Exelon. Nuclear

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SVP-07-048

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

Quad Cities Nuclear Power Station, Unit 2
Renewed Facility Operating License No. DPR-30
NRC Docket No. 50-265

Subject: Licensee Event Report 265/06-001, Revision 1, "Two Main Steam Safety Valves and Two Main Steam Safety/Relief Valves Outside of the Technical Specification Allowed Tolerance"

Enclosed is Licensee Event Report (LER) 265/06-001, Revision 1, "Two Main Steam Safety Valves and Two Main Steam Safety/Relief Valves Outside of the Technical Specification Allowed Tolerance," for Quad Cities Nuclear Power Station, Unit 2.

This report is submitted in accordance with the requirements of the Code of Federal Regulations, Title 10, Part 50.73(a)(2)(i)(B), which requires the reporting of any operation or condition that was prohibited by the plant's Technical Specifications.

This report was revised to provide a more complete description of the corrective actions.

There are no regulatory commitments included in this report.

Should you have any questions concerning this report, please contact Mr. W. J. Beck at (309) 227-2800.

Respectfully,

for

Timothy J. Tulon
Site Vice President
Quad Cities Nuclear Power Station

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

IE22
NRR

NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Quad Cities Nuclear Power Station, Unit 2	05000265	1 of 4

4. TITLE Two Main Steam Safety Valves and Two Main Steam Safety/Relief Valves Outside of the Technical Specification Allowed Tolerance

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 N/A	DOCKET NUMBER N/A
04	10	2006	2006	- 001 -	01	07	27	2007	FACILITY NAME N/A	DOCKET NUMBER N/A

9. OPERATING MODE: 5

10. POWER LEVEL: 000%

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
☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
Wally Beck, Regulatory Assurance Manager	(309) 227-2800

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
XCM9	SB	RV	D245/ T020	Y					

14. SUPPLEMENTAL REPORT EXPECTED		15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)*	☒ NO				

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

On April 10, 2006, at approximately 1400 hours, Quad Cities Nuclear Power Station determined that two of the four removed Main Steam Safety Valves (MSSVs) and the Main Steam Safety/Relief Valve (SRV), all removed from Unit 2 during the Spring 2006 refueling outage (Q2R18), and the SRV removed during a planned outage in April of 2005 (Q2P03), had been found during as-found testing to have lift set pressures outside of the +/-1% Technical Specification (TS)-allowed tolerance. Both SRVs were also outside of the +/-3% ASME Code tolerance.

The cause of these events is setpoint drift. No mechanical wear, degradation or foreign material was identified for the two MSSVs and the SRV removed during Q2R18, or for the SRV removed during Q2P03.

All four of the removed MSSVs and the SRV were replaced during Q2R18 with newly refurbished valves that were certified to be within the +/-1% TS-allowed tolerance. Quad Cities Nuclear Power Station is pursuing a revision to the TS-allowable value for the MSSVs and SRVs to reflect the ASME code allowable.

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor, 2957 Megawatts Thermal Rated Core Power

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

EVENT IDENTIFICATION

Two Main Steam Safety Valves and Two Main Steam Safety/Relief Valves Outside of the Technical Specification Allowed Tolerance

A. CONDITION PRIOR TO EVENT

Unit: 2	Event Date: April 10, 2006	Event Time: 1400 hours
Reactor Mode: 5	Mode Name: Refueling	Power Level: 000%

B. DESCRIPTION OF EVENT

On April 10, 2006, at approximately 1400 hours, Quad Cities Nuclear Power Station determined that two of the four Main Steam Safety Valves (MSSVs) [V] [SB] removed from Unit 2 during the Spring 2006 refuel outage (Q2R18) had been found during as-found testing to have lift set pressures 1.9% and 1.6% below nameplate. These values are outside of the +/-1% Technical Specification (TS)-allowed tolerance. Both of the MSSVs had lift set pressures inside the +/-3% ASME Code tolerance.

Also, it was determined that the Main Steam Safety/Relief Valve (SRV) [RV] removed from Unit 2 during a planned outage in April of 2005 (Q2P03) had been found during as-found testing to have a lift set pressure 5.4% above nameplate, which is outside of both the +/-1% TS allowed tolerance and the +/-3% ASME Code tolerance.

Finally, it was determined that the SRV installed on Unit 2 during Q2P03 and removed during Q2R18 had been found during as-found testing to have a lift set pressure 3.7% above nameplate, which is outside of both the +/-1% TS-allowed tolerance and the +/-3% ASME Code tolerance.

