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Anthony J. Vitale  
Site Vice President

NL-17-112

August 29, 2017

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

Subject: Licensee Event Report # 2017-003-00, "Condensate Storage Tank  
Declared Inoperable Per Technical Specification"  
Indian Point Unit No. 3  
Docket No. 50-286  
DPR-26

Dear Sir or Madam:

Pursuant to 10 CFR 50.73(a)(1), Entergy Nuclear Operations Inc. (ENO) hereby provides Licensee Event Report (LER) 2017-003-00. The Condensate Storage Tank Declared Inoperable Per Technical Specification, which is reportable under 10 CFR 50.73(a)(2)(V)(B). This condition was recorded in the Entergy Corrective Action Program as Condition Report CR-IP3-2017-03504.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Anthony J. Vitale".

AJV/trj

cc: Mr. Daniel H. Dorman, Regional Administrator, NRC Region I  
NRC Resident Inspector's Office  
Ms. Bridget Frymire, New York State Public Service Commission

JEZZ  
NRR



**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  
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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.

<b>1. FACILITY NAME</b> Indian Point Unit 3	<b>2. DOCKET NUMBER</b> 05000286	<b>3. PAGE</b> 1 OF 5
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**4. TITLE**  
Condensate Storage Tank Declared Inoperable Per Technical Specification

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
06	30	2017	2017	-003	- 00	08	29	2017	N/A	05000
									FACILITY NAME	DOCKET NUMBER
									N/A	05000

<b>9. OPERATING MODE</b>  1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)</b>											
	<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)		
<b>10. POWER LEVEL</b>  100%	<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 checked="" 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)(i)		
<input type="checkbox"/> 20.2203(a)(2)(vi)			<input type="checkbox"/> 50.73(a)(2)(i)(B)			<input type="checkbox"/> 50.73(a)(2)(vii)			<input type="checkbox"/> 73.77(a)(2)(ii)			
			<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 Nelson Azevedo	TELEPHONE NUMBER (Include Area Code) 9142546775
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**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	KA	RV	Tyco	Y					

<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	<b>15. EXPECTED SUBMISSION DATE</b>	MONTH	DAY	YEAR

**ABSTRACT**

On June 30, 2017, at 0130 hours [EDT], the Condensate Storage Tank was declared inoperable per Technical Specification 3.7.6. A pinhole sized through wall leak was discovered on the downstream side of CD-123, the 32 Auxiliary Boiler Feed Pump Bearing Cooling Relief Valve, which was unisolable to the Condensate Storage Tank.

The pinhole leak was identified following the performance of 3PT-Q120B, 32 Auxiliary Boiler Feed Pump Functional Test. All Operability and Acceptance Criteria of 3PT-Q120B were sat. The relief valve was removed from the system and sent to a vendor for evaluation. After the vendor evaluation, it was determined that the valve pinhole area leak was due to a casting defect.

This event was determined to be reportable as a Loss of Safety Function pursuant to 10 CFR 50.72(b)(3)(v)(B) – Any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to remove residual heat.



**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

(See NUREG-1022, R.3 for instruction and guidance for completing this form  
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Indian Point Unit 3	05000-286	2017	- 003	- 00

**NARRATIVE**

On June 30, 2017 at 0130 [EDT], the Condensate Storage Tank was declared inoperable per Technical Specification 3.7.6. The Condensate Storage Tank shall be OPERABLE in MODES 1, 2, 3 and MODE 4 when steam generator is relied upon for heat removal. A pin hole sized through wall leak was discovered on the downstream side of CD-123, the 32 Auxiliary Boiler Feed Pump Bearing Cooling Relief Valve, which is unisolable to the Condensate Storage Tank. The function of the relief valve is to protect the bearing housings of the turbine-driven Auxiliary Boiler Feedwater Pump and its steam driven turbine from over pressure. The pinhole leak was identified following performance of 3PT-Q120B, 32 Auxiliary Boiler Feed Pump Functional Test. All Operability and Acceptance Criteria of 3PT-Q120B were sat.

The relief valve CD-123, had a through body wall leak of pin holed size with a steady stream of water leaking out. The valve body is cast iron. No type of Non-Destructive Examination (NDE) could be used to effectively characterize the defect. Based on the inability to characterize the defect and the fact that the degradation mechanism was not readily apparent, the valve was considered inoperable because the valve has lost its ability to maintain a pressure boundary. As a result, the Condensate Storage Tank was declared inoperable. The Condensate Storage Tank had 580,000 gallons of water contained in the tank at the time of the leak discovery, which is well above the minimum required amount of 360,000 gallons. City water is the backup water supply to the Auxiliary Feedwater System, and was verified to be operable in accordance with the Actions of the Technical Specification. The Technical Specification requirements were to restore the Condensate Storage Tank to operable status within 7 days.

