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(Acting)

10 CFR 50.73

W3F1-2019-0019

February 18, 2019

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Subject: Licensee Event Report (LER) 2019-002-00  
Control Room Envelope Declared Inoperable due to Outside Air Intake  
Isolation Valve Exceeding Closed Stroke Time During Inservice Testing  
Resulting in Event or Condition that Could Have Prevented Fulfillment of a  
Safety Function

Waterford Steam Electric Station, Unit 3 (Waterford 3)  
NRC Docket No. 50-382  
Renewed Facility Operating License No. NPF-38

The attached report is being sent pursuant to 10 CFR 50.73.

There are no regulatory commitments contained in this correspondence.

If you have any questions or require additional information, please contact the Acting Regulatory Assurance Manager, John V. Signorelli, at (504) 739-6032.

Respectfully,

A handwritten signature in blue ink that reads "John V. Signorelli".

John V. Signorelli

JVS/rd

Enclosure: Waterford 3 Licensee Event Report 2019-002-00

cc: NRC Region IV Regional Administrator  
NRC Senior Resident Inspector – Waterford Steam Electric Station, Unit 3  
NRR Project Manager

**ENCLOSURE**

**W3F1-2019-0019**

**Entergy Operations, Inc.**

**Waterford 3 Licensee Event Report 2019-002-00**



**LICENSEE EVENT REPORT (LER)**

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form

<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

Estimated burden per response to comply with this mandatory 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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOF-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.

<b>1. Facility Name</b> Waterford Steam Electric Station, Unit 3	<b>2. Docket Number</b> 05000382	<b>3. Page</b> 1 OF 3
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**4. Title**  
Control Room Envelope Declared Inoperable due to Outside Air Intake Isolation Valve Exceeding Closed Stroke Time During Inservice Testing Resulting in Event or Condition that Could Have Prevented Fulfillment of a Safety Function

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
12	19	2018	2019	002	00	02	18	2019	FACILITY NAME	DOCKET NUMBER

9. Operating Mode	11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)			
1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
100%	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
		<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER	(Specify in Abstract below or in NRC Form 366A)

**12. Licensee Contact for this LER**

LICENSEE CONTACT John V. Signorelli - Manager, Regulatory Assurance	TELEPHONE NUMBER (Include Area Code) (504) 739-6032
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**13. Complete One Line for each Component Failure Described in this Report**

Cause	System	Component	Manufacturer	Reportable to ICES	Cause	System	Component	Manufacturer	Reportable to ICES

<b>14. Supplemental Report Expected</b> <input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date) <input checked="" type="checkbox"/> No	<b>15. Expected Submission Date</b>	Month	Day	Year
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**Abstract** (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

On December 19, 2018, at 2322 Central Standard Time (CST), the shift operating crew declared the Control Room Envelope inoperable in accordance with Technical Specification (TS) 3.7.6.1 due to valve HVC-102 exceeding its maximum allowed closed stroke time of 2.0 seconds during performance of inservice testing. The actual closed stroke time was 2.1 seconds. Valve HVC-102 is part of the Control Room Envelope. The inoperability of the Control Room Envelope resulted in an event or condition that could have prevented fulfillment of a safety function. The TS required action to implement mitigating actions was completed on December 19, 2018 at 2355 CST by placing the control room ventilation system in isolate mode.

An equipment failure evaluation determined that the cause of this event was that there was lack of lubrication in the HVC-102 valve actuator. Actions were taken to rebuild and properly lubricate the valve actuator. Following a successful inservice test of HVC-102, the Control Room Envelope was declared operable on December 27, 2018. Additional corrective action includes reviewing the maintenance procedure and vendor manual to determine if a change in the preventive maintenance task is warranted.



