



**Entergy  
Operations**

**Entergy Operations, Inc.**  
P.O. Box 8  
Kilbuck, LA 70066  
Tel 504-464-3120

**D. F. Packer**  
General Manager  
Plant Operations  
Waterford 3

W3F1-94-0078  
A4.05  
PR

June 2, 1994

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-94-008-00 for Waterford Steam Electric Station Unit 3. This Licensee Event Report is submitted in accordance with 10CFR50.73(a)(2)(i, ii, v, and vii).

Very truly yours,

D.F. Packer  
General Manager  
Plant Operations

DFP/BRL/tjs  
Attachment

cc: L.J. Callan, NRC Region IV  
G.L. Florreich  
J.T. Wheelock - INPO Records Center  
R.B. McGehee  
N.S. Reynolds  
NRC Resident Inspectors Office  
Administrator - LRPD

070050

9406070320 940602  
PDR ADDCK 05000382  
S PDR

### LICENSEE EVENT REPORT (LER)

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNR 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, 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)

05000 382

PAGE (3)  
1 OF 11

TITLE (4)

Circuitry Problem Affects ESF Filtration Unit Heaters

EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	03	94	94	008	00	06	02	94	N/A	05000
									N/A	05000

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
1	100	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
		<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
		<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input checked="" type="checkbox"/> 50.73(a)(2)(vii)	OTHER
		<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	Specify in Abstract below and on Text, NRC Form 366A
		<input type="checkbox"/> 20.405(a)(1)(iv)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
		<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME: D. W. Vinci, Superintendent, Operations  
TELEPHONE NUMBER (Include Area Code): 504/464-3178

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)

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
			07	02	94

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On May 3, 1994, Engineering identified a circuitry problem involving the response times of the temperature controllers and time delay relays for the ESF filtration unit heaters. The temperature controllers for the ESF filtration unit heaters were replaced between 10/92 and 4/93 via Design Change 3292. The response time problem potentially existed since those replacements. The preliminary root cause of this event is inadequate design information which did not identify the timing function of the original temperature controller and the requirement for the controller to time out before the time delay became energized. A contributing cause existed in that the engineering review of the design change package which replaced the safety related temperature controllers did not identify the increased drop out time of the new controllers and their effect in the circuit with respect to the time delay relays in the units. This event did not compromise the health and safety of the public.

REQUIRED NUMBER OF DIGITS/CHARACTERS  
FOR EACH BLOCK

BLOCK NUMBER	NUMBER OF DIGITS/CHARACTERS	TITLE
1	UP TO 46	FACILITY NAME
2	8 TOTAL 3 IN ADDITION TO 05000	DOCKET NUMBER
3	VARIES	PAGE NUMBER
4	UP TO 76	TITLE
5	6 TOTAL 2 PER BLOCK	EVENT DATE
6	7 TOTAL 2 FOR YEAR 3 FOR SEQUENTIAL NUMBER 2 FOR REVISION NUMBER	LER NUMBER
7	6 TOTAL 2 PER BLOCK	REPORT DATE
8	UP TO 18 -- FACILITY NAME 8 TOTAL -- DOCKET NUMBER 3 IN ADDITION TO 05000	OTHER FACILITIES INVOLVED
9	1	OPERATING MODE
10	3	POWER LEVEL
11	1 CHECK BOX THAT APPLIES	REQUIREMENTS OF 10 CFR
12	UP TO 50 FOR NAME 14 FOR TELEPHONE	LICENSEE CONTACT
13	CAUSE VARIES 2 FOR SYSTEM 4 FOR COMPONENT 4 FOR MANUFACTURER NPRDS VARIES	EACH COMPONENT FAILURE
14	1 CHECK BOX THAT APPLIES	SUPPLEMENTAL REPORT EXPECTED
15	6 TOTAL 2 PER BLOCK	EXPECTED SUBMISSION DATE

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Waterford Steam Electric Station Unit 3	05000 382	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 11
		94	-- 008	-- 00	

