

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Waterford Steam Electric Station Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 3 8 2	PAGE (3) 1 OF 0 3
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TITLE (4) Reactor Trip Due to a Turbine Trip Caused by Hi-Hi Level in
Moisture Separator Reheater Shell Drain Tank 2A

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 9	0 9	8 6	8 6	0 1 9	0 0	1 0	1 0	8 6	N/A			0 5 0 0 0					
												N/A			0 5 0 0 0		

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)

OPERATING MODE (9) 1	20.402(b)	20.405(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)
	20.405(a)(1)(i)	50.36(c)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	73.71(c)
	20.405(a)(1)(ii)	50.36(c)(2)	<input type="checkbox"/>	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iii)	50.73(a)(2)(i)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)	
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(ix)		

LICENSEE CONTACT FOR THIS LER (12)

NAME L.W. Myers, Operations Superintendent - Nuclear	TELEPHONE NUMBER 510 4 416 4 1-13 1 1 B
AREA CODE	

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

At 2020 hours on September 9, 1986, Waterford Steam Electric Station Unit 3 was operating at 100% reactor power (Waterford had been at approximately 100% power since July 18, 1986) when an uncomplicated reactor trip occurred due to a Turbine (TA) trip. Coincident with the reactor trip, an Emergency Feedwater (BA) Actuation Signal occurred with the Emergency Feedwater Pumps A, A/B, and B starting and injecting water into the Steam Generators (AB) for approximately ten (10) minutes. Upon receiving the reactor trip, operations personnel immediately entered procedure OP-902-000, "Emergency Entry Procedure", and OP-902-001, "Uncomplicated Reactor Trip Recovery Procedure", and the plant was stabilized in mode 3 (hot standby).

The Turbine trip was a result of a high water level condition in the Moisture Separator Reheater (MSR) Shell Drain Tank (SDT) 2A (SN), and an inadequate valve line up on MSR Shell 2A (SN). The high level condition was attributed to an alternate drain valve failure, and inadequate design drain flow characteristics to maintain proper SDT levels.

Immediate corrective actions were taken to rework the failed alternate drain valve, verify proper actuation of the applicable MSR level switches, and verify correct valve alignment.

Since all plant protective systems functioned as designed the event did not pose a threat to the health and safety of the public.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Waterford Steam Electric Station Unit 3	DOCKET NUMBER (2) 0500038286	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		86	019	00	02	OF 03

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

At 2020 hours on September 9, 1986, Waterford Steam Electric Station Unit 3 was operating at 100% reactor power (Waterford had been at approximately 100% power since July 18, 1986) when operations personnel received a reactor trip due to a Turbine (TA) trip. The Turbine trip was due to an actual high water level condition in the Moisture Separator Reheater (MSR) Shell Drain Tank (SDT) 2A (SN), and a false high level condition in the MSR Shell 2A (SN) (this was due to an isolated water column which contained level switches FHD-ILS-0460A2 and FHD-ILS-0461A2). Coincident with the reactor trip, an Emergency Feedwater (BA) Actuation Signal occurred. The A, A/B, and B pumps started as designed and injected water into the Steam Generators (AB) for approximately ten (10) minutes. (Due to shrinkage of the water level in the Steam Generators after a reactor trip, it is common for the Emergency Feedwater Pumps to receive a start signal.) Operations personnel immediately entered procedure OP-902-000, "Emergency Entry Procedure", and OP-902-001, "Uncomplicated Reactor Trip Recovery Procedure", and the plant was stabilized in mode 3 (hot standby).

The actual high level condition in MSR SDT 2A and the false high level condition in MSR Shell 2A enabled two (2) of the three (3) limit switches (coincident for greater than seventy (70) seconds) for Turbine trip logic on Hi-Hi levels in the MSR SDT 2A and MSR Shell 2A. System alignment at the time of the event was that MSR SDT 2A normal drain valve (FHD-240A) was fully open and SDT 2A alternate drain valve (FHD-256A) was maintaining SDT 2A level. Additionally, the water column for MSR Shell 2A level switches was isolated (by root valves FHD-104A and FHD-102A) due to improper valve line up deviations performed in March, 1986. (Apparently one (1) of the above root valves leaked by its seat, causing steam to condense until one (1) of the two (2) level switches actuated, satisfying one-half of the trip logic.) The second-half of the trip logic was satisfied when a cam loosened from it's position on the valve actuator for the SDT 2A alternate drain valve (FHD-256A) causing the valve to fail closed. (This caused SDT 2A to have an actual high level, which actuated FHD-ILS-0455A, and satisfied the second-half of the Turbine Trip Logic).

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

Immediate corrective actions were taken to rework the valve operator for valve FHD-256A, verify proper operation of applicable limit switches for MSR Shell 2A, and MSR SDT 2A (CIWA 028506), and verify correct valve alignments. Additional corrective actions are planned to improve administrative controls for deviations to valve line ups (anticipated date of November 15, 1986); establish a Plant Monitoring Computer (PMC)(ID) group, under CIWA 028778, to monitor all Turbine (TA) trip logics (anticipated date of November 1, 1986); evaluate Station Modification Request (SMR) #1523 which was initiated prior to the event, and addresses design drain flow characteristics (anticipated date October 31, 1986); and evaluate SMR #i730 which addresses installing a Control Room annunciator to actuate on any MSR Shell Limit switch tripped condition (anticipated completion date October 31, 1986).

Since all of the plant protective systems functioned as designed this event did not pose a threat to the health and safety of the public.

SIMILAR EVENTS

Waterford has not experienced a reactor trip due to Hi-Hi MSR Shell levels.

PLANT CONTACT

L.W. Myers, Operations Superintendent-Nuclear, 504/464-3118



LOUISIANA
POWER & LIGHT

WATERFORD 3 SES • P.O. BOX B • KILLONA, LA 70066-0751

October 10, 1986

W3A86-0101
A4.05
QA

Director, Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

ATTENTION: Document Control Desk

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

Dear Sir:

Attached is Licensee Event Report Number LER-86-019-00 for Waterford 3.
This Licensee Event Report is submitted per 10CFR50.73(a)(2)(iv).

Very truly yours,

R.P. Barkhurst
Vice-President - Nuclear

RPB/LWL/wp

Attachment

cc: R.D. Martin, G.W. Knighton, J.H. Wilson, NRC Resident Inspectors Office,
INPO Records Center (J.T. Wheelock), B.W. Churchill, W.M. Stevenson

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