

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Haddam Neck										DOCKET NUMBER (2) 0 5 0 0 0 2 1 1 3										PAGE (3) 1 OF 0 4		
TITLE (4) RCS Safety Valve As-Found Lift Pressure High Due To Setpoint Drift																						
EVENT DATE (5)				SERIAL NUMBER (6)				REPORT DATE (7)				OTHER FACILITIES INVOLVED (8)										
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES					DOCKET NUMBER(S)								
1	0	0	9	8	7	8	7	1	0	6	8	7						0 5 0 0 0 0				
OPERATING MODE (9) 6				THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)																		
POWER LEVEL (10) 10 0 0				20.40(a)(i)(i)				20.405(c)				50.73(a)(2)(iv)				73.71(b)						
				20.405(a)(1)(ii)				50.36(a)(1)				50.73(a)(2)(v)				73.71(c)						
				20.405(a)(1)(iii)				50.36(c)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
				20.405(a)(1)(iii)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(A)										
				20.405(a)(1)(iv)				50.73(a)(2)(iii)				50.73(a)(2)(viii)(B)										
				20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)										
LICENSEE CONTACT FOR THIS LER (12)																						
NAME P. F. L'Heureux, Assistant Engineering Supervisor												TELEPHONE NUMBER 2 0 3 2 6 7 - 1 2 5 5 6										
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																						
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC			
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)				MONTH DAY YEAR						
YES (If yes, complete EXPECTED SUBMISSION DATE)												X										

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

Two occurrences of pressurizer code safety valves failing to meet lift setpoint tolerances were not reported via 10CFR50.73 due to a misinterpretation of the Technical Specification. During the 1986 and 1987 refueling outages, one of the three pressurizer code safety valves failed to meet the $\pm 1\%$ design setpoint tolerance.

Since the Technical Specifications only referenced Section VIII of the ASME Boiler and Pressure Vessel Code, an allowable setpoint tolerance of $\pm 3\%$ (for Section VIII vessels) was used as the reportability criteria. On October 17, 1987, with the plant shutdown in Mode 6, it was determined that Section I of the ASME code was the applicable code for setpoint tolerance. This would imply a reportability criteria of $\pm 1\%$ of setpoint.

The corrective action is to ensure that the proposed Standard Technical Specifications includes explicit Limiting Conditions for Operations (LCOs) for setpoint tolerance on these valves.

This event is reportable per 10CFR50.73 (a)(2)(i) since it involved a condition prohibited by Technical Specifications.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/89

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Haddam Neck	05000213	87	016	00	02	OF	04

TEXT (If more space is required, use additional NRC Form 366A's) (17)

BACKGROUND

Three spring-loaded pressurizer code safety valves (EIIIS System Code: AB; Component Code: RV) are installed at the Haddam Neck plant, with setpoints of 2485 psig \pm 1%, 2535 psig \pm 1% and 2585 psig \pm 1%. They were designed in accordance with the ASME Boiler and Pressure Vessel (B&PV) Code, Section I - Power Boilers. A setpoint tolerance of \pm 1% is specified on the original procurement documents as well as in the In Service Test (IST) program. Over the past three refueling outages (1984, 1986, 1987) for which steam pressure lift tests were performed, two instances of valves having actual lift setpoints outside the specified (\pm 1%) tolerance have occurred. These events are listed on Table 1. No Licensee Event Reports were issued because plant-specific safety analyses were performed which indicated that the complete failure of any one of the three safety valves to lift during a postulated loss of load event, would not result in exceeding the design limit (110% of system design pressure). In addition, a review of the Safety Technical Specifications resulted in the determination that no Technical Specification was violated. The affected valves were reworked and successfully setpoint-tested.

EVENT DESCRIPTION

As a result of the recent (August 6, 1987) setpoint failure with the plant shutdown in Mode 6, an engineering review was conducted in order to determine whether a less restrictive setpoint tolerance could be justified. The investigation considered the original design features, current safety analysis, past failure history, testing methods, ASME code requirements, current Technical Specifications, and draft Standard Technical Specifications.