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

REPORTABLE OCCURRENCE

On May 3, 1994, Engineering identified a circuitry problem involving the response times of the temperature controller (EIIS Identifier TC) and time delay relays (EIIS Identifier RLY-2) for the ESF filtration unit heaters (EIIS Identifier V-EHTR). The set points for the time delay relays and the drop out time of the temperature controller contacts were such that the heaters would not re-energize automatically after a loss of power; instead, the heaters would have to be reset manually. Heating coils are provided in the various filtration units to reduce the relative humidity of the charcoal filter bed (the low relative humidity is necessary to ensure that the radioactive iodine is removed from the process stream with the appropriate efficiency). Absent manual operator action, the failure of the heater coils to energize automatically after a loss of power will cause the filtration unit to trip (after a 400 second time delay) on low filter differential temperature. This condition affected the ESF filtration systems (EIIS Identifier V) which are provided to limit the radiological consequences of postulated accidents.

The affected systems include the Shield Building Ventilation System (SBVS; EIIS Identifier VC), the Control Room Air Conditioning System (CRACS; EIIS Identifier VI), the Controlled Ventilation Area System (CVAS; EIIS Identifier VF) and the Fuel Handling Building Ventilation System (FHBVS; EIIS Identifier VG). Technical Specifications 3.6.6.1, 3.7.6, 3.7.7 and 3.9.12 require two independent ventilation trains (A and B) to be operable. The SBVS and CVAS must be operable in Modes 1,2,3 and 4, while the CRACS must be operable in all modes. The FHBVS must be operable whenever irradiated fuel is in the spent fuel pool.

**LICENSEE EVENT REPORT (LER)**  
**TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (4)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Waterford Steam Electric Station Unit 3	05000 382	94	008	00	3 OF 11

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

The temperature controllers for (SBVS) SBV-A, (CRACS) HVC-A & B, (FHBVS) VF-A & B, and (CVAS) HVR-A & B, were replaced between 12/92 and 4/93, and the temperature controller for (SBVS) SBV-B was replaced in 10/92. With the exception of CRACS controllers, the response time problem potentially existed since those replacements.

Given the information described above, this event is reportable as a 30-day Licensee Event Report (LER) on the basis of the following:

10CFR 50.73 (a)(2)(i) - operation or condition prohibited by the plant's Technical Specifications (TSs) since the affected filtration units were not operable as required by the TSs.

10CFR 50.73 (a)(2)(ii) - the event or condition resulted in the plant being in a condition that was outside of the design basis of the plant since the conditions might have reduced the effectiveness of one of the principle safety barriers for preventing the release of fission products to the environment.

10CFR 50.73 (a)(2)(v) - any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident and/or control the release of radioactive material since post-accident doses could increase off-site (by means of unfiltered leakage from containment to the annulus to the environment) and in the control room (by means of unfiltered recirculation flow).

**LICENSEE EVENT REPORT (LER)**  
**TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Waterford Steam Electric Station Unit 3	05000 382	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 11
		94	- 008 -	00	

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

10CFR 50.73 (a)(2)(vii) - any event where a single cause or condition caused at least one independent train or channel to become inoperable in multiple systems or two independent trains or channels to become inoperable in a single system designed to mitigate the consequences of an accident in that a single design condition resulted in both trains of multiple ESF filtration systems being inoperable.

**INITIAL CONDITIONS**

Plant Power 100%

Plant Operating Mode: Mode 1

Procedures Being Performed Specific to This Event: None

Technical Specification LCO's in Effect Specific to this Event: None

Major Equipment Out of Service Specific to this Event: None

**EVENT SEQUENCE**

On March 16, 1994, Waterford 3 was in the process of Refueling Outage 6 and performed Surveillance Procedure OP-903-116, Train B Integrated Emergency Diesel Generator / Engineering Safety Features Test. During the conduct of OP-903-116 for Train B Safety Injection Actuation Test with concurrent Loss of Offsite Power (LOOP), the SBVS and CVAS ESF filtration units tripped after 400 seconds due to low heater differential temperature. However, based upon input from Systems Engineering regarding load calculations of the CVAS-B and SBV-B heaters, the overall test surveillance prescribed by

**LICENSEE EVENT REPORT (LER)  
 TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Waterford Steam Electric Station Unit 3	05000 382	94	008	00	5 OF 11

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

OP-903-116 was successful in accordance with required acceptance criteria.

