CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT
362 INJUN HOLLOW ROAD • EAST HAMPTON, CT 06424-3099

October 10, 1996
Re: 10CFR50.73(a)(2)(i)
B15937

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 50-213/96-022-00

This letter forwards the Licensee Event Report 96-022-00, required to be submitted, pursuant to the requirements of the Haddam Neck Plant's Technical Specifications.

Very truly yours,

J. J. LaPlatney
Unit Director

JJL/eda

Attachment: LER 50-213/96-022-00

cc: Mr. H. J. Miller
Regional Administrator, Region I
475 Allendale Road
King of Prussia, PA 19406

Mr. William J. Raymond
Sr. Resident Inspector
Haddam Neck

IE22

1028-3 REV 2-91

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Haddam Neck	05000 -213	1 OF 5

TITLE (4)
RCS Loop Stop Valves Opened Without Timely Boron Sample

EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
09	01	96	96	-- 022 --	00	10	10	96	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	5
POWER LEVEL (10)	000

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

	20.402(b)		20.405(c)		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)		50.73(a)(2)(vii)		OTHER
	20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)
	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 (Include Area Code)
Peter Brunsgaard, Senior Engineer	(860) 267-2556

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

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 15 single-spaced typewritten lines) (16)

On September 13, 1996, at 1631 hours, with the plant in Mode 5 (cold shutdown) it was determined, during a review of shift manager logs, that the 30 minute limit from the time a reactor coolant system (RCS) loop boron sample is taken until the RCS loop stop valves are opened may have been exceeded on September 1, 1996 (mod 5). Technical Specification 4.4.1.7.3 requires that the isolated loop boron concentration be determined within 30 minutes prior to opening the loop stop valves. The root cause of this event was personnel error - written communication. The procedure used to return an isolated loop to service did not define the start/stop criteria for the 30 minute time period nor did the procedure have a place to record the start/stop times. Contributing causes to this event were personnel error and a programmatic weakness in the procedure development process. Corrective action consists of revising the procedure to define the start/stop criteria and to define communication requirements between operations and chemistry department personnel. In addition, the operations department has formed a new procedure group to upgrade the operations department procedures. This event is reportable under 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications.

REQUIRED NUMBER OF DIGITS/CHARACTERS FOR EACH BLOCK

BLOCK NUMBER	NUMBER OF DIGITS/CHARACTERS	TITLE
1	UP TO 46	FACILITY NAME
2	8 TOTAL 3 IN ADDITION TO 05000	DOCKET NUMBER
3	VARIES	PAGE NUMBER
4	UP TO 76	TITLE
5	6 TOTAL 2 PER BLOCK	EVENT DATE
6	7 TOTAL 2 FOR YEAR 3 FOR SEQUENTIAL NUMBER 2 FOR REVISION NUMBER	LER NUMBER
7	6 TOTAL 2 PER BLOCK	REPORT DATE
8	UP TO 18 -- FACILITY NAME 8 TOTAL -- DOCKET NUMBER 3 IN ADDITION TO 05000	OTHER FACILITIES INVOLVED
9	1	OPERATING MODE
10	3	POWER LEVEL
11	1 CHECK BOX THAT APPLIES	REQUIREMENTS OF 10 CFR
12	UP TO 50 FOR NAME 14 FOR TELEPHONE	LICENSEE CONTACT
13	CAUSE VARIES 2 FOR SYSTEM 4 FOR COMPONENT 4 FOR MANUFACTURER NPRDS VARIES	EACH COMPONENT FAILURE
14	1 CHECK BOX THAT APPLIES	SUPPLEMENTAL REPORT EXPECTED
15	6 TOTAL 2 PER BLOCK	EXPECTED SUBMISSION DATE

BACKGROUND INFORMATION

The reactor coolant system (RCS) (EIIS Code: AB) consists of four loops connected in parallel to the reactor vessel. Each loop consists of a hot leg, steam generator, isolation valves, reactor coolant pump and a cold leg. The RCS is connected to the pressurizer surge line through the loop 4 hot leg.

The loop isolation valves (EIIS Code: ISV) allow a single loop to be isolated from the remainder of the RCS. The bypass line in each loop permits recirculation of an isolated loop. The loop isolation valves are motor operated, 23 inch, parallel disk, gate valves. The stroke time for the loop isolation valves is 180 seconds.

EVENT DESCRIPTION

On September 13, 1996, at 1631 hours, with the plant in Mode 5 (cold shutdown) it was determined, during a review of shift manager logs, that the 30 minute limit from the time a reactor coolant system (RCS) loop boron sample is taken until the RCS loop stop valves are opened may have been exceeded on September 1, 1996 (mode 5). Technical Specification 4.4.1.7.3 requires that the isolated loop boron concentration be determined within 30 minutes prior to opening the loop stop valves.

