



**Entergy  
Operations**

Entergy Operations, Inc.

PO Box 61

Worcester, MA 01608

Tel: 508-798-6850

Ref: 10CFR50.73(a)(2)(i)

W3B5-91-0192

A4.05

QA

June 20, 1991

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

Subject: Waterford 3 SES  
Docket No. 50-382  
License No. NPF-38  
Reporting of Licensee Event Report

Gentlemen:

Attached is Licensee Event Report Number LER-91-009-00 for Waterford Steam Electric Station Unit 3. This Licensee Event Report is submitted pursuant to 10CFR50.73(a)(2)(i).

Very truly yours,

D.F. Packer  
General Manager - Plant Operations

DFP/JDC/rk  
Attachment

cc: Messrs. R.D. Martin  
G.L. Florreich  
J.T. Wheelock - INPO Records Center  
E.L. Blake  
D.L. Wigginton  
N.S. Reynolds  
NRC Resident Inspectors Office

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## LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (R&B), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Waterford Steam Electric Station Unit 3

DOCKET NUMBER (2)

0 5 0 0 0 3 8 2 1 OF 0 4

PAGE (3)

TITLE (4)

Safety Injection Tank 1A and 1B Inoperable due to Relief Valve Malfunction

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)									
0	5	2	1	9	1	9	1	0	0	9	0	6	2	0	9	1	N/A	0 5 0 0 0 0		
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)																	
3			20.402(b)										20.405(z)		50.73(a)(2)(iv)		73.71(b)			
POWER LEVEL (10)			G 0 0										20.406(a)(1)(i)		50.36(a)(1)		50.73(a)(2)(v)		73.71(c)	
			20.406(a)(1)(ii)										50.36(a)(2)		50.73(a)(2)(vi)		OTHER (Specify in Abstract Below and in Text, NRC Form 366A)			
			20.406(a)(1)(iii)										X 50.73(a)(2)(i)		50.73(a)(2)(vii)(A)					
			20.406(a)(1)(iv)										50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)					
			20.406(a)(1)(v)										50.73(a)(2)(iii)		50.73(a)(2)(ix)					

LICENSEE CONTACT FOR THIS LER (12)

NAME

J.G. Hoffmann, Maintenance Superintendent

TELEPHONE NUMBER

AREA CODE

5 0 4 4 6 4 - 3 1 3 8

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										
X	B	P	T	K	R	V	C	7	1	6	Y								

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input checked="" type="checkbox"/>	<input type="checkbox"/>				

ABSTRACT (Limit to 1400 spaces; i.e., approximately fifteen single space typewritten lines) (16)

On May 21, 1991, the plant was shutdown in Mode 3 at a Reactor Coolant System (RCS) pressure and temperature of 2250 psia and 540 degrees Fahrenheit, respectively. Safety Injection Tank (SIT) 1A was out of service due to an inoperable nitrogen relief valve. At 1411 hours the relief valve for SIT 1B lifted, lowering SIT 1B pressure below 600 psig. The resulting condition of two SITs inoperable under the existing plant conditions is reportable under 10CFR50.73(a)(2)(i) as a condition prohibited by technical specifications (TSs) (entry into TS 3.0.3).

RCS pressure was lowered to less than 1750 psia, SIT 1A and 1B were declared operable, and Technical Specification 3.0.3 was exited. The relief valves for SIT 1A and 1B were later removed, tested, and returned to service.

The most likely root cause of this event is equipment malfunction due to abnormal vibration of the relief valve or valve tailpiece when agitated by scaffolding movement. This agitation resulted in the spurious opening of the SIT 1A and 1B relief valves at a pressure lower than the required setpoint. Due to the prompt actions of operations personnel to place the plant in a stable condition in which the SITs were all operable, there was no danger to the health and safety of the general public or site personnel.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUIREMENT: 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  Waterford Steam Electric Station Unit 3	DOCKET NUMBER (2)  0 5 0 0 0 3 8 2 9 1	LER NUMBER (6)			PAGE (3)		
		YEAR  — 0 0 9	SEQUENTIAL NUMBER  — 0 0	REVISION NUMBER  0 2	OF  0 4		

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

On May 21, 1991, at 1045 hours with the plant shutdown in Mode 3 at a Reactor Coolant System (RCS) (LIIS identifier AB) pressure and temperature of 2250 psia and 540 degrees Fahrenheit, respectively, Construction personnel entered containment to remove scaffolding from Safety Injection Tank (SIT) (EIIS identifier BP-TK) 1A. The removal of scaffolding was nearly complete, when, at 1110 hours, a loud air noise was heard by personnel in containment in the vicinity of SIT 1A. Concurrently, the Control Room received the "SI TANK 1A PRESSURE HI/LO" and SI TANK PRESSURE LO-LO" annunciators with a dropping indicated pressure on SIT 1A. SIT 1A was declared inoperable due to indicated pressure dropping below the Technical Specification minimum of 600 psig with RCS pressure greater than 1750 psia in Mode 3, and Technical Specification limiting condition for operation (LCO) 3.5.1 was entered. An attempt was made to restore pressure by opening the SIT 1A nitrogen fill valve (EIIS identifier LK-1SV), but pressure continued to drop.

