



Charles Kharri
Vice President - Farley

Joseph M. Farley Nuclear Plant
7388 North State Hwy 95
Columbia, Alabama 36319
334.661.2100 tel
334.661.2512 fax

ckharri@southernco.com

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Docket No.: 50-364

NL-21-0244

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

Joseph M. Farley Nuclear Plant - Unit 2
Licensee Event Report 2020-001-01
Main Steam Safety Valve Lift Pressure Outside of
Technical Specifications Limits due to Setpoint Drift

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(i)(B), Southern Nuclear Company is submitting the enclosed Licensee Event Report supplement for Unit 2.

This letter contains no NRC commitments. If you have any questions regarding this submittal, please contact Thomas Campbell, Licensing Engineer at (334) 661-2673.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "ckharri", written over a horizontal line.

Charles Kharri
Vice President - Farley

CK/tec/cbg

Enclosure: Unit 2 Licensee Event Report 2020-001-01

Cc: Regional Administrator, Region II
NRR Project Manager - Farley Nuclear Plant
Senior Resident Inspector - Farley Nuclear Plant
RTYPE: CFA04.054

**Joseph M. Farley Nuclear Plant - Unit 2
Licensee Event Report 2020-001-01
Main Steam Safety Valve Lift Pressure Outside of
Technical Specifications Limits due to Setpoint Drift**

Enclosure

Unit 2 Licensee Event Report 2020-001-01



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/>)

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 FOIA, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to InfoCollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk air: omb_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

1. Facility Name

Joseph M. Farley Nuclear Plant, Unit 2

2. Docket Number

05000

364

3. Page

1 OF 2

4. Title

Main Steam Safety Valve Lift Pressure Outside of Technical Specifications Limits Due to Setpoint Drift

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
10	06	2020	2020	- 001 -	01	03	25	2021	Facility Name	05000
									Facility Name	Docket Number
										05000

9. Operating Mode

1

10. Power Level

095

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

<input type="checkbox"/> 10 CFR Part 20	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.46(a)(3)(II)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	10 CFR Part 73
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.69(g)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(4)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(i)	10 CFR Part 21	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(1)(i)
<input type="checkbox"/> 20.2203(a)(2)(II)	<input type="checkbox"/> 21.2(c)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(i)
<input type="checkbox"/> 20.2203(a)(2)(III)	10 CFR Part 50	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	<input type="checkbox"/> 73.77(a)(2)(II)
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.36(c)(1)(I)(A)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.36(c)(1)(II)(A)	<input type="checkbox"/> 50.73(a)(2)(III)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)	

☐ OTHER (Specify here, in abstract, or NRC 366A).**12. Licensee Contact for this LER****Licensee Contact**

Thomas Campbell, Licensing Engineer

Phone Number (Include area code)

(334) 661-2673

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
X	SB	RV	D245	Y					

14. Supplemental Report Expected☒ No ☐ Yes (If yes, complete 15. Expected Submission Date)**15. Expected Submission Date**

Month	Day	Year

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

On October 6, 2020, while in Mode 1 at 95% power level, it was discovered that a Unit 2 Main Steam Safety Valve (MSSV) failed its as-found lift pressure test. The MSSV lifted below the Technical Specification (TS) 3.7.1 allowable lift setting value. Setpoint drift due to inherit stresses created within the fabrication process of the spring is the most likely cause of the MSSV setpoint failure.

It is likely that the MSSV was outside of the TS limits longer than the allowable completion times for the associated Required Action Statements during the operating cycle in all applicable modes of operation. Therefore, this condition is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by TS.

The MSSV setpoint was adjusted to within the TS limits and returned to service restoring compliance. The MSSV that failed the surveillance setpoint test was replaced with a refurbished valve during the 2R27 refueling outage and sent to vendor for analysis.

**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/>)

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
Joseph M. Farley Nuclear Plant, Unit 2	05000- 364	YEAR	SEQUENTIAL NUMBER	REV NO.
		2020	001	01

NARRATIVE**EVENT DESCRIPTION:**

On October 6, 2020 at 1259 CDT, while operating in Mode 1 and at 95% power level, a C Loop Main Steam Safety Valve (MSSV), Q2N11V0012D [EIS:SB:RV] as-found lift pressure did not meet the acceptance criteria of +/- 3% of setpoint (1115 psig) as required by Technical Specifications (TS) Surveillance Requirement (SR) 3.7.1.1. The MSSV lifted low at 1065 psig which is 17 psig outside of its acceptance range of 1082 to 1148 psig. The +/- 3% as-found lift pressure requirement is an ASME Section III, 1971 edition, and Farley TS requirement to ensure that the MSSV provides adequate protection by preventing the steam pressure from exceeding 110% of the main steam system design pressure.

EVENT ANALYSIS:

The valve (Manufacturer: Dresser, Model Number: 3707R, Serial Number: BP09825) was sent to NWS Technologies for failure analysis due to the failed as-found test. The MSSV was disassembled, tested, and inspected. NWS Technologies identified an error in their original failure analysis report and issued a revised report in early 2021 clarifying that spring degradation was not the primary cause as previously indicated. Based on engineering review of probable causes, it was determined the most probable cause was setpoint drift due to inherit stresses created by the fabrication process of the spring.

REPORTABILITY AND SAFETY ASSESSEMENT:

This failure constitutes a condition that is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition which was prohibited by the plant's Technical Specifications." The applicable accident/transient analyses requires five MSSVs per Steam Generator [EIS:SB:SG] to provide overpressure protection for design basis transients occurring at 102% Rated Thermal Power. On October 6, 2020, MSSV Q2N11V0012D was found outside of its required setpoint range and was declared inoperable. As it is not possible to determine when the valve exceeded the allowable setpoint range, the MSSV was likely inoperable for greater than the TS allowed completion time. Based on the MSSV as-found lift setpoint being less than 110% of design Steam Generator pressure (1194 psig), and properly reseating, this one MSSV failure did not result in a loss of safety function. There was no release of radioactivity associated with this event.

CORRECTIVE ACTIONS:

The C Loop MSSV that failed the surveillance setpoint test was adjusted within tolerance and returned to operable status. The MSSV was subsequently removed from its location during the 2R27 outage for analysis and was replaced on November 6, 2020 with a refurbished valve that was heat soaked and placed in the Q2N11V0012D location at the required 1115 psig +/-1%.

PREVIOUS SIMILAR EVENTS:

A similar event was reported for Unit 2 in LER 2017-002-00.

OTHER SYSTEMS AFFECTED:

No other systems were affected by this event.