

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) THREE MILE ISLAND, UNIT 1										DOCKET NUMBER (2) 05000289										PAGE (3) 1 OF 04																			
TITLE (4) DEFECTIVE OTSG TUBES																																							
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 NAMES						DOCKET NUMBER(S)						
11			16			84			84			007			001			12			17			84									05000						
11			16			84			84			007			001			12			17			84									05000						
OPERATING MODE (9) N						THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																																	
POWER LEVEL (10) 000						20.402(b)						20.406(a)						60.73(a)(2)(iv)						73.71(b)															
						20.406(a)(1)(i)						60.36(a)(1)						60.73(a)(2)(v)						73.71(a)															
						20.406(a)(1)(ii)						60.36(a)(2)						60.73(a)(2)(vi)						OTHER (Specify in Abstract below and in Text, NRC Form 365A)															
						20.406(a)(1)(iii)						60.73(a)(2)(i)						60.73(a)(2)(vii)(A)																					
						20.406(a)(1)(iv)						60.73(a)(2)(ii)						60.73(a)(2)(vii)(B)																					
20.406(a)(1)(v)						X 60.73(a)(2)(iii)						60.73(a)(2)(viii)						60.73(a)(2)(ix)																					
LICENSEE CONTACT FOR THIS LER (12)																																							
NAME Susan Otto, TMI-1 Licensing Engineer																				TELEPHONE NUMBER																			
AREA CODE 717																				948-8355																			
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																							
CAUSE			SYSTEM			COMPONENT			MANUFACTURER			REPORTABLE TO NRC			CAUSE			SYSTEM			COMPONENT			MANUFACTURER			REPORTABLE TO NRC												
A			B			S			G			B			O			1			5			N															
SUPPLEMENTAL REPORT EXPECTED (14)																																							
X YES (If yes, complete EXPECTED SUBMISSION DATE)																				NO										EXPECTED SUBMISSION DATE (15)									
																														MONTH DAY YEAR unknown									
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																																							
<p>On 11/16/84, tubes in OTSG A were identified during Eddy Current Testing (ECT) as being defective. The inspection results in the periphery of OTSG A were declared to be in category C-3 (more than 1% of inspected tubes are defective) per T.S. 4.19. Further ECT is continuing in both OTSG A and B to identify the full extent of the indications.</p> <p>The root cause of this event has not been finalized at this time and is under active investigation. Repeat eddy current examination, and the absence of any leakage during recent bubble and drip tests, and review of chemistry data indicate that the sulfur-induced stress assisted cracking phenomenon which occurred in 1981 is not presently active.</p> <p>In accordance with T.S. 4.19, defective tubes will be removed from service. Supplemental information will be submitted as it becomes available. A final report will be submitted upon completion of the analysis of the results of the eddy current tests. This report will include our conclusion on the root cause of this event.</p>																																							
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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1) THREE MILE ISLAND, UNIT 1	DOCKET NUMBER (2) 0 8 0 0 0 2 8 9 8 4 - 0 0 7 - 0 0	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

TEXT (If more space is required, use additional NRC Form 308A's) (17)

I. PLANT OPERATING CONDITIONS BEFORE THE EVENT

TMI-1 was in a cold shutdown condition with the Once Through Steam Generator (OTSG) upper manways removed for access to conduct routine technical specification surveillance testing of OTSG tubes. Reactor Coolant System cold leg piping (including the OTSG's) was drained.

II. STATUS OF STRUCTURES/COMPONENTS

Prior to Eddy Current Testing (ECT), both OTSG A and B were considered operable (no leakage observed during the October 1984 bubble and drip tests). Routine ECT was being conducted per Technical Specification 4.19 requirements.

During 1981, TMI-1's OTSG A and B tubes experienced intergranular stress assisted cracking (IGSAC) originating in the tube primary side, which is the inside diameter of the tube. The IGSAC was located primarily in the upper tubesheet region. As discussed in GPUN Topical Report #008, both OTSG A and B tubes have been repaired by: 1) a kinetic expansion process in the upper tubesheets, 2) and removing some tubes from service. At present, OTSG A has 916 tubes removed from service and the OTSG B has 290 tubes removed from service. There are 15,531 tubes in each OTSG.

III. EVENT DESCRIPTION

On 11/16/84, tubes in OTSG A were identified by ECT as being defective ($\geq 40\%$ through wall). The inspection results in the periphery of OTSG A were declared to be in category C-3 (more than 1% of the inspected tubes are defective) per T.S. 4.19 at 1715 hours on 11/16/84, and the

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U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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TEXT (If more space is required, use additional NRC Form 288A's) (17)

III. EVENT DESCRIPTION (Cont'd.)

NRC was notified by phone. In OTSG B less than 1% of the tubes in the first 3% inspection sample were identified by ECT as being defective. Further ECT is continuing in both OTSG A and B to identify the full extent of these indications. ECT should be completed by the end of December. Present results indicate most of the ECT indications are in peripheral tubes, on the primary side (which is the inside diameter of the tubes).

Generally, the ECT indications are predominantly found in the 46 inch free span between the bottom face of the upper tubesheet and the 15th tube support plate.

The root cause of this event has not been finalized at this time and is under active investigation. Repeat eddy current examinations, and the absence of any leakage during recent bubble and drip tests, and review of chemistry data indicate that the sulfur-induced stress assisted cracking phenomenon which occurred in 1981 is not presently active.

IV. COMPONENT FAILURE DATA

Component name: Once Through Steam Generator
Component System: Reactor Coolant System
Component Manufacturer: Babcock and Wilcox
Reportable to NPRDS: N
Method of Discovery: Eddy Current Testing

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U.S. NUCLEAR REGULATORY COMMISSION

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TEXT (If more space is required, use additional NRC Form 306A's) (17)

V. AUTOMATIC OR MANUALLY INITIATED SAFETY SYSTEM RESPONSE

Not applicable to this event.

VI. ASSESSMENT OF THE SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

TMI-1 was in a cold shutdown condition. Tube leakage tests completed in October 1984, several weeks prior to this event, indicated no detectable tube leakage. Therefore, no safety consequences have occurred.

VII. PREVIOUS EVENTS OF A SIMILAR NATURE

As stated in section II, IGSA cracking in OTSG tubes at TMI-1 had previously been detected in Eddy Current tests conducted in 1981 and 1982 which required tubes to be repaired or removed from service.

VIII. CORRECTIVE ACTIONS PLANNED

In accordance with T.S. 4.19, defective tubes will be removed from service.

Supplemental information will be submitted as it becomes available. A final report will be submitted upon completion of the analysis of the eddy current tests. This report will include our conclusion on the root cause of this event.



GPU Nuclear Corporation
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717 944-7621
TELEX 84-2386
Writer's Direct Dial Number:

December 17, 1984
5211-84-2298

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

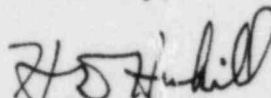
Dear Sir:

Three Mile Island Nuclear Station Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
LER 84-007-00

This letter transmits Licensee Event Report (LER) No. 84-007-00 which deals with defective Once Through Steam Generator tubes. Public health and safety were unaffected.

This LER is being submitted pursuant to 10 CFR 50.73, using the required NRC forms (attached). NRC Form 366 contains an abstract which provides a brief description of the event. For a complete understanding of the event, refer to the text of the report which appears on Form 366A.

Sincerely,


H. D. Hukill
Director, TMI-1

Enclosure

HDH/SMO/kds

cc: Dr. T. E. Murley
R. Conte
J. Van Vleet