CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT

RR#1 • BOX 127E • EAST HAMPTON, CT 06424-9341

December 3, 1990
Re: 10CFR50.73(a)(2)(v)(D)

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

Reference: Facility Operating License No. DPR-61
Docket No. 50-213
Reportable Occurrence LER 50-213/90-026-00

Gentlemen:

This letter forwards the Licensee Event Report 90-026-00, required to be submitted, pursuant to the requirements of Connecticut Yankee Technical Specifications.

Very truly yours,

John P. Stetz
Station Director

JPS/dl

Attachment: LER 50-213/90-026-00

cc: Mr. Thomas T. Martin
Regional Administrator, Region I
475 Allendale Road
King of Prussia, PA 19406

J. T. Shedlosky
Sr. Resident Inspector
Haddam Neck

IE22
1/1

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Haddam Neck	0 5 0 0 0 2 1 3	1 OF 0 4

TITLE (4)

Feedwater Regulator Bypass Check Valves Failed Leakage Test

EVENT DATE (5)			LER 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 1	0 5	9 0	9 0	0 2 6	0 0	1 2	0 3	9 0		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	5
POWER LEVEL (10)	0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

	20.402(b)		20.406(c)		50.73(a)(2)(iv)		73.71(b)
	20.405(a)(1)(i)		50.36(c)(1)	X	50.73(a)(2)(v)		73.71(c)
	20.405(a)(1)(ii)		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)(i)		50.73(a)(2)(viii)(A)		
	20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		
	20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
J. Calderone, Engineer	AREA CODE 2 0 3 2 6 7 - 2 5 5 6

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
B	S J	V	P 3 0 5	Y							

SUPPLEMENTAL REPORT EXPECTED (14)

		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

ABSTRACT

On November 7, 1990, at 1450 hours, with the plant in Mode 5 (cold shutdown) the failure of the feedwater (FW) regulator bypass line check valves (FW-CV-135-1, 2, 3, 4) to meet leakage criteria during a surveillance test conducted on November 5, 1990, was determined to be reportable. The root cause is attributed to valve chatter which accelerated the wear of the valve disc and seat. It is believed that the valve chatter was due to the valves being located in a turbulent flow region (less than one pipe diameter from the main feedwater header). Short term corrective action consisted of repairing the check valves and relocating the valves further downstream of the main feedwater header. The valves were successfully retested following repairs. Long term action consists of performing a seat leakage test during the next cold shutdown. This event is reportable under 10CFR50.73(a)(2)(v)(D) since this condition alone could have prevented the fulfillment of the safety function of a system needed to mitigate the consequences of an accident.

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

BACKGROUND INFORMATION

The feedwater regulator bypass check valves (EIIS Code: V) FW-CV-135-1, 2, 3, 4 are 3 inch Powell 900 lb. "Y" check valves. The major function of these valves is to insure that, in the event of an Auxiliary Feed System (EIIS Code: BA) actuation, flow is directed to the steam generators and not diverted to the main feed system (EIIS Code: SJ) via backflow through the feedwater regulator bypass line (see Figure 1). The FW-CV-135 valves are inservice leak tested at a minimum frequency of once per refueling outage.

EVENT DESCRIPTION

On November 5, 1990, at 1030 hours, with the plant in Mode 5 (cold shutdown) the feedwater regulator bypass line check valves (FW-CV-135-1, 2, 3, 4) failed the as-found surveillance leak test acceptance criteria of 0.5 gpm. The results were as follows:

FW-CV-135-1:	1.0 gpm
FW-CV-135-2:	0.9 gpm
FW-CV-135-3:	2.0 gpm
FW-CV-135-4:	2.4 gpm

On November 7, 1990, at 1450 hours, with the plant in Mode 5 (cold shutdown) this condition was determined to be reportable. When the check valves were disassembled and inspected it was discovered that the seats were worn. The valves failed the same leak test when they were previously tested on December 7, 1989. Similar wear was noted at that time. Subsequent to refurbishment the check valves had been in operation for approximately three months prior to the recent leak test.

CAUSE OF THE EVENT

The root cause is attributed to valve chatter which accelerated the wear of the valve disc and seat. It is believed that the valve chatter was due to the valves being located in a turbulent flow region (less than one pipe diameter (3") from the 18 inch main feedwater header).

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

SAFETY ASSESSMENT

This event is reportable under 10CFR50.73(a)(2)(v)(D) since this condition alone could have prevented the fulfillment of the safety function of a system needed to mitigate the consequences of an accident. The check valves' inability to prevent reverse flow compromises the normal auxiliary feedwater system's ability to deliver flow to the steam generators. The degraded check valves cumulative leak rate was 3.9 gpm indicating that the amount of flow which would be diverted from the Steam Generators would not be a significant portion of the total auxiliary feedwater flow. In addition, per Functional Recovery Procedure FR-H.1, "Response to Loss of Secondary Heat Sink", operators could establish an alternate feed path so that the failed check valves in question would have only temporarily prevented the fulfillment of the auxiliary feed safety function. Based on the above, the safety significance of this event is considered negligible.

CORRECTIVE ACTION

Short term corrective action consisted of repairing the check valves and relocating the valves further downstream of the main feedwater header. Long term action consists of performing a seat leakage test during the next cold shutdown.

ADDITIONAL INFORMATION

Component: 3 inch, 900 lb., "Y" Check Valve (Figure No. 19065Y W.E.)

Manufacturer: The Wm. Powell Co.

PREVIOUS SIMILAR EVENTS

LER 90-004

Figure 1

Feedwater System (Typical)