NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), 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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
WATERFORD STEAM ELECTRIC STATION UNIT 3	05000 382	1 OF 5

TITLE (4)

INADEQUATE SURVEILLANCE TESTING OF RELAY CONTACTS IN SAFETY-RELATED LOGIC CIRCUITS

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 NAME	DOCKET NUMBER
									N/A	05000
11	13	97	97	029	00	12	15	97	FACILITY NAME: N/A	DOCKET NUMBER: 05000

OPERATING MODE (9)	1
POWER LEVEL (10)	100

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

	20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)
	20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)
	20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)
	20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)
	20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)
	20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)

	50.73(a)(2)(viii)
	50.73(a)(2)(x)
	73.71
	OTHER
	Specify in Abstract below or in NRC Form 366A

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
T.J. GAUDET, LICENSING MANAGER	(504) 739-6666

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 15 single-spaced typewritten lines) (16)

On November 13, 1997, with the plant in mode 1 at 100% power, it was determined that an ESFAS relay contact in each of the following safety-related logic circuits was not tested under existing test procedures: 1) Charging Pump A(B)(AB), 2) CAR-201 Valve A(B) and 3) HVC-103 Damper A(B). The root cause of the condition was an inadequate surveillance procedure (OP-903-094). The procedure has subsequently been revised and the applicable contacts have been tested, with the exception of one contact (associated with Charging Pump AB) for which testing is pending performance of scheduled Emergency Diesel Generator 'A' subgroup relay testing. The contacts that were tested were found to function properly.

LER 97-014 (Revisions 00 and 01) reported a similar condition associated with, recently completed, Generic Letter (GL) 96-01 reviews. The relay contacts currently being reported were inadvertently not identified and/or tested during the GL review effort due to inadequate design documents and human performance deficiencies. The inadequate design documentation will be corrected and the isolated incorrect assumption made by a reviewer has been clarified with the reviewer. ESFAS relay contact listings have been independently compiled and are being compared with GL 96-01 review documentation to ensure that all ESFAS relay contacts are accounted for. This condition did not compromise the health and safety of the general public.

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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

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WATERFORD STEAM ELECTRIC STATION UNIT 3	05000 382	97	-- 029	-- 00	2 OF 5

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

REPORTABLE OCCURRENCE

On November 13, 1997, it was determined that Engineered Safety Features Actuation Signal (ESFAS) relay contacts in safety-related logic circuits (described below) were not being tested under existing test procedures. These contacts were not identified and/or tested during the recently completed Generic Letter 96-01 reviews. The failure to verify the contact operability is reportable pursuant to 10CFR50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications (TS).

INITIAL CONDITIONS

At the time of discovery, on November 13, 1997, Waterford 3 was operating in Mode 1 at approximately 100% power. No major systems, structures or components were out of service specific to this condition. In addition, no Technical Specification Limiting Conditions for Operation were in effect specific to this condition.

EVENT DESCRIPTION

The November 13, 1997, reportable occurrence involved:

1) the failure to verify operability of ESFAS relay [RLY] K209A(B) Containment Isolation Actuation Signal (CIAS) contact [between terminals 26-662 and 26-663] in a safety-related circuit that is required to operate upon receipt of a CIAS signal to close Containment Atmosphere Release (CAR) Valve CAR-201 A(B),

2) the failure to verify operability of ESFAS relay [RLY] K103A(B) Safety Injection Actuation Signal (SIAS) contact [between terminals 12-217 and 12-218] in a safety-related circuit that is required to operate upon receipt of a SIAS to close Control Room Heating, Ventilation and Air Conditioning (HVC) Damper HVC-103 A(B),

3) the failure to verify operability of ESFAS relay [RLY] K108A(B) (SIAS) contact [between terminals 15-573 and 15-574] in a safety-related circuit that is required to operate to block low suction pressure and/or low lube oil pressure trips on Charging Pump A(B), and

4) the failure to verify operability of ESFAS relay [RLY] K110A(B) (SIAS) contact [between terminals 16-653 and 16-654] in a safety-related circuit that is required to operate upon a SIAS to block low suction pressure and/or low lube oil pressure trips of Charging Pump 'AB' if the pump is selected to replace Charging Pump A(B).

