



November 21, 2018
L-2018-211
10 CFR § 50.73

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

Re: Turkey Point Unit 3
Docket No. 50-250
Reportable Event: 2018-002-00
Date of Event: September 30, 2018
As-Found Cycle 29 Main Steam Safety Valve
Setpoints Outside Technical Specification Limits

The attached Licensee Event Report 05000250/2018-002-00 is submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(B) to provide notification of the subject event.

If there are any questions, please call Mr. Robert J. Hess at (305) 246-4112.

Sincerely,

A handwritten signature in blue ink that reads 'B. Stamp'.

Brian Stamp
Plant General Manager
Turkey Point Nuclear Plant

Attachment

cc: Regional Administrator, USNRC, Region II
Senior Resident Inspector, USNRC, Turkey Point Nuclear Plant



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, 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 Turkey Point Unit 3	2. Docket Number 050000250	3. Page 1 OF 3
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4. Title
As-Found Cycle 29 Main Steam Safety Valve Setpoints Outside Technical Specification Limits

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
09	30	2018	2018	- 002	- 00	11	21	2018	N/A	05000
									Facility Name	Docket Number
									N/A	05000

9. Operating Mode 1	11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)									
	<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)						
10. Power Level 44	<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)						
	<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 type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(ii)						
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(iii)						
		<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 Olga Hanek – Licensing Engineer	Telephone Number (Include Area Code) 305-246-6607
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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	SB	RV	D243	YES					

14. Supplemental Report Expected	15. Expected Submission Date	Month	Day	Year
<input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date) <input checked="" type="checkbox"/> No				

Abstract (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

On September 30, 2018 Turkey Point Unit 3 was in Mode 1 and holding at approximately 44 percent reactor power while performing Technical Specification surveillance testing on the Main Steam Safety Valves (MSSVs) setpoints, just prior to the Unit 3 Cycle 30 Refueling Outage.

The Unit 3 C steam generator MSSV RV-3-1410 and B steam generator MSSV RV-3-1406 as found setpoints were below the Technical Specification allowable setpoint pressure of +/- 3% design pressure. All remaining MSSVs were tested as part of the required sample expansion. The as-found setpoint pressure of the B steam generator MSSVs RV-3-1407 and RV-3-1408, and C steam generator MSSV RV-3-1412 exceeded the +/- 3% design pressure.

The cause of the failure to meet TS allowable setpoints for RV-3-1410 and RV-3-1406 was attributed to setpoint drift due to minor spring relaxation. The cause of the failure to meet TS allowable setpoints for RV-3-1407, and RV-3-1408 was attributed to some form of friction or binding. RV-3-1410 and RV-3-1406 were adjusted to within +/-1% design pressure and returned to operable status. The cause of the failure to meet TS allowable setpoints for RV-3-1412 was attributed to setpoint variance. RV-3-1407, RV-3-1408, and RV-3-1412 were sent offsite for overhaul and replaced with four spares with as-left setpoints verified to be within the +/- 1% of design pressure as required by TS 3.7.1.1.

Operation of the facility with the MSSVs as-found settings was within analytical bounds; therefore, this event had no impact 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.
Turkey Point Unit 3	05000-250	2018	- 002	- 00

NARRATIVE

Event Description

On September 30, 2018 Turkey Point Unit 3 was in Mode 1 and holding at approximately 44 percent reactor power while performing Technical Specification surveillance testing on the Main Steam Safety Valves [EISS:SB:RV] setpoints, just prior to the Unit 3 Cycle 30 Refueling Outage.

The as-found setpoint pressure of the Unit 3 C steam generator Main Steam Safety Valve (MSSV) RV-3-1410 was 1049 psig, which was 3.32% below the Technical Specification (TS) allowable setpoint pressure of +/- 3% of 1085 psig. RV-3-1410 was declared inoperable at 12:06 and the unit entered TS 3.7.1.1.b, which requires the valve be restored to operable status within 4 hours or the power level must be reduced to 44% of rated thermal power. Since the unit was at 44% rated power level, no power changes were required to comply with TS 3.7.1.1.b. RV-3-1410 was subsequently adjusted to lift within +/-1% of its respective setpoint pressure and declared operable at 12:54.

The as-found setpoint pressure of the Unit 3 B steam generator MSSV RV-3-1406 was 1054.8 psig which was 4.11% below the TS allowable setpoint pressure of +/- 3% of 1100 psig. The valve was declared inoperable at 14:13 and the unit entered TS 3.7.1.1.b, which requires the valve be restored to operable status within 4 hours or the power level must be reduced to 44% of rated thermal power. Since the unit was at approximately 44% rated power level, no power changes were required to comply with TS 3.7.1.1.b. The valve was subsequently adjusted to lift within +/-1% of its respective setpoint pressure and declared operable at 16:15.

As a result of the RV-3-1410 and RV-3-1406 test failures, the Inservice Testing (IST) program required a test expansion of the Unit 3 MSSVs for the Turkey Point Unit 3 Cycle 30 refueling outage. Four additional valves [RV-3-1402, RV-3-1407, RV-3-1408 and RV-3-1412] were sent offsite for as-found testing to satisfy the IST OM Code scope expansion requirements.

