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John A. Ventosa
Site Vice President

NL-12-095

June 28, 2012

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Stop O-P1-17
Washington, D.C. 20555-0001

SUBJECT: Licensee Event Report # 2012-003-00, "Technical Specification Prohibited Condition Due to a Pressurizer Safety Valve Discovered Outside its As-Found Lift Set Point Test Acceptance Criteria"
Indian Point Unit No. 3
Docket No. 50-286
DPR-64

Dear Sir or Madam:

Pursuant to 10 CFR 50.73(a)(1), Entergy Nuclear Operations Inc. (ENO) hereby provides Licensee Event Report (LER) 2012-003-00. The attached LER identifies an event where there was a Technical Specification prohibited condition for an inoperable Pressurizer Safety Valve, which is reportable under 10 CFR 50.73(a)(2)(i)(B). This condition was recorded in the Entergy Corrective Action Program as Condition Report CR-IP3-2012-01403.

There are no new commitments identified in this letter. Should you have any questions regarding this submittal, please contact Mr. Robert Walpole, Manager, Licensing at (914) 254-6710.

Sincerely,

JAV/cbr

cc: Mr. William Dean, Regional Administrator, NRC Region I
NRC Resident Inspector's Office, Indian Point 3
Mrs. Bridget Frymire, New York State Public Service Commission
LEREvents@INPO.org

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LICENSEE EVENT REPORT (LER)

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 Records and FOIA/Privacy Service Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet 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: INDIAN POINT 3

2. DOCKET NUMBER
05000-2863. PAGE
1 OF 4

4. TITLE: Technical Specification Prohibited Condition Due to a Pressurizer Safety Valve Discovered Outside its As-Found Lift Set Point Test Acceptance Criteria

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																																				
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9. OPERATING MODE 1			11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)																																											
10. POWER LEVEL 100%			<table border="0"><tr><td><input type="checkbox"/> 20.2201(b)</td><td><input type="checkbox"/> 20.2203(a)(3)(i)</td><td><input type="checkbox"/> 50.73(a)(2)(i)(C)</td><td><input type="checkbox"/> 50.73(a)(2)(vii)</td></tr><tr><td><input type="checkbox"/> 20.2201(d)</td><td><input type="checkbox"/> 20.2203(a)(3)(ii)</td><td><input type="checkbox"/> 50.73(a)(2)(ii)(A)</td><td><input type="checkbox"/> 50.73(a)(2)(viii)(A)</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(1)</td><td><input type="checkbox"/> 20.2203(a)(4)</td><td><input type="checkbox"/> 50.73(a)(2)(ii)(B)</td><td><input type="checkbox"/> 50.73(a)(2)(viii)(B)</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(2)(i)</td><td><input type="checkbox"/> 50.36(c)(1)(i)(A)</td><td><input type="checkbox"/> 50.73(a)(2)(iii)</td><td><input type="checkbox"/> 50.73(a)(2)(ix)(A)</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(2)(ii)</td><td><input type="checkbox"/> 50.36(c)(1)(ii)(A)</td><td><input type="checkbox"/> 50.73(a)(2)(iv)(A)</td><td><input type="checkbox"/> 50.73(a)(2)(x)</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(2)(iii)</td><td><input type="checkbox"/> 50.36(c)(2)</td><td><input type="checkbox"/> 50.73(a)(2)(v)(A)</td><td><input type="checkbox"/> 73.71(a)(4)</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(2)(iv)</td><td><input type="checkbox"/> 50.46(a)(3)(ii)</td><td><input type="checkbox"/> 50.73(a)(2)(v)(B)</td><td><input type="checkbox"/> 73.71(a)(5)</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(2)(v)</td><td><input type="checkbox"/> 50.73(a)(2)(i)(A)</td><td><input type="checkbox"/> 50.73(a)(2)(v)(C)</td><td><input type="checkbox"/> OTHER</td></tr><tr><td><input type="checkbox"/> 20.2203(a)(2)(vi)</td><td><input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)</td><td><input type="checkbox"/> 50.73(a)(2)(v)(D)</td><td>Specify in Abstract below or in NRC Form 366A</td></tr></table>								<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<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)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(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)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)	<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)(C)	<input type="checkbox"/> OTHER	<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)(v)(D)	Specify in Abstract below or in NRC Form 366A
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12. LICENSEE CONTACT FOR THIS LER

NAME
Steven Manzione, Component Engineering SupervisorTELEPHONE NUMBER (Include Area Code)
(914) 254-6772

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	AB	RV	C711	Y					

14. SUPPLEMENTAL REPORT EXPECTED

☒ YES (If yes, complete 15. EXPECTED SUBMISSION DATE) ☐ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR
10	30	2012