On April 4, 1994, Surveillance Procedure OP-903-115, Train A Integrated Emergency Diesel Generator / Engineering Safety Features Test was performed for Train A Safety Injection Actuation Test with concurrent Loss of Offsite Power (LOOP). The overall test surveillance prescribed by OP-903-115 was successful in accordance with the required acceptance criteria. Upon consideration of the filtration unit performance during these two surveillances, Operations requested that Engineering review the control circuitry of the SBVS and the CVAS.

On May 3, 1994, Engineering identified a circuitry problem involving the response times of the temperature controller and time delay relays for the ESF filtration unit heaters. The set points for the time delay relays and the drop out time of the temperature controller contacts were such that the heaters would not re-energize automatically after a loss of power; instead, the heaters would have to be reset manually.

Upon investigation, it was determined that the original safety related temperature controllers in the ESF filtration units had been replaced under Design Change (DC) 3292 due to calibration difficulties associated with the wide range and excessive deadband inherent to the original controllers. Qualified replacement temperature controllers with a smaller operating range and tighter deadband were installed for the (SBVS) SBV-B unit heater in 10/92, and the (SBVS) SBV-A and the FHBVS, CRACS and CVAS filtration unit heaters between 12/92 and 4/93.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Waterford Steam Electric Station Unit 3	05000 382	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	6 OF 11
		94	- 008 -	00	

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

The as found response times for the existing temperature controllers and time delay relays indicated that the response time conflict existed for the SBVS, CVAS and (FHBVS) HVF-B filtration unit heaters since the replacements under DC-3292. The as found response times for the CRACS temperature controllers and time delay relays indicate that a conflict did not exist for the affected filtration unit heaters, and the existing (FHBVS) HVF-A configuration was not tested.

The temperature controller for (SBVS) SBV-B tested satisfactorily after installation in 10/92. The (SBVS) SBV-B relay was calibrated in 1/93 and the response time conflict has apparently existed since that calibration.

**CAUSAL FACTORS**

An investigation concerning this event is currently in progress in association with Condition Report (CR) number 94-471. Upon completion of this investigation, a revised Licensee Event Report (LER) incorporating the conclusions of that investigation will be submitted.

The preliminary root cause of this event is believed to be inadequate design information which did not identify the timing function of the original temperature controller and the requirement for the controller to time out before the time delay relay. The vendor technical manual for the unit did not note the importance of the timing relationship between the temperature controller and the time delay relay. In addition, the wiring drawing for the heater control panel did not indicate the timing requirement for the originally installed temperature controller. As such, the design change failed to incorporate the required timing function of the replacement temperature controllers.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Waterford Steam Electric Station Unit 3	05000 382	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	7 OF 11
		94	- 008	- 00	

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

A contributing cause existed in that the engineering review of the design change package which replaced the safety related temperature controllers did not identify the increased drop out time of the new controllers and their effect in the circuit with respect to the time delay relays in the units.

**IMMEDIATE CORRECTIVE MEASURES**

Upon identification of the circuitry problem with the ESF filtration unit heaters on May 3, 1994, Operations issued Standing Instruction 94-004 to manually reset the heaters on the SBVS, CVAS, and CRACS filtration unit following a loss of offsite power. In addition, Engineering initiated Condition Report (CR) number 94-471.

CI 291370/WA 01123753 was initiated to examine the as found response times for the temperature controller and the time delay relay for the (SBVS) SBV-B unit. The results of the examination indicated that the time delay relay would actuate before the temperature controller contact dropped out, causing the ESF filtration unit to trip after 400 seconds on low heater differential temperature following a loss of offsite power.

Site Directive W4.101 was entered to evaluate the non conformance/ indeterminate condition of the ESF filtration unit heaters. Upon completion of the analysis, a one hour notification to the NRC was made.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Waterford Steam Electric Station Unit 3	05000 382	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	8 OF 11
		94	-- 008	-- 00	

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

Temporary Alteration Request (TAR) 94-016 was initiated to increase the set points of the time delay relays for the SBVS, CRACS and CVAS filtration unit heaters. The FHBVS filtration unit heaters were declared out of service.

