



CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT

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

October 9, 1990
Re: 10CFR50.73(a)(2)(vii)(A)


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 50-213/90-019-00

Gentlemen:

This letter forwards the Licensee Event Report 90-019-00, 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 50-213/90-019-00

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

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Haddam Neck	DOCKET NUMBER (2) 0 5 0 0 0 2 1 3	PAGE (3) 1 OF 04
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TITLE (4)
Two of Three Pressurizer Level Channels Declared Inoperable

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)
0	9	10	9	0	1	0	1	0			0 5 0 0 0
0	9	10	9	0	0	1	0	0			0 5 0 0 0

OPERATING MODE (9) 1

POWER LEVEL (10) 0 8 1 0

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

20.402(b)	20.405(e)	50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.36(c)(2)	<input checked="" type="checkbox"/> 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)
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)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME M. Brothers, Senior Engineer	TELEPHONE NUMBER AREA CODE: 2 0 3 2 6 7 1 - 2 5 5 6
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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

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

ABSTRACT

On September 10, 1990, at 1130 hours, with the plant in Mode 1 at 80 percent power, two of three pressurizer level channels were declared inoperable based on channels 1 and 2 reading 4 percent and 5 percent, respectively, lower than channel 3. In accordance with plant technical specifications a load reduction was commenced at 1230. At approximately 1400 the pressurizer high level reactor trip setpoints were lowered, the two channels were declared operable and the load reduction was terminated. The cause of the event was determined to be subtle differences in the calibration methods used for each channel. During an unscheduled shutdown on September 20, 1990 the transmitter for channel 1 was replaced and channels 2 and 3 were recalibrated based on the manufacturer's recommendations. Long term corrective action consists of revising calibration procedures, continued channel monitoring and assessing the need to modify the design of the reference legs. This event is reportable under 10CFR50.73(a)(2)(vii)(A) since two channels were inoperable in a single system designed to shut down the reactor.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Haddam Neck	DOCKET NUMBER (2) 0 5 0 0 0 2 1 3 9 0	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		9 0	0 1 9	0 0	0 2	OF 0 4

TEXT (If more space is required, use additional NRC Form 205A's) (17)

BACKGROUND INFORMATION

The pressurizer high level reactor trip is a 2 out of 3 logic scheme with a technical specification setpoint of ≤ 84 percent of instrument span and a technical specification allowable value of ≤ 86 percent of span. Since initial pressurization of the reactor coolant system (RCS) (EIIS Code: AB) on August 12, 1990, following the refueling outage, deviations were noted between the three pressurizer level channels that were larger than anticipated. Tracking of pressurizer level was initiated on September 1, 1990 to attempt to determine actual level. The transmitter (EIIS Code: LIT) for channel 2 (LT-401-2) was replaced and its reading matched channel 1. At that time it was felt that channels 1 and 2 were correct and channel 3 was reading high by approximately 5 percent. Since pressurizer level was in error in the conservative direction all channels were considered operable.

EVENT DESCRIPTION

On September 10, 1990 with the plant in Mode 1 at 80 percent power an engineering evaluation determined that there was a high probability that, of the three pressurizer level channels, channel 3 had the most accurate indication of pressurizer level. Since channels 1 and 2 were reading 4 percent and 5 percent, respectively, lower (non-conservative) than channel 3 they were declared inoperable at 1130 hours. In accordance with the plant's technical specifications a load reduction was commenced at 1230 hours in anticipation of a plant shutdown. At approximately 1400 hours the pressurizer high level reactor trip setpoints for channels 1 and 2 were lowered to account for the potentially non-conservative direction of their deviation, the channels were declared operable and the load reduction was terminated.

CAUSE OF THE EVENT

The cause of the event was determined to be subtle differences in the methods of calibration utilized by personnel for calibrating the three channels.

SAFETY ASSESSMENT

This event is reportable under 10CFR50.73(a)(2)(vii)(A) since this condition caused two channels to become inoperable in a single system designed to shut down the reactor and maintain it in a safe condition.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

FACILITY NAME (1) Haddam Neck	DOCKET NUMBER (2) 0 5 9 0 0 2 1 3 9 0	LER NUMBER (6)			PAGE (3) 0 3 OF 0 4
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		0 1 9	0 0	0 3	

TEXT (If more space is required, use additional NRC Form 388A's) (17)

This Safety Assessment addresses the period of time which the plant operated with non-conservative Pressurizer High Level Reactor Trip Setpoints for Pressurizer Level Channels 1 and 2 (August 12, 1990 through September 10, 1990).

The two accidents which take credit for the Pressurizer High Level Reactor Trip are:

1. Uncontrolled Rod Withdrawal from Power
2. Loss of Load

In the case of an Uncontrolled Rod Withdrawal from Power the Pressurizer High Level Reactor Trip is a backup to Neutron Flux High Power and Variable Low Pressure Reactor Trips. Both of these trips were operable during the period of time in which Pressurizer Level Channels 1 and 2 were inoperable, therefore there was no impact on the Safety Analysis as it pertains to an Uncontrolled Rod Withdrawal from Power.

In the case of a Loss of Load the Pressurizer High Level Reactor Trip is a backup to high Pressurizer Pressure and Neutron Flux High Power Reactor Trips. Both of these trips were operable during the period of time in which Pressurizer Level Channels 1 and 2 were inoperable, therefore there was no impact on the Safety Analysis as it pertains to a Loss of Load.

The other safety consideration occurs as a result of Pressurizer Level Channel 1 being the controlling Channel for automatic Pressurizer Level Control. This could affect the actual water level by making actual water level greater than that assumed at the initiation of a transient. This is only a concern when a higher Pressurizer Level has a negative effect on the Safety Analysis. The only scenario in which a maximum Pressurizer Level has a negative effect is the maximum RCS Pressure reached during a Reactor Coolant Pump Rotor Seizure. For a Reactor Coolant Pump Rotor Seizure a maximum Pressurizer Level results in a maximum RCS Pressure. Therefore, in the case of a Reactor Coolant Pump Rotor Seizure the effect of a low Pressurizer Level Channel 1 would be a

potential increase in the peak RCS Pressure. Since Pressurizer Level Channel 1 was a maximum of 4% below the highest Pressurizer Level Channel, and since the plant was never operating at a Pressurizer Level which was greater than 48%, the Safety Analysis assumption as to the maximum initial Pressurizer Level (55%) bounds the conditions which were present during the period of time in which Pressurizer Level Channel 1 was inoperable. The safety consequences of this event are therefore negligible.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Haddam Neck	DOCKET NUMBER (2) 0 5 0 0 0 2 1 3 9 0	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		0 1 9	0 0	0 0	0 4	OF 0 4

TEXT (If more space is required, use additional NRC Form 308A's) (17)

CORRECTIVE ACTION

Immediate corrective action consisted of lowering the pressurizer high level reactor trip setpoints for pressurizer levels channels 1 and 2 to insure that the trip would occur within the bounds of the safety analysis. Short term corrective action involved recalibrating channels 2 and 3 and replacing the transmitter for channel 1 during an unscheduled shutdown on September 20, 1990.

Long term corrective action includes:

1. Revising the calibration procedures to ensure a consistent method of calibrating the transmitters.
2. Continue tracking all pressurizer level channels to identify any further deviation.
3. Assessing the need to modify the design of the reference legs.

ADDITIONAL INFORMATION

None

PREVIOUS SIMILAR EVENTS

None