All four of the removed MSSVs and the SRV were replaced during Q2R18 with refurbished valves that were certified to be within the +/-1% TS-allowed tolerance.

C. CAUSE OF EVENT

Based on the results of testing and valve disassembly and inspection, the cause of the out-of-tolerance condition for the MSSVs and the SRV removed during Q2R18 and for the SRV removed during Q2P03 is setpoint drift. No mechanical wear, degradation or foreign material was identified.

D. SAFETY ANALYSIS

The safety significance of this event was minimal. Both of the MSSVs were found to have a lift set pressure below (i.e., conservative with respect to) the nameplate value and inside the +/-3% Code tolerance. The analysis completed for the April 2004 Unit 2 SRV out-of-tolerance event (LER 265/04-004) bounds the test results described above. That analysis showed that the acceptance criteria for the Anticipated Transient Without Scram, ASME overpressure, and Appendix R analyses were met. Therefore, the valves were capable of performing the safety function. This condition is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B), which requires reporting of any operation or condition that was prohibited by the plant's TS.

E. CORRECTIVE ACTIONS

All four of the removed MSSVs and the removed SRV were replaced during Q2R18 with refurbished valves that were certified to be within the +/-1% TS-allowed tolerance.

Quad Cities Nuclear Power Station is pursuing a revision to the TS-allowable value for the MSSVs and SRVs to reflect the ASME code allowable value.

Quad Cities Nuclear Power Station continues to monitor and contribute to industry efforts to improve SRV performance through improved refurbishment process. Additionally, benchmarking efforts are in progress to determine what changes can be made to station processes to improve SRV performance.

Some improved SRV performance is anticipated in response to the greatly diminished Main Steam Line vibration levels as a result of installation in 2006 of Acoustic Side Branches on the MSSV risers.

F. PREVIOUS OCCURRENCES

There have been previous instances of MSSVs and SRVs being outside of the TS-allowed value (+/-1%). Following the Unit 1 refuel outage in October of 2000 (Q1R16), the SRV setpoint was 2.203% lower than nameplate, one MSSV setpoint was 2.0643% greater than nameplate, and one MSSV setpoint was 1.20% greater than nameplate. Following the Unit 2 refuel outage in February of 2002 (Q2R16), the SRV setpoint was 2.026% greater than nameplate, one MSSV setpoint was 2.8% less than nameplate, one MSSV setpoint was 1.8% less than nameplate, and one MSSV setpoint was 1.5% less than nameplate. Following the Unit 1 refuel outage in November of 2002 (Q1R17), the SRV setpoint was 2.203% greater than nameplate and one MSSV setpoint was 1.2% lower than nameplate. Following the Unit 2 refuel outage in March 2004 (Q2R17), the SRV setpoint was 6.8% greater than nameplate and one MSSV setpoint was 2.339% greater than nameplate (LER 265/04-001). Following the Unit 1 refuel outage in April 2005 (Q1R18), one MSSV was 1.7% lower than nameplate, one MSSV was 2.3% lower than nameplate, and one MSSV was 2.0% lower than nameplate. Following the Unit 2 refuel outage in Spring 2006 (Q2R18), one MSSV setpoint was found 1.9% below nameplate, one MSSV was found 1.6% below nameplate, an SRV removed

during a mid-cycle outage was found to be 5.4% above nameplate, and the SRV removed during Q2R18 was found to be 3.7% above nameplate. Following the Unit 1 Spring 2007 refuel outage (Q1R19), one MSSV setpoint was 1.4% lower than nameplate, one MSSV setpoint was 1.3% above nameplate, and the SRV setpoint was 2.7% above nameplate.

For every case except the Q2R17 and Q2R18 SRVs, the setpoint was within the ASME code allowable of +/-3%, and therefore there was no effect on functionality. For the Q2R17 and Q2R18 SRVs, specific assessments were performed to show that the safety valve function was met.

Based on the history described above, Quad Cities Nuclear Power Station has submitted a revision to the TS-allowable value for the MSSVs and SRVs to reflect the ASME code allowable.

G. COMPONENT FAILURE DATA

The MSSVs are Model 6'-3777-QA-RT Safety Valves manufactured by Dresser Industries/ Consolidated Valve Corporation. The SRVs are Model 7467F Safety/ Relief Valves manufactured by Target Rock.