

LICENSEE EVENT REPORT (LER)

(See reverse for required number of
digits/characters for each block)ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY
INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS
LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED
BACK TO INDUSTRY FORWARD COMMENTS REGARDING BURDEN
ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T:
6 F33), 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.

FACILITY NAME (1)

Haddam Neck

DOCKET NUMBER (2)

05000213

PAGE (3)

1 of 4

TITLE (4)

Non-QA Calculation Used to Support Control Room Habitability Design

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
09	18	97	97	003	01	09	05	97	FACILITY NAME	DOCKET NUMBER
										05000
										0500
OPERATING MODE (9)		N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)							
			20.2201(b)			20.2203(a)(2)(v)			50.73(a)(2)(ii)	50.73(a)(2)(viii)
POWER LEVEL (10)		000	20.2203(a)(1)			20.2203(a)(3)(i)			50.73(a)(2)(iii)	50.73(a)(2)(x)
			20.2203(a)(2)(i)			20.2203(a)(3)(ii)			50.73(a)(2)(iii)	73.71
			20.2203(a)(2)(ii)			20.2203(a)(4)			50.73(a)(2)(iv)	OTHER
			20.2203(a)(2)(iii)			50.36(c)(1)			50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iv)			50.36(c)(2)			50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

Jeff Bibby, Engineering Manager

TELEPHONE NUMBER (Include Area Code)

(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)

YES

(If yes, complete EXPECTED SUBMISSION DATE).

☒ NO

EXPECTED SUBMISSION

MONTH

DAY

YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On September 18, 1996, with the plant in Mode 5 (cold shutdown), it was determined, during a design and licensing bases reconstitution effort, that formal calculations to support the use of self contained breathing apparatus to ensure control room habitability, during and after a design basis accident, did not exist. This event was initially determined to be not reportable. On February 7, 1997, at approximately 1245 hours, with the plant defueled, this condition was reevaluated and determined to be reportable. Without such calculations continued habitability of the control room could not be assured, resulting in a condition that alone could have prevented control room operators from performing actions necessary to mitigate the consequences of an accident. The cause was programmatic deficiency in that a formal QA calculation should have been performed in 1981 when the decision was made to postpone installation of a filtered ventilation system for the control room. In 1986, this unresolved issue became part of the Integrated Safety Assessment Program (ISAP) which did not require formal QA calculations. In December 1996 the Haddam Nuclear Plant (HNP) was permanently defueled and power operations ceased. Corrective actions reflecting HNP status have been performed and consisted of reviewing ISAP issues associated with the defueled condition to determine the adequacy and formality of other calculations. In addition, a new accident analyses for the defueled condition has been performed.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Haddam Neck	05000213	97	-- 003	-- 01	2 of 4

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

BACKGROUND INFORMATION

By NRC order effective July 7, 1981, NUREG-0737 Item III.D.3.4, "Control Room Habitability", required Connecticut Yankee Atomic Power Company (CYAPCO) to perform the necessary analyses and modifications to meet the requirements of Criterion 19, "Control Room", of Appendix a, "General Design Criteria for Nuclear Power Plants", to 10CFR50. Criterion 19 requires licensees to assure that control room operators will be adequately protected against the effects of accidental release of radioactive gases and that the nuclear power plant can be safely operated or shut down under design basis accident (DBA) conditions. Release of such gases could potentially result in the control room becoming uninhabitable, preventing control room operators from performing actions required to mitigate the consequences of a design basis accident.

In a letter dated July 1, 1981, CYAPCO agreed to install a filtered ventilation system in the control room of the Haddam Neck Plant (HNP) to resolve the control room habitability issue. The NRC accepted the commitment in a subsequent letter and accompanying safety evaluation. In 1986 CYAPCO requested the NRC staff to include this issue in the Integrated Safety Assessment Program (ISAP) as the modification had not yet been installed and the expected safety benefit was low. The NRC staff agreed and the issue was reevaluated in ISAP. The evaluation concluded that the safety benefit was low and CYAPCO requested that the commitment be dropped. The NRC agreed in a letter dated March 8, 1993 to drop the commitment and continue reliance on self-contained breathing apparatus (SCBA) for control room habitability. The NRC added a condition to the approval that the control room habitability would need to be reevaluated when pending NRC generic guidance was issued. This generic letter was never issued, although new dose calculation computer models were released in December 1996.

EVENT DESCRIPTION

On September 18, 1996, with the plant in Mode 5 (cold shutdown), it was determined, during a design and licensing bases reconstitution effort, that formal QA calculations to support the use of self-contained breathing apparatus to ensure control room habitability, during and after a design basis accident, did not exist. This event was initially determined to be not reportable. On February 7, 1997, at approximately 1245 hours, with the plant defueled, this condition was reevaluated and determined to be reportable. Without such calculations, continued habitability of the control room could not be assured, resulting in a condition that alone should have prevented control room operators from performing actions necessary to mitigate the consequences of an accident.

An informal assessment of control room habitability during and after a DBA was performed as part of the HNP ISAP. The assessment relied upon unverified input assumptions and was not independently reviewed or approved. The assessment concluded that, with the use of SCBA, control room habitability could be assured

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Haddam Neck	05000213	97	-- 003	-- 01	3 of 4

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

and that doses received by the control room operators would remain under the limit of Criterion 19 of 10CFR50, Appendix A. Since 1986, habitability of the HNP control room has been based on the results of the informal assessment requiring the use of SCBA. Without verification of the input assumptions, independent review and approval, the conclusion of the informal assessment cannot be considered valid.

The delay between the discovery date and the report dates is attributed to failure to recognize this condition as reportable when first discovered and failure of the corrective action program to assure timely resolution.

CAUSE OF EVENT

The cause was a programmatic deficiency in that a formal QA calculation should have been performed in 1981 when the decision was made to postpone installation of a filtered ventilation system for the control room. In 1986, this unresolved issue became part of the Integrated Safety Assessment Program (ISAP) which did not require formal QA calculations. The ISAP process should also have triggered a change to the plant design basis when issues required by regulation or order were evaluated and scheduled via this process.

SAFETY ASSESSMENT

This condition is reportable under 10CFR50.73 (a) (2) (v) (D) as any event or condition that alone could have prevented mitigation of the consequences of an accident. A 10CFR 50.72 (b) (2) (iii) (D) report was made on February 7, 1997 at 1258 hours.

The safety consequences of this event are considered to have been minimal during past operation. While formal calculations do not exist, the use of SCBA would have provided some level of protection to control room operators and could be expected to allow necessary operator actions to be performed.

CYAPCO has decided to cease power operation of the HNP and all fuel has been permanently removed from the reactor vessel. New accident analysis for the defueled condition have been performed as part of the decommissioning process to assess control room habitability requirements.

CORRECTIVE ACTION

A review of ISAP items associated with the defueled condition was performed. The results of this effort indicate that no other ISAP calculations affect the permanently defueled status of HNP. A new tracking system for corrective actions has been implemented to assure that corrective actions are responded to in a timely manner. Also a new accident analyses assessing control room habitability requirements for the defueled condition has been performed. The analysis demonstrates that no protective actions such as control room operators donning SCBA equipment in the control room during a design basis accident is necessary.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Haddam Neck	05000213	97	-- 003	-- 01	4 of 4

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

ADDITIONAL INFORMATION

The calculational bases and results of the accident analysis are available from the licensee.

PREVIOUS SIMILAR EVENTS

NONE