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W3F1-97-0019

A4.05

PR

February 27, 1997

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-97-001-00 for Waterford Steam Electric Station Unit 3. This Licensee Event Report is submitted in accordance with 10 CFR 50.73(a)(2)(i)(B).

Very truly yours,

T.R. Leonard  
General Manager  
Plant Operations

TRL/WDM/tjs  
Attachment

9703040259 970227  
PDR ADOCK 05100382  
S PDR

cc: E.W. Merschoff, NRC Region IV  
C.P. Patel, NRC-NRR  
A.L. Garibaldi  
J.T. Wheelock - INPO Records Center  
R.B. McGehee  
N.S. Reynolds  
NRC Resident Inspectors Office  
Administrator - LRPD

040093



## LICENSEE EVENT REPORT (LER)

(See reverse for required number of  
digits/characters for each block)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 (C150-  
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)

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TITLE (4)

REG. GUIDE 1.97 CONTAINMENT ISOLATION VALVE POSITION INDICATION

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
01	29	97	97	001	00	02	27	97	N/A	05000
									N/A	05000
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
1		20.2201(b)			20.2203(a)(2)(v)			<input checked="" type="checkbox"/> 50.73(a)(2)(i)		50.73(a)(2)(viii)
POWER LEVEL (10)		100			20.2203(a)(1)			50.73(a)(2)(ii)		50.73(a)(2)(x)
					20.2203(a)(2)(i)			50.73(a)(2)(iii)		73.71
					20.2203(a)(2)(ii)			50.73(a)(2)(iv)		OTHER
					20.2203(a)(2)(iii)			50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
					20.2203(a)(2)(iv)			50.73(a)(2)(vii)		

## LICENSEE CONTACT FOR THIS LER (12)

NAME

T.J. GAUDET, LICENSING MANAGER

TELEPHONE NUMBER (Include Area Code)

(504) 739-6666

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

## SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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## ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

Per Technical Specification (TS) 3.3.3.6, Category 1 containment isolation valves are required to have a minimum of 1 channel of position indication available per valve (less than the minimum operable channels is allowed for a time period not to exceed 48 hours). Pursuant to the bases for TS 3.3.3.6, this position indication will be consistent with the recommendations of Regulatory Guide (RG) 1.97. From June 11, 1996, to June 14, 1996, Emergency Feedwater (EFW) Flow Control Valve (FCV), EFW-224A (see Figure 1, attached), was relied upon for containment isolation for a period of 62.5 hours. The position indication for EFW-224A does not meet the requirements of Regulatory Guide (RG) 1.97 in that it does not have "direct" position indication. Therefore, EFW-224A should not have been credited as a containment isolation valve (CIV). Licensing Document Change Request 97-0110, approved on January 9, 1997, revised the Technical Requirements Manual and Final Safety Analysis Report to ensure the FCVs are no longer relied upon as CIVs. This event did not compromise the health and safety of the public.

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

## REPORTABLE OCCURRENCE

Pursuant to Technical Specification (TS) Table 3.3-10, Accident Monitoring Instrumentation (EIIIS Identifier - PI), containment isolation valves (CIV; EIIIS Identifier - ISV) governed by TS 3.6.3, "Containment Isolation Valves," shall have as a minimum, one channel of operable position indication. TS 3.3.3.6, Action 30, directs that with the number of operable channels less than required, either restore the inoperable channel(s) to operable status within 48 hours or be in at least hot shutdown within the next 12 hours. The bases for TS 3.3.3.6 states that this indication is consistent with the recommendations of Regulatory Guide (RG) 1.97 (i.e., "direct" position indication). Contrary to that requirement, Emergency Feedwater (EFW; EIIIS Identifier - BA) Flow Control Valve (FCV; EIIIS Identifier - FCV), EFW-224A (see Figure 1, attached), was relied upon for containment (EIIIS Identifier - NH) isolation for greater than 48 hours without having qualified position indication. In accordance with 10CFR50.73(a)(2)(i)(B), this event is reportable as a condition prohibited by TS.