The nitrogen fill valve was closed to prevent a reduction in nitrogen system pressure. At 1155 hours SIT 1A pressure had stopped dropping and the nitrogen system was fully pressurized. Nitrogen was aligned to increase SIT 1A pressure. However, at about 1223 hours, SIT 1A relief valve (EIIS identifier RV) again lifted and pressure could not be restored above approximately 545 psig. SIT 1A pressure stopped dropping at 329 psig.

Reactor Coolant System depressurization was commenced at 1235 hours to reduce RCS pressure below 1750 psia in accordance with Technical Specification LCO 3.5.1. At approximately 1405 hours, a scaffolding crew went to SIT 1B to remove scaffolding. When one of the scaffolders stepped on top of SIT 1B, he heard a loud noise. Air was heard rushing out of a floor drain and was noted to last approximately 5 minutes. The air noise was reported to the Control Room staff, which had received the "SI TANK 1B PRESSURE HI/LO" and "SI TANK 1B PRESSURE LO-LO" annunciators and noted a dropping SIT 1B indicated pressure.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  Waterford Steam Electric Station Unit 3	DOCKET NUMBER (2)  0 5 0 0 0 3 8 2	LER NUMBER (6)			PAGE (3)		
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		9 1	— 0 0 9 —	0 0	0 3	OF	0 4

TEXT (If more space is required, use additional NRC Form 365A's) (17)

Pressure drop in SIT 1B stopped at 335 psig. There was no pressure or level increase noted for SIT 1B before the pressure drop occurred. These indications were checked to see if SIT 1B pressure may have actually increased. At 1411 hours, SIT 1B was declared inoperable and Technical Specification 3.0.3 was entered due to the condition of two inoperable SITs. At 1428 hours, RCS pressure was lowered to less than 1750 psia. With SIT 1A and 1B pressure above 235 psig and RCS pressure below 1750 psia, all SITs were now operable in accordance with TS 3.5.1. Technical Specification LCO 3.5.1 and 3.0.3 were exited at 1428 hours.

Both SIT 1A and 1B were vented and the relief valves were bench tested. The relief valve for SIT 1A (SI-327A) was found to have a loose locknut on the setpoint adjustment which allowed the setpoint to drift low. SI-327A was adjusted to a setpoint of 700 psig and placed back in service. SIT 1B relief valve (SI-327B) was found to lift at the normal setpoint of 700 psig and was placed back in service.

Under Work Authorization (WA) 01078469, a test was performed to determine if mechanical agitation of the valves could have caused a premature lift. A spare Crosby Relief valve (Model JMBUB) was installed on a test stand and the setpoint pressure was verified at 702 psig. When subjected to a pressure of 650 psig and struck from the top or side with a 5 pound rubber mallet, the valve lifted. The test conclusion was "... a blow to the valve will cause it to lift below its set pressure."

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  Waterford Steam Electric Station Unit 3	DOCKET NUMBER (2)  0 6 0 0 0 3 8 2	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 1	— 0 0 9 —	0 0	0 4	OF	0 4

TEXT (If more space is required, use additional NRC Form 365A's) (17)

The most probable root cause of this event was determined to be equipment malfunction due to abnormal vibration when the valve or valve tailpiece was agitated by scaffolding movement. In the case of SIT 1A and 1B, scaffolding had been erected adjacent to the relief valve tailpiece. The affected valves have been retested, verified to lift at the correct pressure of 700 psig, and placed back into service. Further testing is planned to investigate other effects which might cause premature relief valve lifts. Additional corrective actions will be based on the results of this testing. Tests will be complete by August 30, 1991.

Due to the prompt actions of operations personnel to place the plant in a stable condition in which the SITs were operable, there was no danger to the health and safety of the general public or site personnel.

Similar Events:

None

Plant Contact:

J.G. Hoffpauir, Maintenance Superintendent, (504) 464-3138