CONNECTICUT YANKEE ATOMIC POWER COMPANY

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

October 22, 1996
Re: 10CFR50.73(a)(2)(i)
B15954

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 50-213/96-023-00

This letter forwards the Licensee Event Report 96-023-00, 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 50-213/96-023-00

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

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 4

TITLE (4)
Containment Air Recirculation Fans Failed Air Flow Test

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
08	14	96	96	-- 023 --	00	10	22	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)
Diane Carnesi, Technical Support	(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 August 14, 1996, at 1000 hours, with the plant in Mode 5 (cold shutdown) for the cycle 19 refueling and maintenance outage, while performing surveillance testing, three of four containment air recirculation (CAR) fans did not meet the Technical Specification requirement for air flow rates of 52,500 +/- 2,500 cfm. The as found high flow rates were 56,453 cfm, 56,501 cfm and 56, 217 cfm. The cause of the event was determined to be test method variability. Corrective action consists of adjusting the CAR fan inlet vanes and testing each CAR fan to verify flow rates are within the acceptance criterion prior to startup. In addition, a proposed Technical Specification change request was submitted to remove the upper limit of the Technical Specification air flow acceptance criterion. Implementation of the corrective action is contingent upon resumption of operation of the Haddam Neck Plant. A reportability evaluation was initiated and this event was determined to be reportable on September 25, 1996 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

Four containment air recirculation (CAR) fans (EIIS Code: BK) take suction near the outer periphery of the containment building middle level and discharge to a common duct which branches to distribution outlets within containment. During normal operation air enters the units through bypass dampers to cooling coils and then to the fan. These dampers bypass the accident mitigation section of the unit (chevron moisture separators, high efficiency particulate air (HEPA) filters and charcoal adsorbent trays). Under normal conditions the inlet to the accident mitigation section is blocked by the face dampers. Upon receipt of a safety injection/high containment pressure signal (EIIS Code: JM), the face dampers open and the bypass dampers close and air flows through the accident mitigation section of the CAR fan unit to the cooling coils to the fan. Technical Specification 3.6.2 requires four CAR units operable in Modes 1 through 4. Technical Specification 4.6.2 requires that each CAR unit be capable of operating with a flow rate of 52,500 +/- 2,500 cfm.

EVENT DESCRIPTION

On August 14, 1996, at 1000 hours, with the plant in Mode 5 (cold shutdown) for the cycle 19 refueling and maintenance outage, while performing surveillance testing, three of four containment air recirculation (CAR) fans did not meet the Technical Specification requirements for air flow rates. The air flow for three CAR fans was above the criterion of 52,500 +/- 2,500 cfm and the results were as follows:

#2 CAR fan = 56,453 cfm
#3 CAR fan = 56,501 cfm
#4 CAR fan = 56,217 cfm

A reportability evaluation was initiated and this event was determined to be reportable on September 25, 1996 under 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications.

CAUSE OF THE EVENT

The cause of the event was determined to be test method variability. Because of test method variability the actual flow may remain unchanged but the measurement of the flow varies enough to fall outside the acceptance criterion. The as found flow rates were within 5% of the as left flow rates. In addition, differential pressure measurements taken during as found and as left testing were, for all practical purposes, unchanged. Test method variability is inherent to air flow testing. The industry assumes testing to be accurate to +/- 10%.

SAFETY ASSESSMENT

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

While increasing the air flow may reduce the level (efficiency) of filtering in the charcoal filters, the increased air flow will counteract less filtering with a higher volume of filtered air. Evaluations have determined that, although the higher flow rate results in a lower efficiency, it also results in a higher overall iodine removal rate. Therefore, the higher CAR system air flow rates have a positive effect on offsite doses.

Higher CAR system air flow rates will also increase the amount of heat being removed by the CAR unit cooling coils. Calculations have shown that the heat removal capacity of each CAR unit can be as high as 50.1E6 btu/hr post LOCA, due to the increased CAR unit flow rates, assuming clean cooling coils and worst case (lowest) service water inlet temperature. The maximum CAR unit heat removal rate was used to determine minimum containment pressure for use in the ECCS evaluation. It has been determined that the highest heat removal capacity of the CAR fans is bounded by the ECCS evaluation.

Therefore, the safety significance of this condition is judged to be low.

A Technical Specification change request has been submitted to eliminate the upper flow limit.

CORRECTIVE ACTION

Corrective action consists of adjusting CAR fan inlet vanes and testing each CAR fan to verify flow rates are within the acceptance criterion prior to startup. As stated above, a proposed Technical Specification change request was submitted to remove the upper limit of the Technical Specification air flow rate acceptance criterion. Removing the upper flow limit will provide a larger operating window for the CAR units and remove an overly restrictive test criterion.

Implementation of the corrective action is contingent upon resumption of operation of the Haddam Neck Plant.

ADDITIONAL INFORMATION

Commitments

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

B15954-1 The CAR fan inlet vanes will be adjusted and each CAR fan will be tested to verify flow rates are within the acceptance criterion prior to startup.

Implementation of the commitments is contingent upon resumption of operation of the Haddam Neck Plant.

PREVIOUS SIMILAR EVENTS

LER 85-002-00, "Reduced Flow Rate Through #2,3 and 4 CAR Fans"
LER 91-004-00, "Plant Shutdown Due to Inadequate CAR Fan Air Flow"
LER 94-001-00, "Containment Air Recirculation Fans Failed Flow Test"
LER 95-004-01, "Containment Air Recirculation Fans Failed Air Flow Test"

The above LERs are similar in that in each event CAR fan air flow rates were outside the acceptance criterion. This event is unique in that this is the first LER for flow rates exceeding the upper limit. The causes identified were not similar to this event with the exception that LER 95-004-00 identified test method variability as a contributor.