Nuclear Operating Company
South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

September 9, 2021
NOC-AE-21003833
10 CFR 50.73
STI: 35208185

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

South Texas Project
Unit 2
Docket No. STN 50-499
Licensee Event Report 2021-001-00 Condition Prohibited by Technical Specifications Due to Inoperable Containment Isolation Valve

Pursuant to 10 CFR 50.73(a)(2)(i)(B), STP Nuclear Operating Company submits South Texas Project (STP) Unit 2 Licensee Event Report 2021-001-00 for a condition prohibited by Technical Specifications due to an inoperable containment isolation valve. This event is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B) because the Technical Specification 3.6.3 required action statement for an inoperable containment isolation valve was not met.

The event did not have an adverse effect on the health and safety of the public.

There are no commitments in this letter.

If you should have any questions on this submittal, please contact Ali Albaaj at (361) 972-8949 or me at (361) 972-4778.

Kimberly A. Harshaw
Executive Vice President and
Acting Chief Nuclear Officer

aa

Attachment: STP Unit 2 LER 2021-001-00, Condition Prohibited by Technical Specifications Due to Inoperable Containment Isolation Valve

cc:

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
1600 E. Lamar Boulevard
Arlington, TX 76011-4511

Attachment

STP Unit 2 LER 2021-001-00, Condition Prohibited by Technical Specifications Due to Inoperable Containment Isolation Valve

NRC FORM 366 (08-2020) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

(See Page 3 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/)

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2023

1. Facility Name	2. Docket Number	3. Page
South Texas Unit 2	05000 499	1 OF 4

4. Title

Condition Prohibited by Technical Specifications Due to Inoperable Containment Isolation Valve

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Revision No.	Month	Day	Year	Facility Name	Docket Number
07	01	2021	2021	- 001 -	00	09	09	2021		05000
									Facility Name	Docket Number
										05000

9. Operating Mode	10. Power Level
1	100

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*

10 CFR Part 20	☐ 20.2203(a)(2)(vi)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(A)	**10 CFR Part 73**
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.69(g)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(4)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(i)	**10 CFR Part 21**	☑ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(1)(i)
☐ 20.2203(a)(2)(ii)	☐ 21.2(c)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(i)
☐ 20.2203(a)(2)(iii)	**10 CFR Part 50**	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)	☐ 73.77(a)(2)(ii)
☐ 20.2203(a)(2)(iv)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)	
☐ 20.2203(a)(2)(v)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)	

☐ **OTHER** (Specify here, In abstract, or NRC 366A).

12. Licensee Contact for this LER

Licensee Contact	Phone Number (Include area code)
Ali Albaaj, Licensing Engineer	(361) 972-8949

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to IRIS	Cause	System	Component	Manufacturer	Reportable to IRIS
D	WI	ISV	Valtek Inc	Y	N/A	N/A	N/A	N/A	N/A

14. Supplemental Report Expected		15. Expected Submission Date	Month	Day	Year
☑ No	☐ Yes (If yes, complete 15. Expected Submission Date)				

16. Abstract (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)

On July 1, 2021, at 2344 hours, the STP Nuclear Operating Company discovered that Steam Generator 2D outside reactor containment isolation valve FV-4150 was indicating valve closure but only reduced the flow rate by about 8.33%. On July 2, 2021, at 0350 hours, the valve was declared inoperable due to inadequate isolation. Site engineering determined on July 12, 2021, that FV-4150 was inoperable since March 29, 2021, due to preventative maintenance performed on that date. On July 3, 2021, FV-4150 was determined to be operable following a valve stem adjustment and a satisfactory performance of the surveillance test.

The causes of the event were associated with inadequate written guidance. This event is reportable because the Technical Specification 3.6.3 required action statement for an inoperable containment isolation valve was not met. Specifically, the containment isolation valve was inoperable from March 29, 2021, to July 3, 2021, for a total of 96 days. The allowed outage time is 24 hours or apply the requirements of the configuration risk management program. Planned corrective actions include revising the work instructions and the post-maintenance testing guidance.

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/)

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
South Texas Unit 2	05000- 00499	2021	- 001	- 00

NARRATIVE

I. Description of Reportable Event

A. Reportable event classification

This event is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B) because the Technical Specification 3.6.3 required action statement for an inoperable containment isolation valve was not met.

B. Plant operating conditions prior to event

Prior to the event, Unit 2 was at 100% power in Mode 1.

C. Status of structures, systems, and components that were INOPERABLE at the start of the event and that contributed to the event

No other structures, systems, or components were inoperable at the start of this event that contributed to this event.

D. Background information

The steam generator blowdown system provides the means to continuously blowdown the steam generator to maintain the prescribed water chemistry in the steam generators. The system also removes dissolved solids and corrosion products from the blowdown stream to make it suitable for reuse in the condenser hotwell.

The steam generator blowdown system is a closed system. Steam Generator 2D outside reactor containment isolation valve FV-4150 meets the requirements in General Design Criteria 57 for Closed Systems Isolation Valves. There was no open pathway between the reactor containment building and the outside.

