.0 SAFETY CONSEQUENCES AND IMPLICATIONS

This event posed no significant safety implications because the reactor protection (EIS System JD) and engineered safety feature (ESF) (EIS System JE) systems responded as designed following the reactor trip. Therefore, the health and safety of the public were not affected by this event.

A non-emergency four hour report was made to the NRC Operations Center at 2305 hours on September 17, 1997 pursuant to 10CFR50.72(b)(2)(ii) for an event that resulted in a automatic actuation of any engineered safety feature including the reactor protection system. This event is reportable pursuant to 10CFR50.73(a)(2)(iv) for a condition that resulted in an automatic action of any ESF, including the reactor protection system.

3.0 CAUSE

The probable cause of the reactor trip was the actuation of the Over-Temperature Delta-T protection circuitry due to a lightning strike.

4.0 IMMEDIATE CORRECTIVE ACTIONS

Following the reactor trip, Operations Emergency Procedure 2-E-0, "Reactor Trip or Safety Injection" was entered and immediate actions performed to bring Unit 2 to a safe stable condition. The post trip response progressed as expected and the operators transitioned to 2-ES-0.1, "Post Trip Recovery." The plant was stabilized at no-load conditions.

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4.0 IMMEDIATE CORRECTIVE ACTIONS (Continued)

A "Post Trip Review" meeting was conducted at 2300 hours on September 17, 1998, with station personnel to identify the cause of the reactor trip to prevent recurrence, to identify abnormal or degraded indications occurring during the reactor trip, and to assess Unit readiness for return to operation.

5.0 ADDITIONAL CORRECTIVE ACTIONS

Inspection of the Unit 2 area was performed for damage caused by the lightning strike. No physical damage could be located.

Prior to Unit startup, Delta-T/Tavg protection periodic test procedures were performed satisfactory.

6.0 ACTIONS TO PREVENT RECURRENCE

A Category 1 Root Cause Evaluation (RCE) 98-06 has been initiated. Following completion of the RCE 98-06, any additional recommended corrective actions will be evaluated and implemented, as required.

A formal Trip Report has been initiated to confirm and elaborate on the preliminary findings of the reactor trip, summarize the corrective actions, identify the need for additional corrective measures, and present recommendations. Following completion of the Trip Report, any additional recommended corrective actions will be evaluated and implemented, as required.

7.0 SIMILAR EVENTS

There have been no similar events resulting in automatic reactor trips caused by a lightning strike.

8.0 ADDITIONAL INFORMATION

Unit 1 was shutdown for a scheduled refueling outage and was not affected by this event.

Verification of Accuracy

1. Station Deviation Report DR N98-2845 dated September 18, 1998
2. Non-emergency 4 hour report (Event number 34794) made to the NRC Operations Center on September 17, 1998 as required by 10CFR50.72(b)(2)(ii)
3. Memo from W. R. Matthews to D. A. Christian, "Unit 2 Reactor Trip Report" dated September 18, 1998
4. Operations Control Room Unit 2 Narrative Logs for September 17 and 18, 1998
5. "Post Trip Report" dated September 18, 1998
6. Category 1 RCE 98-06, "Unit 2 Reactor Trip on OTDT" (Being Prepared by SNS)
7. Formal Trip Report (Being prepared by SNS)

Action Plan

1. Complete Category 1 RCE 98-06 and implement any additional recommended corrective actions, as required. (Station Nuclear Safety)
2. Complete formal Trip Report and implement any additional recommended corrective actions, as required. (Station Nuclear Safety)

Commitments

1. Complete Category 1 RCE 98-06 and implement any additional recommended corrective actions, as required. (Station Nuclear Safety)
2. Complete formal Trip Report and implement any additional recommended corrective actions, as required. (Station Nuclear Safety)

bc (hard copy distribution):

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Ms. L. N. Hartz	IN/2SE, Vice President, Nuclear Eng. & Services
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Mr. M.C. Murph	OJRP/20
Mr. K. N. Kappatos	ODEC
Mr. L. J. Curfman	IN/2NW, MSRC/NOB Coordinator
Station Records	NAPS (original LER and VOA package)
Licensing File	NAPS, Licensing

bc (electronic distribution):

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