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

(See NUREG-1022, R.3 for instruction and guidance for completing this form  
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

Estimated burden per response to comply with this mandatory 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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to [Infocollects.Resource@nrc.gov](mailto: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.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Waterford Steam Electric Station, Unit 3	05000382	2019	- 002 -	00

**NARRATIVE**

**EVENT DESCRIPTION**

**A. Plant Status**

At the time of this event, Waterford 3 was in Mode 1 100% reactor power. There were no other structures, systems or components out of service that contributed to this event.

**B. Event Chronology**

On December 19, 2018, during scheduled inservice testing in accordance with surveillance procedure OP-903-119, "Secondary Auxiliaries Quarterly IST [Inservice Testing] Valve Tests," valve HVC-102 [ISV] exceeded its maximum allowed closed stroke time of 2.0 seconds. Actual closed stroke time was 2.1 seconds. HVC-102 is the Control Room Normal Outside Air Intake Upstream Isolation Valve and is part of the Control Room Envelope [VI]. At 2322 CST, the shift operating crew declared the Control Room Envelope inoperable in accordance with Technical Specification (TS) 3.7.6.1, "Control Room Emergency Air Filtration System." TS 3.7.6.1 requires that two control room emergency air filtration trains [VI] shall be OPERABLE. Operations entered TS 3.7.6.1 action b, which requires that with one or more control room emergency air filtration trains inoperable due to inoperable Control Room Envelope boundary in MODES 1, 2, 3, or 4, then: 1. Immediately initiate action to implement mitigating actions; 2. Within 24 hours, verify mitigating actions ensure Control Room Envelope occupant exposures to radiological, chemical, and smoke hazards will not exceed limits; and 3. Within 90 days, restore the Control Room Envelope boundary to OPERABLE status. Actions b.1 and b.2 were completed by placing the control room ventilation system in isolate mode on December 19, 2018 at 2355 CST.

This event is reportable pursuant to 10 CFR 50.73(a)(2)(v)(D), "Any event or condition that could have prevented fulfillment of a safety function of structures or systems that are needed to: (D) mitigate the consequences of an accident," due to the Control Room Envelope being inoperable.

**C. Event Causes**

An equipment failure evaluation determined that the cause of this event is that there was lack of lubrication in the HVC-102 valve operator.

**CORRECTIVE ACTIONS**

- (1) Rebuild and properly lubricate the valve actuator (complete).
- (2) Review the maintenance procedure and vendor manual to determine if a change in the preventive maintenance task is warranted (planned).



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**SAFETY EVALUATION**

HVC-102 is the Control Room Normal Outside Air Intake Upstream Isolation Valve. The valve automatically opens when either control room air handling unit is started. This valve fails closed and automatically closes upon a Safety Injection Actuation Signal, High Toxic Chemical Signal, High Radiation Signal, or when both control room air handling unit fans are not running. This valve is analyzed to close in 2 seconds or less in the safety analyses evaluating the control room boundary for a High Radiation Signal or Toxic Chemical Signal. The Inservice Testing Program tests the HVC-102 valve to show that the valve can meet the closure time limit of 2 seconds.

An analysis was performed of the impact of the increase of 0.1 seconds to the HVC-102 closure time. For this analysis, the design basis calculations supporting the safety basis for HVC-102 were reviewed. In addition, a search for other calculations or documents was performed to ensure that there are no other impacts due to the increased closure time. This search did not identify any impacts other than the design basis calculations. This analysis determined that with the increase of 0.1 seconds, the valve could still perform its safety function of maintaining control room habitability by closing to isolate normal control room ventilation. This is due to the fact that there is sufficient margin available in the design basis calculations.

Based on the above, although the Control Room Envelope was declared inoperable per TS 3.7.6.1, engineering analysis later determined that the system was capable of performing its safety function. Due to this, there were no actual consequences to general safety of the public, nuclear safety, industrial safety or radiological safety for these events.

**PREVIOUS OCCURRENCES**

A review of the Waterford 3 corrective action program and previous Licensee Event Reports for the previous 3 years revealed no similar events as described in NUREG-1022 guidance.

Energy Industry Identification System (EIIS) codes and component codes are identified in the text as [XX].