

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
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TITLE (4)
Penetration Fire Seal Impaired Due to Error in Initial Construction

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)	
0	5	2 5 8 8 8 8		0 1 1		0	6	2 4 8 8	N/A		0 5 0 0 0	
									N/A		0 5 0 0 0	

OPERATING MODE (9) 4

POWER LEVEL (10) 0

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

20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
20.406(a)(1)(i)	50.36(e)(1)	50.73(a)(2)(v)	73.71(d)
20.406(a)(1)(ii)	50.36(e)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
20.406(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
A.L. Holder, Fire Protection & Safety Department Head	5 0 4 4 6 4 - 3 4 8 2

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) NO X

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

At 1700 hours on May 25, 1988, Waterford Steam Electric Station Unit 3 was in hot shutdown when it was determined that the fire seal for penetration VIA0179 did not conform with a standard design and was therefore impaired. The irregular seal was discovered on December 3, 1987 by utility electricians performing fire seal inspections but was determined not to be an impairment. Since it was not an impairment, the job planner did not walkdown the fire seal until May 25, 1988. He immediately notified a fire protection engineer who determined the seal was impaired. A fire watch was promptly established in accordance with Technical Specification (TS) 3.7.11. This condition has existed since initial startup, therefore the plant was in a condition prohibited by TS 3.7.11 between December 18, 1984 and May 25, 1988.

The root cause of this event was an initial design and construction error. The seal specified by the penetration list was not proper for the application and the installation did not correlate with a standard design. A station modification has been initiated to correct the seal. Since the external portion of the seal is exposed to the outside atmosphere and the internal portion is in an area with fire detection and suppression equipment the effect on the fire protection program is minimal. This event did not pose a threat to the health and safety of the public.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
			0 1 1	0 0	0 2	OF	0 5

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

At 1700 hours on May 25, 1988, Waterford Steam Electric Station Unit 3 was in hot shutdown when it was determined that the fire seal for penetration (EISS Identifier NF-PEN) VIA0179 did not conform with a tested configuration and therefore a fire impairment existed. The irregular seal was discovered on December 3, 1987 by utility electricians performing fire seal inspections. The fire seal is located on the +46 foot elevation of the Reactor Auxiliary Building (RAB) (EISS Identifier NF) where a 2 inch main steam drain line (EISS Identifier SB-DRN) penetrates the roof through an 8 inch sleeve (EISS Identifier NF-SLV). When the seal was walked down for job planning on May 25, 1988 it was determined to be a fire impairment. A fire watch was promptly established in accordance with Technical Specification (TS) 3.7.11. This condition has existed since initial plant startup, therefore the plant was in a condition prohibited by TS 3.7.11 between December 18, 1984 and May 25, 1988.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

On December 3, 1987 utility electricians were performing surveillance procedure ME-3-006 "Fire Barrier Penetration Seals" when they noticed the fire seal for penetration VIA0179 appeared to deviate from the typical design. The seal protruded above the level of the deck approximately six inches, whereas other seals are flush with the deck. Since the seal was irregular, Condition Identification (CI) 252857 was issued to investigate and correct the seal if necessary. Procedure ME-3-006 requires a CI to be initiated to correct deviations in fire seals and allows the shift supervisor to determine if a firewatch is necessary. The shift supervisor determined a firewatch was not necessary since the seal met the acceptance criteria of Procedure ME-3-006. The acceptance criteria is adequate to determine if a seal has degraded, however the procedure does not address construction to standard design or proper material selection. Penetration VIA0179 is for a main steam drain line to condenser "A" (EIIIS Identifier SG-COND) that penetrates the RAB roof from the East Wing Main Steam Isolation Valve Area to Electrical Penetration Area "B". Since the seal was not classified as an impairment it was assigned a lesser priority and the job planner did not walkdown the seal until May 25, 1988. The job planner suspected the seal may not be adequate and notified a utility fire protection engineer, who subsequently determined the seal did not conform to a standard design nor was it constructed of the proper material. The seal was immediately declared a fire impairment.

Further investigation revealed the fire seal specified by the nuclear penetration list was an eight inch silicone foam seal. The existing seal is an eight inch seal whose installation protrudes six inches above the level of the roof and is constructed of a high density leaded elastomer. Neither silicone foam or leaded elastomer is a proper material for a high temperature application next to a main steam drain line. The seal was inspected and accepted by the Architect Engineer on May 4, 1984. The Architect Engineer's inspection records were accepted as alternate surveillance completion of penetration fire seals, for the initial plant startup. The inspection met or exceeded the acceptance criteria of procedure ME-3-006 to demonstrate that no seals were degraded prior to startup. The seal had not been inspected by utility personnel.

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

The root cause of this event was an initial design and construction error as the seal was not installed with material proper for the application nor was the installation consistent with standard designs. Station Modification 3042 has been initiated to correct the seal, and is expected to be completed by August 1, 1988. Procedure ME-3-006 will be revised to require that a fire impairment be issued whenever a CI is issued for a fire seal. This action will be completed by August 1, 1988. Penetration fire seals are inspected at a rate of 10% each 18 months. If any degraded seals are located, the inspection process continues until a 10% sample with no degradation is found. Each penetration seal shall be inspected at least once each 15 years. Since plant startup, utility personnel have inspected 40% of the plant's penetration seals. There have been only two penetration seals (VIA0126 and VIA0179) discovered in a condition prohibited by TS.

Licensee Event Report 87-021 reported penetration seal VIA0126 discovered missing in August 1987. An investigation determined the seal had been inadvertently deleted from the penetration seal list prior to initial startup and was therefore never installed or inspected during walkdowns. Since the penetration is obscured on both sides it is credible that a verification walkdown would not have discovered it. A seal has been installed. Since one end of the penetration is contained within a missile shield exposed to the outside atmosphere and the other side is in an area with fire detection and suppression equipment, there was no significant impact on the fire protection program.

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

This event is felt to be of minimal impact on the Fire Protection program. Although the material was not proper for a continuous design high temperature application, because the penetration line is a drain line the seal has probably not been exposed to design high temperatures and any elevated temperature exposure has probably been sporadic rather than continuous. Inspection of the seal revealed no degradation due to high temperature. The exterior portion of the seal is exposed to atmosphere in a space where the calculated fire duration does not exceed 15 minutes. The interior side of the penetration is in an area where the calculated fire duration does not exceed 30 minutes, however this interior area is equipped with fire detection and suppression equipment. Although the seal does not conform to a standard three hour fire rated design, there is a high level of confidence the seal present would survive in a fire of the insitu combustibles present. Since no fires have occurred in or near these areas and it is unlikely that the as found configuration would have allowed a fire to spread between areas, this event did not pose a threat to the health or safety of the public.

SIMILAR EVENTS

LER 87-021

PLANT CONTACT

A.L. Holder, Fire Protection and Safety Department Head, 504/464-3482.



LOUISIANA
POWER & LIGHT / WATERFORD 3 SES • P.O. BOX 8 • KILLONA, LA 70066-0751

June 24, 1988

W3A88-0067
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QA

U.S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, D.C. 20555

SUBJECT: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
Reporting of Licensee Event Report

Attached is Licensee Event Report Number LER-88-011-00 for Waterford Steam Electric Station Unit 3. This Licensee Event Report is submitted pursuant to 10CFR50.73(a)(2)(i).

Very truly yours,

N.S. Carns
Plant Manager - Nuclear

NSC/WMC:rk

Attachment

cc: R.D. Martin, NRC Resident Inspectors Office, INPO Records Center (J.T. Wheelock), E.L. Blake, W.M. Stevenson, D.L. Wigginton

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