On May 4, 1994, CI 291373/WA 01123754 was initiated to install TAR 94-016 and obtain as found response times of the temperature controllers and time delay relays for the SBVS, CRACS and CVAS filtration unit heaters. The as found response times for the temperature controllers indicated that the SBVS and CVAS filtration unit heaters would not have re-energized automatically after a loss of power and would have to be manually reset.

On May 5, 1994, Setpoint Change 94-006 was initiated to revise the Setpoint Database to increase the setpoint values for the time delay relays in the SBVS, CVAS, FHBVS and CRACS filtration unit heaters.

In addition, two warehouse supply temperature controllers, of the same type as those originally installed in the ESF filtration unit heaters, were satisfactorily tested for response time relative to time delay relay. Test results demonstrate that the circuitry problem did not exist prior to the implementation of DC-3292.

Preventive maintenance (PM) tasks 021270 and 021271 were initiated for the two CRACS filtration unit heaters. The other six ESF filtration unit heaters had previously been included in the PM program.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Waterford Steam Electric Station Unit 3	05000 382	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	9 OF 11
		94	008	00	

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

On May 11, 1994, TAR 94-017 was initiated to increase the setpoint of the (FHBVS) HVF-B filtration unit time delay relay. (FHBVS) HVF-A was not included in the TAR because the heater control panel of this unit contains a different time delay relay than the other ESF filtration unit heaters. The (FHBVS) HVF-A time delay relay was replaced under Revision 0 of SPEER 9301132.

On May 12, 1994, CI 291373/ WA 01123754 was used to install TAR 94-017 and obtain as found response times for the temperature controller and time-delay relay for the (FHBVS) HVF-B filtration unit heater. The as found response time for the time delay relay indicated that the (FHBVS) HVF-B filtration unit heater would not have re-energized automatically after a loss of power and would have to be manually reset.

On May 18, 1994, SPEER 9301132 was revised to replace the time delay relay in (FHBVS) HVF-A filtration unit heater control panel and any time delay relay of the other filtration units heaters should they fail.

**ACTIONS TO PREVENT RECURRENCE**

The vendor design drawing will be annotated to indicate the timing relationship between the temperature controller and the time delay relay.

The tasks for calibration of the time delay relays for the ESF filtration unit heaters will be revised to reflect a calibration frequency of 18 months (between refueling outages).

**LICENSEE EVENT REPORT (LER)**  
**TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Waterford Steam Electric Station Unit 3	05000 382	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	10 OF 11
		94	- 008	- 00	

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

The Engineering staff will be required to review this event, and will be made aware via continuing training of subtle changes in control circuitry which can affect system operation. In addition, Engineering will evaluate the need for procedural improvements to note such subtle equipment characteristics.

These corrective actions shall be completed by July 29, 1994.

Additional corrective actions may be scheduled upon completion of the investigation concerning this event. A revised LER incorporating the conclusions of that investigation will be issued by July 2, 1994.

**SAFETY SIGNIFICANCE**

The ESF ventilation fans are interlocked with the heaters so that if the heaters are not on, the trains will trip after 400 seconds due to low heater differential temperature. If the fans trip, then offsite and Control Room radiological dose during a design basis accident could increase above the currently calculated value. Without the ventilation fans, the Shield Building Annulus pressure would increase above atmospheric pressure. Leakage from containment would be unfiltered and would release directly to the atmosphere. This direct release could have significant impact on the accident doses.

**LICENSEE EVENT REPORT (LER)**  
**TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Waterford Steam Electric Station Unit 3	05000 382	94	- 008	- 00	11 OF 11

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

Based on very conservative licensing basis assumptions, it is expected that the offsite dose acceptance criteria would have been exceeded for the design basis event. However, use of a more realistic, best estimate atmospheric dispersion factor results in a tenfold reduction of the offsite dose compared to the worst case dispersion factor. Also, the release of core fission products over time as the event progresses (as specified in NUREG-1465 and approved for advanced reactors) would also reduce the offsite dose compared to the licensing basis assumption that all core fission products are released at the start of the event. By considering these more realistic assumptions, including postulated operator action to restore the ventilation systems by resetting the relays at 30 minutes after the start of the event, it is expected that the calculated offsite dose would be less than the 10CFR100 criteria. As such, this event did not compromise the health and safety of the general public or plant personnel.

**SIMILAR EVENTS**

There have been no similar events reported as LERs.