



**Entergy Nuclear Southwest**  
Entergy Operations, Inc.  
17265 River Road  
Killona, LA 70066-0751  
Tel 504 739 6475  
Fax 504 739 6698  
aharris@entergy.com

**Alan J. Harris**  
Director, Nuclear Safety Assurance  
Waterford 3

**W3F1-2001-0058**  
**A4.05**  
**PR**

June 27, 2001

U.S. Nuclear Regulatory Commission  
Attn: 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 (LER) 01-005-00 for Waterford Steam Electric Station Unit 3. This report provides details of a condition discovered wherein a fire in Fire Area RAB 27 could result in the loss of both trains of EDG Fuel Oil Transfer Pump. Assuming that the fire also results in a loss of off-site power, the EDGs would be operable for only 3 hours (until the diesel fuel in the day tanks is depleted). This constitutes an unanalyzed condition. This condition is being reported pursuant to 10 CFR 50.73(a)(2)(ii)(B).

There are no commitments contained in this submittal. If you have any questions, please contact O. Pipkins at (504) 739-6707.

Very truly yours,

A handwritten signature in cursive script that reads "Alan J. Harris".

A.J. Harris  
Director,  
Nuclear Safety Assurance

AJH/OPP/ssf  
Attachment

*JE22*

Licensee Event Report

W3F1-2001-0058

Page 2

June 27, 2001

cc: (w/Attachment)  
E.W. Merschoff (NRC Region IV)  
N. Kalyanam (NRC-NRR)  
A.L. Garibaldi  
lerevents@inpo.org - INPO Records Center  
J. Smith  
N.S. Reynolds  
NRC Resident Inspectors Office  
Louisiana DEQ/Surveillance Division

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [bjsl@nrc.gov](mailto:bjsl@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NE0B-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

**LICENSEE EVENT REPORT (LER)**

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

<b>FACILITY NAME (1)</b> Waterford Steam Electric Station, Unit 3	<b>DOCKET NUMBER (2)</b> 05000-382	<b>PAGE (3)</b> 1 OF 4
--	---------------------------------------	---------------------------

**TITLE (4)**  
Potential For Loss of Both EDG Fuel Oil Transfer Pumps By a Single Fire

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	01	01	01	- 005 -	00	06	28	01	N/A	05000
									N/A	05000

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)								
1	100	20.2201(b)	20.2203(a)(3)(ii)	x	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)				
		20.2201(d)	20.2203(a)(4)		50.73(a)(2)(iii)	50.73(a)(2)(x)				
		20.2203(a)(1)	50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)	73.71(a)(4)				
		20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)	73.71(a)(5)				
		20.2203(a)(2)(ii)	50.36(c)(2)		50.73(a)(2)(v)(B)	OTHER				
		20.2203(a)(2)(iii)	50.46(a)(3)(ii)		50.73(a)(2)(v)(C)	Specify in Abstract below or in NRC Form 366A				
		20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)					
		20.2203(a)(2)(v)	50.73(a)(2)(i)(B)		50.73(a)(2)(vii)					
		20.2203(a)(2)(vi)	50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)					
		20.2203(a)(3)(i)	50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)					

LICENSEE CONTACT FOR THIS LER (12)	
NAME Oscar P. Pipkins / Senior Licensing Engineer	TELEPHONE NUMBER (Include Area Code) (504) 739-6707

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

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 1, 2001, at 0809, with the plant operating in Mode 1 at 100% Reactor power, it was discovered that a fire in Fire Area RAB 27 could result in the loss of both trains of Emergency Diesel Generator (EDG) Fuel Oil Transfer Pumps. The condition existed due to a failure to wrap certain essential 'B' train equipment cables located in that fire area. Assuming a loss of off-site power in conjunction with the fire could result in both Emergency Diesel Generators becoming inoperable in approximately 3 hours, following depletion of fuel oil in the Day Tanks. This condition could significantly impact the ability of the plant to achieve and maintain cold shutdown. The condition is believed to have been caused by a design analysis deficiency during preparation of the original safe shutdown analysis. Fire impairments were generated and compensatory measures (hourly fire watches) were established pending resolution. The condition constitutes an unanalyzed condition that significantly degrades plant safety and is therefore reportable under 10 CFR 50.73(a)(2)(ii)(B). There was no actual fire event involved. Therefore, the condition did not compromise the health and safety of the general public. This event is not considered a Safety System Functional Failure (SSFF).

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Waterford Steam Electric Station, Unit 3	05000-382	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		01	-- 005	-- 00	

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

**REPORTABLE OCCURRENCE**

On May 1, 2001, it was determined that potential exists for a fire in Fire Area RAB 27 to render both trains of Emergency Diesel Generator (EDG) Fuel Oil Transfer Pumps inoperable. Assuming a concurrent loss of off-site power, the diesels would be operable for approximately 3 hours, until the fuel in the day tanks would be depleted. This would place the plant in an unanalyzed condition. Therefore, the condition was reported, within 8 hrs, on May 1, 2001 to the NRC Operations Center pursuant to 10 CFR 50.72(b)(3)(ii)(B) as an unanalyzed condition that significantly degrades plant safety. The condition is herein being reported, within 60 days, pursuant to 10 CFR 50.73(a)(2)(ii)(B).