During this investigation, it was determined that the current Technical Specifications had been misinterpreted with respect to the required setpoint tolerance. Specifically, the current Technical Specification (Section 3.3) requires that, when the reactor is critical, all three code safety valves "shall be in service and shall be in accordance with section VIII of the ASME Boiler and Pressure Vessel Code." An ASME B&PV Section VIII vessel is required per paragraph UG-134, "Pressure Setting of Pressure Relief Devices," to have a lift setpoint tolerance of 3% (for pressures greater than 70 psi). However, per paragraph UG-125, "Pressure Relief Devices - General" of Section VIII, an unfired pressure vessel (such as a pressurizer) must conform to the requirements of Section I, which in paragraph PG-72 requires safety valves to have a setpoint tolerance of \pm 1% (for pressures greater than 1000 psi). Previous interpretations of Technical Specification 3.3 and ASME B&PV Section VIII erroneously focused on the \pm 3% limit and thus resulted in a negative 10CFR50.73 reportability determination.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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Haddam Neck	0500021387	—	016	—	00	03	OF 04

TEXT (If more space is required, use additional NRC Form 306A's) (17)

CAUSE OF EVENT

The principle cause of this event is the non-explicit nature of Technical Specification 3.3, in that it simply references the requirements of Section VIII of the ASME B&PV code rather than specify the salient operational characteristics.

SAFETY ASSESSMENT

A plant-specific safety analysis was performed as part of the engineering evaluation resulting from the 1986 safety valve failure. Two cases were analyzed for the postulated total loss of load incident:

Case 1 - Pressurizer safety valve #586 (lift setpoint 2600 psia) fails closed; the remaining two safety valves remain operable.

Case 2 - Pressurizer safety valve #584 (lift setpoint 2500 psia) fails closed; the remaining two safety valves remain operable.

Both cases involve a complete loss of steam load from full power. The results of the above analysis showed that for both cases the peak reactor coolant pressure remained below 110% of the reactor coolant design pressure (110% of 2500 psia = 2750 psia). The cases analyzed (i.e., complete valve failure) conservatively bound the situation where any one safety valve lifts at a pressure above the design tolerance. Thus, the safety valve setpoint drift experienced in 1986 and 1987 would not have resulted in exceeding a safety limit during a postulated total loss of load.

This event is reportable per 10CFR50.73 (a)(2)(i) since it involved a condition prohibited by Technical Specifications.

CORRECTIVE ACTION

The Haddam Neck draft Standard Technical Specifications will include clear and specific Limiting Conditions for Operations (LCOs) for the pressurizer code safety relief valves.

PREVIOUS SIMILAR EVENTS

No previous similar events could be identified.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

TABLE 1

Pressurizer Code Safety Valve Failures

<u>Test Date</u>	<u>Valve</u>	<u>Set Pressure</u>	<u>As Found Pressure</u>	<u>Deviation</u>
1/22/86	PR-SV-586	2585 psig \pm 1%	2626 psig	1.6% HIGH
8/6/87	PR-SV-584	2485 psig \pm 1%	2534 psig	2.0% HIGH



CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT

RR#1 • BOX 127E • EAST HAMPTON, CONN. 06424

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

Nov.
~~October~~ 6, 1987
Re: 10CFR73

Reference: Facility Operating License No. DPR-61
Docket No. 50-213
Reportable Occurrence LER 50-213/87-016-00

Gentlemen:

This letter forwards the Licensee Event Report 87-016-00, required to be submitted pursuant to the requirements of Connecticut Yankee Technical Specifications.

Very truly yours,

D. B. Miller, Jr.

Donald B. Miller, Jr.
Station Superintendent

DBM:JJL/mg

Attachment: LER 87-016-00

cc: W. T. Russell, Regional Administrator, Region I
J. T. Shedlosky, Senior Resident Inspector, Haddam Neck

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