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Donna Jacobs
Vice President - Operations
Waterford 3

10 CFR 50.73

W3F1-2012-0044

June 4, 2012

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

Subject: Licensee Event Report 2012-003-00
Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

Entergy is hereby submitting Licensee Event Report (LER) 2012-003-00 for Waterford Steam Electric Station Unit 3. This report provides details associated with a cracked instrument line which affects the Fire Protection Program analysis.

Based on plant evaluation, it was determined that this condition is reportable under 10 CFR 50.73(a)(2)(ii) requirements.

This report contains no new commitments. Please contact Michael Mason, Licensing Manager (acting), at (504) 739-6673 if you have questions regarding this information.

Sincerely,

FOR D. JACOBS.

DJ/WH

Attachment: Licensee Event Report 2012-003-00

IE22
NRR

cc:

Mr. Elmo E. Collins, Jr. Regional Administrator U. S. Nuclear Regulatory Commission Region IV 1600 E. Lamar Blvd. Arlington, TX 76011-4511	RidsRgn4MailCenter@nrc.gov
NRC Senior Resident Inspector Waterford Steam Electric Station Unit 3 P.O. Box 822 Killona, LA 70066-0751	Marlone.Davis@nrc.gov Dean.Overland@nrc.gov
U. S. Nuclear Regulatory Commission Attn: Mr. N. Kalyanam Mail Stop O-07D1 Washington, DC 20555-0001	Kaly.Kalyanam@nrc.gov
INPO Records Center	lerevents@inpo.org

Attachment to

W3F1-2012-0044

Licensee Event Report 2012-003-00

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 10/31/2013

Estimated burden per response to comply with this mandatory information collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Waterford 3 Steam Electric Station	05000 382	1 OF 3

4. TITLE

Cracked Instrument Line Affects Fire Protection Safe Shutdown Analysis

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
04	04	2012	2012	- 003 -	00	06	04	2012	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE

1

10. POWER LEVEL

100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☒ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (*Include Area Code*)
Waterford 3 Steam Electric Station Michael Mason	(504) 739-6673

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE) ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

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

On 04/04/2012, during the conduct of a scheduled surveillance, steam leakage was observed from an instrument line associated with the steam supply to Emergency Feedwater (EFW) Pump AB. Investigation determined the leakage source as a crack in the instrument line downstream of the normally open instrument root valve. The leakage was isolated by closing the instrument root valve.

Engineering evaluation has determined that EFW Pump AB remained capable of performing its safety function. Due to the steam leak in the EFW Pump AB area, the fire protection safe shutdown manual actions could be affected which requires this to be reported under 10CFR50.73(a)(2)(ii).

REPORTABLE OCCURRENCE

On 04/04/2012, during the conduct of a scheduled surveillance, steam leakage was observed from an instrument line associated with the steam supply to Emergency Feedwater (EFW) [BA] Pump AB [P]. Investigation determined the leakage source as a crack in the instrument line downstream of the normally open instrument root valve. The leakage was isolated by closing the instrument root valve.

Engineering evaluation has determined that EFW Pump AB remained capable of performing its safety function. Due to the steam leak in the EFW Pump AB area, the fire protection safe shutdown manual actions could be affected which requires this to be reported under 10CFR50.73(a)(2)(ii)..

INITIAL CONDITIONS

During this time period, Waterford Steam Electric Station Unit 3 (Waterford 3) was operating in Mode 1, stable at or near 100% power. The Emergency Feedwater (EFW) system was aligned for normal operations with no plant protection system actuation signals present.

EVENT DESCRIPTION

While Operations personnel were performing the procedure for the EFW Pump AB operability test as a scheduled surveillance, personnel at the pump discovered that a small steam leak previously thought to be coming from the packing of manual isolation valve MS-414 (EFW Pump AB Turbine Steam Supply MS IPT8340 Root) [P] was actually emanating from a crack in the instrument line connected downstream of MS-414. The condition was reported to Control Room personnel and the decision was made to stop the surveillance. In stopping the pump and returning to standby, the EFW Pump AB turbine steam supply is isolated from Main Steam (MS) system pressure, which resulted in stopping the steam leakage.

Closer examination confirmed that the source of the steam leakage was a crack in the instrument line just downstream of valve MS-414. After consultation with Engineering, Operations supervision directed isolating the cracked instrument line by closing valve MS-414.

Operations and Engineering evaluated the status of EFW Pump AB and determined that, with the instrument line isolated, the pump was capable of performing its safety function and was operable.

The steam leak was originally identified as a packing leak on 9/6/2011.

A subsequent Engineering evaluation which considered the as-found steam leakage and location determined that personnel access to EFW Pump AB area was not assured prior to identifying the cracked instrument line.

This reported condition is entered into the site corrective action program as CR-WF3-2012-1669.

SYSTEM DESIGN

The EFW system consists of three pumps which take a common suction from the Condensate Storage Pool, discharge to a common header, and supply water to either of two Steam Generators (SGs) [HX] through redundant flow control and isolation valves. EFW Pumps A and B are 50% capacity motor driven pumps. EFW Pump AB is a 100% capacity steam turbine driven pump. EFW system controls are located both in the Control Room and in the Remote Shutdown Room. All three EFW pumps

automatically start on Emergency Feedwater Actuation Signal (EFAS) and act, along with flow control and isolation valves, to automatically maintain water level in the non-faulted steam generators [HX] to provide an adequate heat sink for residual heat removal post-trip. The system remains in standby unless actuated in response to a loss of Main Feedwater [SJ] to the SGs.

CAUSAL FACTORS

The cause of the instrument line crack is not currently known. The crack location is immediately downstream of the closed manual isolation valve MS-414. Due to the close proximity of the isolating valve and the risk of performing the line removal near the operable EFW Pump AB, the instrument line has not yet been removed for further evaluation.

CORRECTIVE ACTIONS

The following corrective actions are in place:

- EFW Pump AB was evaluated as operable with a compensatory measure. The compensatory measure is to maintain isolation valve MS-414 closed.
- The condition will remain open within the corrective action program until resolved.

SAFETY SIGNIFICANCE

There is minimal safety significance for this condition because, in evaluating past operability, there was minimal adverse affect to mitigating system functions.

Engineering evaluation has determined that the identified crack at its current size would not have resulted in there being insufficient steam available for EFW Pump AB for the evaluated time to establish shutdown cooling. It also would not have resulted in a harsh environment in the Reactor Auxiliary Building (RAB) -35 ft. el. hallway or exceeding the previously analyzed offsite dose release. Therefore, if there had been an accident, the identified crack would not have resulted in any unacceptable consequences.

As the current evaluation cannot rule out crack growth, further engineering evaluation does conclude that EFW Pump AB maintains sufficient steam supply to perform its safety function for the evaluated time to establish shutdown cooling assuming the instrument line were to part at the crack. Control Room dose and offsite dose release are minimally affected. This condition could result in limiting personnel access to the RAB -35 ft. el. hallway, but would not affect operation of EFW Pump AB.

SIMILAR EVENTS

Corrective action program data for the past three years was searched for similar failures. None were found.

ADDITIONAL INFORMATION

Energy industry identification system (EIIS) codes are identified in the text within brackets [ ].