The Condensate Storage Tank provides cooling water to remove decay heat. The minimum amount of water in the Condensate Storage Tank is the amount needed to maintain the plant for 24 hours at hot shutdown following a trip from full power.

This event was determined to be reportable as a Loss of Safety Function pursuant to 10 CFR 50.72(b)(3)(v)(B) – Any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to remove residual heat.



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**CAUSE OF EVENT**

The 32 Auxiliary Boiler Feed Pump Bearing Cooling Relief Valve was removed from service and submitted to a vendor for full evaluation of the pinhole area. After the vendor evaluation, it was determined that the valve pinhole area leak was due to a casting defect. Based on the amount of material and the cross-section remaining around the casting void, gross structural integrity of the valve body and associated piping would not have been challenged with this porosity defect present under design conditions.

The vendor performed an evaluation included metallographic examination and quantitative chemical analysis. Results of the vendor evaluation indicate the leak through the body occurred along a tortuous path through a cavity consistent with a casting void defect. The casting void had a diameter of approximately 10 mm, and mold sand material was present in this cavity. Corrosion wastage or pitting was not evident on either the exterior or interior of the valve body surfaces.

This valve had previously been in service for a period from approximately 2009 through 2013, when it was removed, tested, and placed into storage as a spare. The valve was subsequently re-installed into the auxiliary boiler feed pump bearing cooling line during the Unit 3 2017 refueling outage. Upon testing the system, leakage from the valve was observed.

It was surmised by the vendor that sufficient blockage of mold sand material in the leakage path in the casting void was present to maintain service conditions during the prior (2009 through 2013) operating period. With the valve's removal and relief valve testing, followed by re-installation, material blockage in the void cavity became dislodged to some degree and a leak path was presented.

**CORRECTIVE ACTIONS**

The following corrective actions have been performed under the Corrective Action Program to address the cause of this event.

- The CD-123, 32 Auxiliary Boiler Feed Pump Bearing Cooling Relief Valve was removed from the system and replaced with a pre-tested spare.
- The CD-123, 32 Auxiliary Boiler Feed Pump Bearing Cooling Relief Valve was sent to a vendor for evaluation of the pinhole area. The evaluation confirmed the pinhole leak was due to a casting defect.



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**EVENT ANALYSIS**

The Condensate Storage Tank provides cooling water to remove decay heat and the minimum amount of water in the Condensate Storage Tank is the amount needed to maintain the plant for 24 hours at hot shutdown following a trip from full power. The minimum water level for operability was maintained at all times. Based upon the vendor analysis, the pinhole leak identified on CD-123 did not challenge the functionality of the relief valve or any of the Technical Specification Safety Limits. With the pinhole leak in the valve, the station could not apply Code Case N-513-1 to this configuration, since the code case does not allow the use on valves. However, the vendor report showed that there was no loss of safety function to the 32 Auxiliary Boiler Feed Pump and the Condensate Storage Tank remained available at all times. Since we cannot use code case N-513 in this application, this event is reportable under 10 CFR 50.73(a)(2)(v)(B) – Any event or condition that could have prevented the fulfilment of the safety function of structures or systems that are needed to remove residual heat.

**PAST SIMILAR EVENTS**

A review was performed of the past five years of Licensee Event Reports (LERs) for events reporting a Technical Specification violation due to inoperable piping caused by pinhole or through wall leaks or defects.

- LER 2013-004-00 Technical Specification prohibited condition due to an inoperable essential Service Water header as a result of pinhole leaks in Code Class 3 Service Water Piping.
- LER 2015-001-01 Technical Specification prohibited condition due to an inoperable Containment caused by a Service Water pipe leak that results in exceeding the allowed leakage rate for containment.



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**SAFETY SIGNIFICANCE**

There were no actual safety consequences during the time the Condensate Storage Tank was inoperable. After vendor evaluation it was determined that the valves pinhole leak area was due to a casting defect. Based on the amount of material and the cross-section remaining around the casting void, gross structural integrity of the valve body and associated piping would not have been challenged with this porosity defect present under design conditions. The minimum water level for operability was maintained at all times. Based upon the vendor analysis, the pinhole leak identified on CD-123 did not challenge the functionality of the relief valve or any of the Technical Specification Safety Limits. With the pinhole leak in the valve, the station could not apply Code Case N-513-1 to this configuration, since the code case does not allow the use on valves. However, the vendor report showed that there was no loss of safety function to the 32 Auxiliary Boiler Feed Pump and the Condensate Storage Tank remained available at all times. Moreover, consistent with guidance provided in Section 2.2 of Nuclear Energy Institute (NEI) 99-02 (Regulatory Assessment Performance Indicator Guideline), Revision 7, this event did not represent, and should not be counted as, a safety system functional failure. As such, Entergy will not record this event as a safety system functional failure in the NRC Mitigating Systems Performance Indicators for Indian Point Unit 3.