Existing test procedures did not provide for testing the above listed contacts. However, operability of the end devices was verified via testing of other contacts.

On November 13, 1997, at 1500, Operations declared Charging Pumps 'A', 'B', and 'AB' inoperable and entered Technical Specifications (TS) 3.1.2.4, "Charging Pumps - Operating", TS 3.1.2.2, "Flow Paths - Operating" and TS 3.0.3 due to all three charging pumps being inoperable (pending satisfactory test results). TS 4.0.3 was invoked. Also at 1500, Operations declared CAR Valve 201A(B) inoperable and entered TS 3.6.3, "Containment Isolation Valves". Operations declared HVC-103 Damper A(B) inoperable, entered TS 3.7.6.3b, "Control Room Air Temperature" and invoked TS 4.0.3.

Existing surveillance procedures (OP-903-094 and OP-903-068) were changed and approved to support testing of the affected contacts.

On November 14, 1997, at 0335, after successful completion of test procedure OP-903-094, Revision 9, Change 4, ESFAS Subgroup Relay Test - Operating, Train 'B' sections (7.34 and 7.41) for Charging Pump 'B', HVC 103B, and HVC-312B, Operations declared Charging Pump 'B' and HVC-103B operable. TS 3.0.3, TS 4.0.3 and TS 3.7.6.3b were exited, while still complying with TS 3.1.2.2, TS 3.1.2.4, and TS 3.7.6.3a. At 0353, the Train 'A' sections of OP-903-094 were satisfactorily completed for

Charging Pump 'A', HVC 103A, and HVC-312A. At 0410, Charging Pump 'A' and HVC-103A were declared operable. TS 3.1.2.2, TS 3.1.2.4 and TS 3.7.6.3a were exited. Charging Pump 'AB' remains inoperable pending testing of contact K110A [between Terminals 16-653 and 16-654], which will be tested during the scheduled Emergency Diesel Generator 'A' Subgroup Relay Test.

The applicable CAR Valve 201A(B) circuit contact has been successfully tested. However, both Trains of the valve remain inoperable pending further evaluation of a separate issue. In the meantime, the valves are being maintained in the closed position (safe condition).

CAUSAL FACTORS

The root cause for initially not testing the contacts was inadequate surveillance test procedures. The surveillance test procedures did verify operation of the end devices through the testing of other contacts. However, the procedures failed to verify the proper functioning of the untested contacts.

The failure to identify these contacts during the Generic Letter 96-01 reviews was due to inadequate design documents and human performance deficiencies as follows. In the case of the K209 contacts, a drawing depicting a summary of K209 relay contacts (B424 sheet 3009) did not list the contacts associated with the CAR 201 Valves (inadequate design documents). In the case of the K103 contacts, the HVC-103 Dampers were identified in a review report 'attachment' and were missed by procedure writers and reviewers (human performance). In the case of the K108/K110 contacts, the error on the part of the reviewer is attributed to an incorrect assumption (human performance). Based on observed quality and quantity of work performed by the individual involved and the limited nature of application of the assumption, this is considered to be an isolated case.

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

CORRECTIVE MEASURES

The deficient surveillance test procedures (OP-903-094 and OP-903-068) have been changed to incorporate testing of the affected contacts.

Document Revision Notice I-9704471 has been processed to correct the design document (B424 sheet 3009).

A list of ESFAS relay contacts and their associated function has been compiled independent of the GL 96-01 review documentation. This list is being compared with documentation compiled during Generic Letter 96-01 reviews. This will ensure that all ESFAS relay contacts are accounted for.

Clarifications have been made with the reviewer concerning the appropriate assumption for the condition reviewed.

SAFETY SIGNIFICANCE

Unverified operability of the subject contacts did not impact nuclear safety since the contacts (thus far) have successfully passed the surveillance tests (one contact remains to be tested). The contacts tested would have performed or supported the applicable safety functions if an accident had occurred. Pending receipt of test results of the remaining contact, there was no impact upon the health and safety of the general public or employees at the plant.

SIMILAR EVENTS

LER 97-014, Revisions 00 and 01, dated July 3, 1997, and August 28, 1997, respectively, documented deficiencies in testing of logic circuits which were identified during Generic Letter 96-01 reviews and evaluations. The root cause for that event was inadequate surveillance procedures.