E. Narrative summary of the event

Note: all times are Central Daylight Time

On July 1, 2021, at 2344 hours, a condition report was written documenting that during the performance of the steam generator blowdown system valve operability test, Steam Generator 2D outside reactor containment isolation valve FV-4150 local valve indication showed closed. However, the flow across the valve only reduced from about 36 klb/hr to about 33 klb/hr. On July 2, 2021, at 0350 hours, FV-4150 was declared inoperable due to inadequate isolation.

Corrective maintenance was performed on the valve on July 2, 2021. The as-found condition was described as "craft identified valve was not making contact with the valve seat." The valve stem was screwed out three turns from the marriage block, adjusting the valve stroke to bring the valve plug to the seat. This indicated the valve stroke was slightly short, not allowing the plug to contact the valve seat. FV-4150 is quick-opening, thus only a slight distance between the seat and the plug is necessary for the valve to allow a large percentage of flow through while closed.

On July 3, 2021, at 0501 hours, FV-4150 passed the steam generator blowdown system valve operability test and was declared operable. Site engineering determined on July 12, 2021, that the valve stroke length inaccuracy was the result of an actuator overhaul preventative maintenance activity that was completed on March 29, 2021, during the most recent refueling outage (2RE21). The scope of the preventative maintenance was to disassemble the actuator, replace soft parts and wom or damaged parts, measure the free length of the actuator spring, replace air filter, and reassemble. Under this preventative maintenance, the actuator stem is removed, and the stroke of the actuator is adjusted.

F. Method of discovery

This event was self-revealed when FV-4150 did not pass the quarterly surveillance test due to inadequate isolation.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
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South Texas Unit 2	05000- 00499	2021	- 001	- 00

NARRATIVE

II. Component failures

A. Failure Mode, mechanism, and effects of failed component

The failed component of this event was the steam generator 2D blowdown valve FV-4150. The valve plug was not contacting the valve seat creating a slightly short valve stroke. There were no effects on safety systems and functions due to the failed component because the steam generator blowdown system is a closed system. The steam generator blowdown valve is an outside containment isolation valve and meets the requirements of General Design Criteria 57 for Closed Systems Isolation Valves. There were no other components affected by the failed component.

B. Cause of component or system failure or personnel error

The direct cause of this event was the valve stem was seated in the marriage block short, shortening the valve stroke and not allowing the plug to contact the valve seat.

C. Systems or secondary functions that were affected by failure of components with multiple functions

There are no secondary systems or functions for this component.

D. Failed component information

Steam generator blowdown system outside reactor containment isolation valve;

4-inch ASME Section III, Class 2, quick-opening type globe valve

III. Analysis of the event

A. Safety system responses that occurred

No safety system responses occurred due to this event.

B. Duration of safety system inoperability

Steam Generator 2D blowdown outside reactor containment isolation valve FV-4150 was inoperable from March 29, 2021, to July 3, 2021, for a total of 96 days.

C. Safety consequences and implications

Valve FV-4150 is connected to the secondary side of Steam Generator 2D and not directly connected to containment atmosphere. Secondary water exiting through the blowdown line will enter the condenser hotwell and return to Steam Generator 2D as main feedwater. The steam generator blowdown system is a closed system. The steam generator blowdown valve is an outside containment isolation valve and meets the requirements of General Design Criteria 57 for Closed Systems Isolation Valves. There is no open pathway in the physical integrity of reactor containment due to an inoperable blowdown valve. This event did not result in any offsite release of radioactivity or increase of offsite dose rates, and there were no personnel injuries or damage to any safety-related equipment associated with this event. Therefore, there was no adverse effect on the health and safety of the public.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
South Texas Unit 2	05000- 00499	2021	- 001	- 00

NARRATIVE

IV. Cause of the event

The causes for this event were determined to be:

1. Vendor Technical Document work instructions do not work as written when leaving the actuator installed during actuator disassembly.
2. Post-Maintenance Testing did not include guidance to ensure valve plug was fully seated.
3. The valve remote position indicator verification test procedure assumes the local valve position indication reflects the actual (internal) valve position.

V. Corrective actions

Planned corrective actions are as follows:

1. Revise Vendor Technical Document for containment isolation valve FV-4150 to ensure the work instructions for "Reassembling the Actuator" work as written if the actuator is disassembled while on the valve in accordance with the work instructions for "Disassembling the Actuator."
2. Revise Maintenance Work Instructions to include the following post-maintenance testing guidance:

   Perform Valve Diagnostic Testing to ensure full open and close stroke of valve.

   - Verify the valve plug is fully seated in the closed position.
   - Verify correct local and remote indication of valve position in the open and closed position.

No corrective actions were determined to be necessary for Cause 3. The remote position indication and the local valve position indicator are verified accurate during post-maintenance testing under maintenance guidance via valve diagnostic testing (Cause 2). This will establish reasonable assurance of the validity of the subsequent performances of the valve remote position indicator verification test and the steam generator blowdown system valve operability test.

VI. Previous similar events

No previous similar events were identified.