**INITIAL CONDITIONS**

Just prior to the discovery, Waterford 3 was operating in Mode 1 at 100% reactor power. No major systems, structures or components were out of service specific to the reported condition.

**EVENT DESCRIPTION**

On May 1, 2001, during performance of a 10 CFR 50 Appendix R review project, it was discovered that certain electrical cables in Fire Area RAB 27 were not protected (fire wrapped) as required to provide adequate separation from the redundant train. The area is provided with fire detection and fire suppression. Separation by a three hour fire barrier or 20 feet of distance between redundant trains (with no intervening combustibles / fire hazards) is not provided. Therefore a one-hour fire wrap was required on the cables. The plant area affected is a +7 elevation Reactor Auxiliary Building (RAB) Mechanical-Electrical and HVAC equipment room. In this area, the 'B' train is the protected train of safe shutdown equipment. The discovered unprotected cables were 480-volt power cables 32505A and 32505B (conduit 32505A-SB) routing from switchgear SSD-ESWGR-31B to EMCC-312B, that pass through Fire Area RAB 27. EDG Fuel Oil Transfer Pump 'B' (EGF-MPMP-0001B) [DC] could become inoperable, due to loss of power supply, caused by a fire in the fire area. The Train 'A' EDG Fuel Oil Transfer Pump (WEGF-MPMP-0001A) [DC] could also become inoperable since its cables are, by design configuration, not protected from fire in that fire area. Therefore the fuel supplies to both trains of EDG could be impacted and the EDGs could run for only a limited

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)		
Waterford Steam Electric Station, Unit 3	05000-382	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3	OF	4
		01	-- 005	-- 00			

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

period of time (less than 3 hours) due to loss capability to refill the Day Tanks.

**CAUSAL FACTORS**

The condition was caused by a design analysis deficiency during the preparation of the original safe shutdown analysis. The original safe shutdown analysis was focused on essential "equipment" and later evolved to include "cables" for essential equipment.

**CORRECTIVE ACTIONS**

Temporary compensatory actions (hourly fire watches) were initiated in accordance with Section 3.7.11 of the Technical Requirements Manual (TRM). Compensatory actions will remain in place until permanent corrective actions are implemented.

Permanent corrective actions are being addressed under the plant corrective action program.

An Appendix R review project is in progress to fully evaluate the adequacy of the Waterford 3 fire protection design.

**SAFETY SIGNIFICANCE**

Fire Area RAB 27 has a low combustible loading and minimal other fire hazards. The potential for a fire in that area to impact both safe shutdown trains is low. The redundant conduits are located greater than 20 feet from each other with a non-fire rated wall and insignificant, intervening combustibles between the conduits. Although the wall contains deficiencies per fire barrier criteria (opening around duct penetrations), the wall would have significantly reduced or delayed the transmission of fire, heat, and products of combustion to the non-fire side of the wall. In addition, both sides of the wall are provided with fire detection, which would have alarmed initiating immediate fire brigade response. Both sides of the wall are also provided with automatic sprinkler protection. Automatic sprinkler protection historically extinguishes most industrial fires. This indicates that automatic fire extinguishing during the early stages of fire growth and development is a valid expectation. Thus it is believed that the fire would have been detected and extinguished prior to damage occurring to both shutdown trains. Therefore, it is believed that realistically, the plant Operators would have been able to achieve safe shutdown. The condition

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)		
Waterford Steam Electric Station, Unit 3	05000-382	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4	OF	4
		01	-- 005	-- 00			

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

is being reported because Appendix R criteria forces the worst-case fire scenario, assuming the probability of a fire as being one and the concurrent probability of a loss of offsite power as being one. In the worst case scenario, the assumption is made that everything that is not protected from fire in the room is lost to the fire (regardless of actual fire loading in the area).

This event is not considered a Safety System Functional Failure (SSFF).

**SIMILAR EVENTS**

Two other similar events were identified that were reported by Waterford 3 over the last three and a half year period (1998 through current date) which involved discovery of Appendix R separation violations with potential for loss of both trains of Safe Shutdown Equipment due to inadequate design configuration analysis. The similar events were:

**LER 99-009-00**

An Appendix R non-compliance condition involving inadequate separation of safe shutdown cables.

Cause: Design configuration and analysis: Design analysis deficiency.

**LER 00-009-00**

Potential for loss of safe shutdown equipment by a fire in either of two separate fire areas.

Cause: Original design inadequacies in safe shutdown analysis. In one case an inadequate design change was involved.

**ADDITIONAL INFORMATION**

Energy Industry Identification System (EIIS) codes are identified in the text within brackets [ ].