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D. F. Packer
General Manager
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Waterford 3

W3F1-92-0178
A4.05
QA

July 8, 1992

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 Number LER-92-003-01 for Waterford Steam Electric Station Unit 3. This Licensee Event Report supplement is submitted to provide additional information and clarification acquired during the investigation of the events described. This Licensee Event Report is submitted pursuant to 10CFR50.73(a)(2)(iv).

Very truly yours,

D.F. Packer
General Manager - Plant Operations

DFP/TJG/dc
Attachment
cc: R.D. Martin, NRC Region IV
G.L. Florreich
J.T. Wheelock - INPO Records Center
R.B. McGehee
N.S. Reynolds
NRC Resident Inspectors Office
Administrator - LRPD

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NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES 4/30/92
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-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.

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 5

TITLE (4): Inadvertant Control Room Emergency Filtration Unit Start

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)
									N/A	0 5 0 0 0
0 4	2 7	9 2	9 2	0 0 3	0 1	0 5	0 8	9 2	N/A	0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
1		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
1 0 0		20.405(a)(1)(ii)	50.36(c)(2)	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)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
J.G. Hoffpauir, Plant Maintenance Superintendent	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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

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 fifteen single-spaced typewritten lines) (16)

At 0113 hours on April 27, 1992, Waterford Steam Electric Station Unit 3 was operating at 100% power when an unplanned actuation of the Engineered Safety Feature (ESF) portion of the Control Room Ventilation System occurred. The actuation was initiated by a high alarm setpoint being reached on one of the four normal Control Room Outside Air Intake (CROAI) radiation monitors, CROAI 0200.2BS, causing the Control Room Ventilation System to isolate and Control Room Emergency Filtration Unit S8-B to automatically start. All other CROAI radiation monitors were indicating normal radiation levels and subsequent air samples taken in the area of the alarming radiation monitor showed no detectable activity. This event is reportable under 10CFR50.73(a)(2)(iv) as an unplanned actuation of an ESF system.

The root cause of the event was indeterminate. The most probable cause of this event was an electrical spike. New Resistor-Capacitor (RC) filters have been installed in the CROAI circuitry. The Control Room Emergency Filtration System functioned as designed and there was no actual release of radioactive material; therefore, this event did not result in an increased risk to the health and safety of the public or plant personnel.

REPORTABLE OCCURRENCE

On April 27, 1992, Waterford Steam Electric Station Unit 3 was operating at 100% power when an unplanned actuation of the Engineered Safety Feature (ESF) portion of the Control Room Ventilation System (EIIS Identifier VI) occurred. The actuation was initiated by a high alarm setpoint being reached on ARM-IRE-0200,2BS, one of the four normal Control Room Outside Air Intake (CROAI) radiation monitors (EIIS Identifier IL-MON). This alarm caused the Control Room Ventilation System to isolate and Control Room Emergency Filtration Unit (EIIS Identifier JE) S8-B to automatically start. All other CROAI radiation monitors were indicating normal radiation levels and subsequent air samples taken in the area of the alarming radiation monitor showed no detectable activity. This event is reportable under 10CFR50.73(a)(2)(iv) as an unplanned actuation of an ESF system.

INITIAL CONDITIONS

Mode 1, 100% power.

EVENT SEQUENCE

The Control Room Outside Air Intake (CROAI) radiation monitors measure airborne activity levels in the control room outside air intakes. In the event high airborne activity is detected, a signal is generated to isolate the normal outside air intakes, place the Control Room Ventilation System in recirculation mode, and start the Control Room Emergency Ventilation system. The detectors (model number RD-25-04) are scintillation detectors (EIIS Identifier DET) mounted in the duct, with the detector windows exposed to the duct interior. Each of the two normal outside air ducts, one on the northeast side of the Reactor Auxiliary Building (RAB) (EIIS Identifier NF) and one on the southwest side, have two detectors each, for a total of 4.

CHRONOLOGY OF MAJOR EVENTS:

At 0113 hours on April 27, 1992, CROAI 0200,2BS spiked causing Control Room Emergency Filtration Unit S8-B to start. Operating Procedure (OP)-901-017, Off-Normal Procedure-High Airborne Activity in Control Room, was entered.

At 0118 hours, CROAI ARM-IRE-0200,2BS cleared.

At 0120 hours, a Health Physics (HP) technician was directed to take local airborne activity samples near the affected CROAI.

At 0243 hours, airborne samples taken in the area of CROAI 0200,2BS indicated no detectable activity.

At 0246 hours, Control Room Ventilation was restored to normal and OP-901-017 was exited.

Work Authorization (WA) 01092995 was generated to evaluate the affected CROAI for the cause of the spike. Experience has shown that the only two spiking mechanisms known for the detectors are electronic noise and light penetrating the mylar window. Following the event, Instrumentation and Control (I&C) technicians applied an external light source to the detector to determine if the mylar detector cover was damaged causing the spike. No upscale reading was detected, the mylar had not been damaged.

On May 1, 1992, WA 01092995 was returned to the supervisor to plan further actions. The most likely cause of the electrical spike was due to the Resistor-Capacitor (RC) (EIIS Identifier CAP) filters in the CROAI circuitry not performing their function. An RC filter is a monolithic capacitor and resistor assembly that removes stray electronic signals that may be induced by outside interferences or traveling directly on the 120 volts alternating current power line.

On May 7, 1992, parts were obtained from the warehouse for the RC filter replacement.

On May 8, 1992, new RC filters were installed into ARM-IRE-0200.2BS; the monitor was to be trended for 24 hours to gather data.

On May 10, 1992, 48 hours of trending was completed (the data was trended for an additional 24 hours); no spiking observed.

At 2041 hours on May 10, 1992, the CROAI radiation monitor ARM-IRE-0200.2BS was declared operable.

CAUSAL FACTORS

Root cause:

1. The root cause of this event is indeterminate. The most probable cause of this event was an electrical spike since a light check verified that the mylar detector covering was intact.

CORRECTIVE ACTION

Root cause:

1. Installed new RC filters.

Action: Maintenance
Due: Complete

SAFETY SIGNIFICANCE

During this event the Control Room Emergency Filtration System functioned as designed and there was no actual release of radioactive material. This event did not result in an increased risk to the health and safety of the public or plant personnel.

SIMILAR EVENTS

Design Change (DC) 3078 which changed the aluminum foil beta window light shield with a more durable mylar window was implemented in September 1990. The following LER's had similar problems prior to DC-3078 due to electrical spiking, beta window light shield perforations, and incorrect high alarm setpoints. LER's 90-015, 90-014, 88-003, 87-022, 87-015, 86-029, 86-022, 86-020, 86-003, 85-048, 85-043, 85-039, 85-036, 85-030, 85-005, 85-002, and 84-001.

LER 91-002, Spurious Control Room Emergency Filtration Unit Actuation caused by a pinhole in the mylar window is an event independent of the corrective actions of DC-3078.

This event discussed herein appears to be an isolated incident independent of any previously identified corrective action.