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced type written lines)

On May 1, 2012, Engineering was notified by Wyle Laboratories that one of three Pressurizer Code Safety Valves (RC-PCV-468) was outside its As-Found lift set point test acceptance criteria (2411 - 2559 psig). The As-Found set pressure testing acceptance criterion for operability is 2485 psig +/-3%. The SVs were removed during the last refueling outage (RO) in the spring of 2011 and sent offsite for testing. Testing was performed within one year of removal as required by the Inservice Testing Program. SV RC-PCV-468 lifted at 2617 psig which is outside its set pressure range. The initial As-Found lift was 5.3% above the 2485 set pressure therefore, the 110% design pressure limitation provided by the ASME code was not exceeded. The remaining two SVs both tested satisfactorily. During the RO all three SVs were removed and replaced with certified pre-tested spare SVs. All three SVs were found with zero seat leakage. The SVs installed during the RO were As-Left tested to 2485 psig +/-1% with zero seat leakage in accordance with surveillance procedure 3-PT-R5A. Technical Specification (TS) 3.4.10 (Pressurizer Safety Valves), requires three pressurizer safety valves to be operable with lift settings set at greater than 2460 psig and less than 2510 psig. TS Surveillance Requirement (SR) 3.4.10.1 requires each PSV to be verified operable in accordance with the Inservice Testing Program. The most probable cause of SV RC-PCV-468 lifting greater than 3% of its nominal set point was internal friction within the valve. Corrective action will be to perform a valve disassembly and inspection to determine the cause of the failure. The event had no effect on public health and safety.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Indian Point Unit 3	05000-286	2012	- 003	- 00	2 OF 4

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

Note: The Energy Industry Identification System Codes are identified within the brackets {}.

DESCRIPTION OF EVENT

On May 1, 2012, Engineering was notified by Wyle Laboratories that one of three Pressurizer Code Safety Valves (SV) (RC-PCV-468) {RV} was outside its As-Found lift set point test acceptance criteria (2411 - 2559 psig). The As-Found set pressure testing acceptance criterion for operability is 2485 psig +/-3%. The SVs were removed during the last refueling outage (RO) in the spring of 2011 and sent offsite for testing. Testing was performed within one year of removal as required by the Inservice Testing Program. SV RC-PCV-468 lifted at 2617 psig which is outside its set pressure range. The initial As-Found lift was 5.3% above the 2485 psig set pressure therefore, the 110% design pressure limitation provided by the ASME OM Code-2001 requirement for Class 1 Pressure Relief Valves was not exceeded. The remaining two SVs both tested satisfactorily. During the RO all three SVs were removed and replaced with certified pre-tested spare SVs. All three SVs were found with zero seat leakage. The SVs installed during the RO were As-Left tested to 2485 psig +/-1% with zero seat leakage in accordance with procedure 3-PT-R5A. The condition was recorded in the Indian Point Energy Center (IPEC) Corrective Action Program (CAP) as Condition Report CR-IP3-2012-01403.

The pressurizer safety valves, in conjunction with the reactor protection system, provide overpressure protection for the reactor coolant system (RCS) {AB}. The pressurizer safety valves (SVs) are totally enclosed pop type, spring loaded, self actuating 6 inch by 6 inch valves manufactured by Crosby Valve Company {C711}, Model HB-BP-86-E. The SVs are designed to prevent the system pressure from exceeding the system Safety Limit (SL) of 2735 psig, which is 110% of the design pressure. The SVs have an active safety function in the open position to prevent overpressure of the RCS. The SVs also have an active safety function in the closed position to prevent the loss of RCS inventory. Three pressurizer SVs (RC-PCV-464, RC-PCV-466, RC-PCV-468) discharge to the Pressurizer Relief Tank (PRT) and are designed with a set pressure of 2485 psig. Acceptable As-Left testing prior to installation requires the SVs to be set at 2485 psig +/-1% with zero seat leakage to compensate for set point drift over its operating cycle. The As-Found set pressure testing acceptance criterion for operability is 2485 psig +/- 3%. The pressurizer SVs are categorized as Class 1 safety relief valves in the Inservice Testing Program. All three pressurizer SVs are removed and replaced with pre-tested spares each refueling outage in order to satisfy the ASME OM Code-2001 requirement for Class 1 pressure relief valves. Upon replacement, all three of the removed SVs are tested within one year of removal from the system.

Technical Specification (TS) 3.4.10 (Pressurizer Safety Valves), requires three pressurizer safety valves to be operable with lift settings set at greater than 2460 psig and less than 2510 psig. TS Surveillance Requirement (SR) 3.4.10.1 requires each PSV to be verified operable in accordance with the Inservice Testing Program.