## INITIAL CONDITIONS

At the time this condition was identified, Waterford 3 was operating in Mode 1 at approximately 100 percent power. No major equipment was out of service specific to this event and no TS Limiting Conditions for Operation (LCO) were in effect specific to this event.

## EVENT DESCRIPTION

The Waterford 3 Final Safety Analysis Report (FSAR) Table 6.2-32 originally indicated that the EFW FCV's were not required to meet General Design Criteria (GDC) 55 through 57. Licensing Document Change Request (LDCR) 95-0071, which was approved on May 12, 1995, made a change to FSAR Table 6.2-32 stating that the EFW Isolation and FCV's meet the requirements of the Standard Review Plan (SRP) 6.2.4, Containment Isolation System. These valves have always been subject to the requirements of TS 3.6.3 allowing either of these series valves to meet the isolation

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requirements. This change credited the Secondary System as a closed system inside containment pursuant to GDC 57 and allowed either of the EFW series isolation and/or control valves to provide the second isolation barrier. The intent of this change was to promote safety such that an EFW flow path would not have to be isolated with only one of the two series valves inoperable.

In September 1995, during corrective actions associated with Licensee Event Report (LER) 95-004, the Operations procedure coordinator requested Design Engineering/Electrical (DE/E) to address whether or not the valve operator controller indication for FCVs EFW-223A(B) and EFW-224A(B) could be used for positive indication of containment isolation. It was decided that this type of indication may be acceptable if there was secondary indication of valve operation available. Confirmation of the valve operation can be obtained from monitoring steam generator level and EFW flow. Based upon the above, it was determined that the EFW FCVs contained adequate position indication.

On November 1, 1995, LDCR 95-0135 was approved which revised the FSAR to remove EFW-223A(B) and EFW-224A(B) from FSAR Table 7.5-3 as RG 1.97 CIVs. Although the valves were believed to have adequate position indication, they were removed on the basis that the seven day Allowed Outage Time (AOT) per TS 3.3.3.6 is bounded by the 72-hour AOT for the EFW TS, 3/4.7.1.2. This basis has since been determined to be flawed; the AOT for TS 3.3.3.6 is 48 hours and not 7 days.

As documented in NRC Inspection Report No. 50-382/96-202, "Engineering Inspection at Waterford 3," dated December 13, 1996, the inspection team determined that for EFW-223A(B) and EFW-224A(B) to be considered as CIVs, they should have either qualified position indications in the control room, or some alternative way of verifying the valve position indication. The report went on to say that these valves do not have such position indications or any approved alternative method of determining valve position. Thus, these valves are not acceptable CIVs. The team concluded that the 10CFR50.59 evaluation performed for LDCR 95-0071 was inadequate to demonstrate that an unreviewed safety question did not exist.



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Waterford 3 believed that, although the requirements of RG 1.97 were not met, EFW-223A(B) and EFW-224A(B) had indirect and secondary indications of position which met the intent of the TS for Operability. While this position may have been acceptable for an Operability argument, it was re-evaluated from a verbatim TS compliance standpoint after discussions with the NRC and with Waterford 3 management and was determined to be reportable on January 29, 1997.

A review of the Equipment Out of Service history for the EFW isolation valves revealed one instance where EFW-224A was relied upon for containment isolation for greater than 48 hours. From 1249 hours on June 11, 1996, to 0310 hours on June 14, 1996, a period of approximately 62.5 hours. TS 3.3.3.6, Action 30 states, "with the number of OPERABLE accident monitoring channels less than the minimum channels OPERABLE requirements of Table 3.3-10; either restore the inoperable channel(s) to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours." The position indication for EFW-224A does not meet the requirements of RG 1.97. Therefore, the EFW-224A containment penetration did not have adequate position indication for longer than the 48-hour AOT of TS 3.3.3.6.

There were no manual or automatic safety system actuations as a result of this event. There were no safety systems nor components with multiple functions rendered inoperable as a result of this event.