The as-found test results for three out of the four MSSVs sent offsite exceeded the TS allowable setpoint pressure of +/- 3% of 1105 psig. The as-found setpoint pressure of the Unit 3 B steam generator MSSV RV-3-1407 was 4.98% above the TS design setpoint of 1105. The as-found setpoint pressure of the Unit 3 B steam generator MSSV RV-3-1408 was 3.35% above the TS design setpoint of 1105 psig. The as-found setpoint pressure of the Unit 3 C steam generator MSSV RV-3-1412 was 3.80% above the TS design setpoint of 1105 psig.

Due to the additional as-found test failures, all remaining MSSVs were required to be tested. RV-3-1400, RV-3-1403, RV-3-1405, RV-3-1413 were sent offsite for as-found testing to satisfy the IST OM Code scope expansion requirements. There were no additional as-found test failures for the remaining valves.

Cause of the Event

There is no known reason for the observed as-found low lift setpoints for MSSVs RV-3-1410 and RV-3-1406 which were tested onsite. Given the as-found setpoints below the TS allowable, it is evident that setpoint drift, possibly associated with minor spring relaxation, most likely occurred since the last tests particularly for RV-3-1406.

RV-3-1402, RV-3-1407, RV-3-1408 and RV-3-1412 were sent offsite for as-found testing. MSSVs RV-3-1407, RV-3-1408 and RV-3-1412 as-found test results exceeded the TS allowable setpoint of 1105 psig +/- 3%. Although not observed visibly, the test results constitute empirical evidence that some form of friction or binding may have been present. RV-3-1407 and RV-3-1408 demonstrated similar discrepancies since their second lifts test results were considerably lower than the first. RV-3-1407 saw a 17 psi drop in lift pressure from the first lift to the second. RV-3-1408 experienced an even larger drop of 19 psi, bringing the second lift to within acceptable limits. These valves were satisfactorily tested previously during the Unit 3 Cycle 28 refueling outage, two cycles after the prior overhaul /assembly process completed during the Unit 3 Cycle 26 refueling outage. The Unit 3 Cycle 28 refueling outage test results provide supporting evidence that there were no overhaul/assembly issues related to



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these valves. RV-3-1412 experienced a 7 psi drop in lift pressure from the first lift to the second. There is no equipment related cause associated with the as-found test results. Setpoint variance is attributed to the test failure of RV-3-1412. The previous as-left setpoint for RV-3-1412 was high within the +/-1% setpoint band. The valve test failure would not have occurred had the valve been left closer to its target setpoint.

RV-3-1402, RV-3-1407, RV-3-1408 and RV-3-1412 sent offsite for as-found testing as part of the required scope expansion were overhauled as planned work. All of the valves had the discs replaced to expedite the overhaul process. There were also some spindle and spring replacements, but overall, there was no reported definitive reason for the high as-found lifts. There was no evidence of corrosion or galled parts that may have indicated binding.

Analysis of Safety Significance

Four safety valves are installed on each of the units' three main steam lines. The safety valves protect the steam generator and portions of the feedwater and main steam piping from overpressure conditions. The valves also serve as a heat sink for the reactor coolant system if the main condenser is unavailable and the atmospheric steam dump valves cannot relieve pressure during a reactor trip or a secondary transient.

A review of the Turkey Point Safety Analyses was performed to assess the impact of the MSSVs as-found condition on the Unit 3 Cycle 29 operation. Only those events that are susceptible to overpressure conditions are relevant to the as-found condition of the MSSVs. The limiting over pressurization design basis event is the Loss of Electrical Load event. The safety significance of the out of tolerance MSSVs RV-3-1407, RV-3-1408, RV-3-1412, RV-3-1410 and RV-3-1406 on that event was evaluated. The analysis assumes that all of the 12 MSSVs open at the respective TS nominal setpoint pressure plus 3% setpoint tolerance to maintain secondary pressure below 110% of the design pressure. Since the as-found test pressures varied, they were grouped by their setpoint and averaged. A review and assessment of the as-found condition of all the valves concluded that the average as-found setpoint pressure was below what was considered in the analysis.

Therefore, it is concluded that the overpressure design basis criteria for the limiting event would not have been exceeded during Cycle 29 as a result of the as-found MSSVs setpoints. Therefore, the impact of this condition on overall plant risk is insignificant and had no impact on the health and safety of the public.

Corrective Actions

Corrective actions are documented in AR 2284896 and AR 2282911

MSSVs RV-3-1406, RV-3-1410 and RV-3-1411 were adjusted and the as-left setpoints verified to be within +/- 1% of design pressure as required by TS 3.7.1.1.

MSSVs RV-3-1402, RV-3-1407, RV-3-1408 and RV-3-1412 were sent offsite for overhaul and replaced with four spares with as-left setpoints verified to be within +/- 1% of design pressure as required by TS 3.7.1.1

Failed Components Identified

Main Steam Safety Valves Dresser Ind. Valve Model 3707.

Similar Events

There were no similar events reported in the past three years for Turkey Point Units 3 and 4.