An extent of condition review determined that the condition is limited to the pressurizer SVs and Main Steam Safety Valves (MSSVs). Other than these valves, there are no other relief valves in the RCS or balance of plant that are subjected to the same temperatures, pressures and environment.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Indian Point Unit 3	05000-286	2012	- 003	- 00	3 OF 4

Cause of Event

The most probable cause of SV RC-PCV-468 lifting greater than 3% of its nominal set point was internal friction within the valve. A Failure Modes Analysis identified two possible causes: 1) sticking between the valve disc and seat, 2) contact between the valve spindle and guide. Other potential causes which were ruled out by the Failure Modes Analysis were; set point drift, previous incorrect valve setting, over torque of the nozzle ring set screw, foreign material intrusion, damaged/broken internals and dissimilar metal corrosion.

Corrective Actions

The following corrective actions will be performed under Entergy's Corrective Action Program to address the cause and prevent recurrence:

- Valve RC-PCV-468 will be disassembled and inspected to determine the cause of the failure.
- A review will be performed of the valve inspection report and applicable corrective actions identified and implemented.

Event Analysis

The event is reportable under 10CFR50.73(a)(2)(i)(B). The licensee shall report any operation or condition which was prohibited by the plant TS. TS 3.4.10 (Pressurizer Safety Valves) Limiting Condition for Operation (LCO) requires three pressurizer safety valves to be operable with lift settings set greater than 2460 psig and less than 2510 psig. During testing, SV RC-PCV-468 lifted at 2617 psig which is outside its set pressure range acceptance criterion. TS 3.4.10 Condition A (One pressurizer safety valve inoperable) required action A.1 is to restore the inoperable valve to operable status in 15 minutes. This TS action was not performed and the actions of Condition B not implemented. As the cause was determined not to be set point drift, the condition is a TS prohibited condition.

Past Similar Events

A review was performed of Licensee Event Reports (LERs) for the past three refueling cycles for any events reporting TS prohibited conditions due to pressurizer SVs outside their As-Found lift set point test acceptance criteria. No LERs were identified. A review of CRs during this period (2007 - 2011) recording pressurizer SV failures identified CR-IP3-2007-00679 which recorded a failure of PCV-464 whose as-found pressure set point was outside the acceptable range.

Testing of MSSVs during the review period identified MSSV failures to meet as-found lift test acceptance criteria. LER-2011-004 reported the failure of valves MS-47-4 and MS-48-4 to meet test acceptance criteria due to spindle wear and spring skew. In 2009, LER-2009-002 reported two valves (MS-45-1 and MS-48-3) failed their As-Found lift set point test. The cause was indeterminate but most likely due to set point drift. The Original Equipment Manufacturer (OEM) could not directly relate the indications discovered on the valves' spindles to the As-Found test results. No LERs were reported for Unit 3 MSSV failures in 2007.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Indian Point Unit 3	05000-286	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 4
		2012	- 003	- 00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

Safety Significance

This event had no effect on the health and safety of the public. There were no actual safety consequences for the event because there were no events that required the pressurizer SVs. An evaluation was performed on the potential impact of the condition on the accident analysis in the UFSAR and realistic plant response. The realistic plant response to transients would not be impacted, since the pressurizer pressure control system would be available for relieving RCS pressure which includes the pressure spray valves and power operated relief valves (PORVs). The non-Loss of Coolant Accident (non-LOCA) analyses in the UFSAR that could be impacted by the condition were: 1) Loss of load/Turbine Trip (LOL/TT), 2) Loss of normal feedwater/loss of non-emergency AC power (LONF/LOAC), 3) Loss of flow/locked rotor (LOF/LR), 4) Rod withdrawal at power (RWAP).

An assessment of the impact of the condition on these non-LOCA transients concluded they are either negligible or insignificant. Pressurizer SV RC-PCV-468 lifted at approximately 2617 psig, which is 5.31% above the nominal set point of 2485 psig. Before RC-PCV-468 reaches its opening set point of 5.31% (2617 psig), the other two pressurizer SVs (RC-PCV-464, RC-PCV-466) will lift at +0.32% (2493 psig) and +1.69% (2527 psig) and relieve pressure from the RCS. The non-LOCA UFSAR transients all conservatively assume a +4% opening set point, instead of the +/- 3% testing acceptance criterion. A 1.31% increase in RC-PCV-468 opening set point over what was assumed in the UFSAR analysis would be compensated by approximately a 3.6% and 2.3% margin in the other two pressurizer SVs. Thus, the UFSAR Chapter 14 analysis remains valid with the SV condition.