## CAUSAL FACTORS

The scope of TS 3.6.3 is based on the requirements of GDC 55-57 for containment isolation. It is unclear why the EFW FCVs were included in the original TS 3.6.3 table of CIVs, given that the subject penetrations are GDC 57 penetrations and require only one isolation valve. Since the FCVs were included in TS 3.6.3, however, the root cause of this issue is believed to be that Waterford 3's RG 1.97 submittals failed to take exception for the EFW FCVs to allow credit for these valves as CIVs based on the controller output and secondary indication of valve position. Waterford 3 failed to

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provide an evaluation for the use of secondary position indication for these valves to be reviewed and approved by the NRC.

As a result of the EFW-223A(B) and EFW-224A(B) being listed in the TS table as CIVs, the following contributing causes to this event occurred:

- A missed opportunity occurred in the 10CFR50.59 evaluation performed for LDCR 95-0071 in that it did not consider position indication when stating that all eight EFW FCV and Isolation valves met the requirements for CIVs.
- Another missed opportunity occurred when an incorrect judgment was made that the EFW FCVs had adequate position indication rather than requesting a RG 1.97 exception for these valves.
- The 10CFR50.59 performed in October 1995, for the removal of EFW-223A(B) and EFW-224A(B) from FSAR Table 7.5-3 was incorrectly based, in part, on the interpretation that the 72-hour EFW action is more restrictive than the 7-day Accident Monitoring Action of TS 3.3.3.6. In reality, a 48-hour action was associated with TS 3.3.3.6.

## CORRECTIVE ACTIONS

1. Condition Report 96-1658 was generated on October 23, 1996, to enter this event into the corrective action program.
2. Operations department Standing Instruction 96-019 was issued with the following recommendations:

If EFW-228A(B) or EFW-229A(B) become inoperable, the associated path shall be isolated in accordance with Technical Specification 3.6.3. Credit for isolation by using the associated in-line flow control valve is not acceptable. (NOTE: OP-

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100-014 no longer specifically states that alternate credit can be taken for the associated valve.)

3. LDCR 97-0110, approved on January 9, 1997, made the following changes to the FSAR and TRM:

- The following (\*) note was deleted from Table 3.6-2 of the TRM for EFW-223A(B), EFW-224A(B), EFW-228A(B) and EFW-229A(B):

Each of these isolation valves is capable of meeting the containment isolation requirements of GDC 57. Accordingly, the compensatory actions of Technical Specification 3.6.3 will apply when both valves in series are inoperable.

- The following note was added to Table 6.2-32 of the FSAR for EFW-223A(B) and EFW-224A(B):

No credit is taken for these isolation valves in meeting the requirements of GDC 55 through 57.

4. "Direct" position indication in the Control Room was confirmed for all CIVs categorized in the FSAR as RG 1.97, Category 1.
5. This event will be discussed with Engineering and Licensing personnel with emphasis placed on ensuring that information used in 10CFR50.59 evaluations is accurate and correct.

## SAFETY SIGNIFICANCE

Although "direct" position indication is not provided for the EFW FCVs, indication that the EFW isolation function has occurred, by either one or both of the valves in a path is assured via safety related EFW flow and steam generator (EIS Identifier - SG) level

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indications. The ability of EFW-223A(B) and EFW-224A(B) to perform their safety function is not affected by the operability of their respective position indicators. EFW-223A(B) and EFW-224A(B) are stroke-timed in the open and closed directions each refueling outage. During this test, an operator is stationed locally at each valve to ensure the valve strokes fully open and closed. Amendment 122 to the Waterford 3 TS was approved on February 12, 1997, which allows CIV position indication to be inoperable for 30 days.

This event did not compromise the health and safety of the public.

## SIMILAR EVENTS

- LER 95-004 was written to document a failure to perform TS surveillance requirement 4.3.3.6 for a number of RG 1.97 CIV position indicators.
- LER 88-04 was written to document that ARM-109 (EIS Identifier - JM-FSV) failed to meet the position indication operability requirement of TS 3.3.3.6.



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(REF. G-153 34. 4)