Operators were performing procedure NOP 2.4-7, "Return of a Loop to Service with the Plant Shut Down" which requires that the isolated loop's boron concentration be greater than or equal to that required to meet the shutdown margin requirements.

Although the procedure contains the 30 minute requirement, it neither states at what time the "clock" starts or stops, nor does it have a place to record this information.

With the plant in cold shutdown, pressure is not adequate to obtain a coolant sample at the sample sink, located in the primary auxiliary building. Therefore, the chemistry technicians must go inside the reactor containment building and obtain a grab sample from a RCS drain valve. When the chemistry technicians notified the control room that they were out of the containment building with a sample the operator mistakenly recorded this as the time that the sample was obtained (the time that the "clock" was started).

On September 1, 1996, while returning loop 3 and 4 to service , the operator performing the procedure recorded 1722 hours ("time out of containment") in the shift log as the start time for the 30 minute period and then recorded that the stop valves were opened at 1752 hours, using this as the stop time for the 30 minute period.

A review of the chemistry sample logs indicated that the loop 3 sample was taken at 1715 and the loop 4 sample was taken at 1724. Therefore, the time period between taking the loop 3 boron sample and opening the loop 3 stop valves was 37 minutes, 7 minutes beyond the time period allowed by the Technical Specifications.

Later the same day, while returning loop 1 and 2 to service, a different operator recorded the "time out of containment" as 2056 and the stop valve opening time as 2124. A review of the chemistry sample logs indicated that the loop 1 sample was taken at 2045 and the loop 2 sample was taken at 2050. Therefore, the time period between taking the loop 1 and loop 2 boron samples and opening the loop 1 and loop 2 stop valves was 39 minutes and 34 minutes, respectively, both exceeding the time period allowed by the Technical Specifications.

CAUSE OF THE EVENT

The root cause of this event was Personnel Error - Written Communication. Deficiencies existed in the content of the procedure. The normal operating procedure (NOP 2.4-7) used to return an isolated RCS loop to service did not define the start/stop time for the 30 minute period nor did it require that these times be entered in the procedure for tracking purposes.

A contributing cause was Program Failure - Procedure Deficiencies. A failure in the procedure development process allowed the procedure deficiency to go undetected.

An additional contributing cause is Personnel Error - Work Practices. The operator failed to use the correct time (time of sample) for the start of the 30 minute clock. Instead of using the sample time, the operator used the time out of containment which was after the actual sample time.

SAFETY ASSESSMENT

This event is reportable under 10CFR50.73(a)(2)(i)(B) as a condition pronibited by the plant's Technical Specifications. Technical Specification 4.4.1.7.3 states:

"Within 30 minutes prior to opening the loop stop valves, the isolated loop shall be determined to have a boron concentration greater than or equal to the boron concentration required to meet the SHUTDOWN MARGIN requirements of Specification 3.1.1.2 or 3.1.1.3 or the refueling boron concentration of Specification 3.9.1.

This specification ensures that no unacceptable reactivity addition could occur during the startup of an isolated loop. Verification of the boron concentration in an isolated loop prior to opening the stop valves provides assurance of the adequacy of the boron concentration in the isolated loop.

Since the length of time between taking the boron sample and opening the loop stop valves only exceeded the 30 minute time limit by a maximum of 9 minutes, there was still adequate shutdown margin available in the isolated loops and therefore the safety significance of this event is low.

CORRECTIVE ACTION

NOP 2.4-7, "Return of a Loop to Service with the Plant Shut Down" will be revised to define the start and stop time for the 30 minute period allowed by the Technical Specifications. The procedure will also provide for recording the times. Additionally, the procedure will define the communication requirements between chemistry and operations department personnel.

The operations department has formed a new procedures group to upgrade the operations procedures.

The operators were counseled on the need to use the actual sample time as the start of the 30 minute period instead of using the "time out of containment".

ADDITIONAL INFORMATION

Commitments

The following are commitments made within this report. All other statements are for information only.

B15937-1 NOP 2.4, "Return of a Loop to Service with the Plant Shut Down" will be revised to define the start and stop time for the 30 minute period allowed by the Technical Specifications. The procedure will also provide for recording the times. Additionally, the procedure will define the communication requirements between chemistry and operations department personnel.

PREVIOUS SIMILAR EVENTS

LER 95-016-00, "Manual Reactor Trip and Safety Injection Due to Electrical Failure of Main Feed Pump"