



CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT

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

November 26, 1990
Re: 10CFR50.73(a)(2)(i)(A)
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 50-213/90-023-00

Gentlemen:

This letter forwards the Licensee Event Report 90-023-00, 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 50-213/90-023-00

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 0 4
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TITLE (4)
Plant Shutdown Due to Inoperability of Containment Fan Coolers

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	0	27	9	0	0	0	2	3	0	0	1	1	2	6	9	0	0	5	0	0	0

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

OPERATING MODE (9) 1	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(e)(1)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text NRC Form 366A)
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)		

LICENSEE CONTACT FOR THIS LER (12)

NAME R. W. Kasuga, Engineer	TELEPHONE NUMBER
	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 NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

ABSTRACT

On October 27, 1990, at 1440 hours, with the plant in Mode 1 at 100 percent power, two of four containment air recirculation (CAR) fans were declared inoperable after failing a service water surveillance test which measures the flow rates through the CAR fan coolers. In accordance with the plant's Technical Specifications, a load reduction was initiated at 1500 hours, the reactor was shut down at 2045 hours and the plant was placed in Mode 5 (cold shutdown) on October 28, 1990, at 1600 hours. The root causes of the event were excessive debris and the cleaning activities on the intake structure trash racks which clogged the service water filters. A contributing cause was the subsequent opening of the filter bypass valves which deposited debris in the CAR fan cooling coils. Corrective action consisted of inspecting, cleaning and testing all four CAR fan coolers and motor coolers. Action to prevent recurrence consists of improving the coordination of work activities which may affect the service water filters, increasing the frequency for filter cleaning and implementing procedural restrictions on the use of the bypass valves.

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

BACKGROUND INFORMATION

The two service water filters (EIIS Code: FLT) are part of the Containment Air Recirculation (CAR) Fan Cooling System (EIIS Code: BK) which is required to reduce Reactor Containment pressure after a design basis accident (DBA). During normal operation, one filter is in service and the other is in standby. These filters remove particulate matter from the cooling water to the CAR fan cooling coils and motor coolers. The filters have a backwash system which runs continuously to extend the time between filter plugging. During normal operation when the in-service filter becomes clogged, as evidenced by a low-flow alarm in the CAR fan coolers, an operator is dispatched to manually switchover to the standby unit thus isolating the clogged filter for cleaning. The filters were recently equipped with motor-operated bypass valves which provide the capability of remotely bypassing the filters if they become inoperable during an accident condition. Technical Specification 3.6.2 requires all four CAR fan units to be operable in Modes 1 through 4.

EVENT DESCRIPTION

The following conditions existed prior to the event:

1. Divers had been on site for a few weeks cleaning the trash racks at the intake structure which is located on the Connecticut River.
2. According to the divers, the silt suspension in the river was high. It had rained heavily a few days earlier.
3. The service water filters during the previous days required frequent backwashing.
4. On the morning of the event, one of the service water filters was taken out of service for cleaning.

On October 26, 1990, divers were cleaning the trash racks using a hydrolazer which is a method of cleaning not previously utilized on site. At 1500 hours Control Room operators received a "Containment Cooler Service Water Low Flow" alarm. The cause was the fouling of the second service water filter which reduced flow to the CAR fan coolers. In an attempt to increase service water flow to the fans, operators opened the filter bypass valves. This allowed unfiltered service water to be supplied to the CAR fan coolers. In order to verify that the coolers were operable under

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TEXT (If more space is required, use additional NRC Form 305A's) (17)

these conditions, a service water surveillance test was conducted to measure the flow to the coolers. Based on the test results, the No. 3 and No. 4 CAR fans were declared inoperable at 1440 hours on October 27, 1990. In accordance with the plant's Technical Specifications a load reduction was initiated at 1500 hours, the reactor was shut down at 2045 hours and the plant was placed in Mode 5 (cold shutdown) on October 28, 1990 at 1600 hours.

CAUSE OF THE EVENT

Subsequent investigation revealed that several tubes in the CAR fan coolers were plugged with rust nodules and debris that is postulated to have been transported by the high flow that resulted when the filter bypass valves were opened. Some silt was also found in the coolers. Both service water filters were found to be significantly clogged with river silt. The root causes of this event were excessive debris and the cleaning activities on the intake structure trash racks which clogged the service water filters. A contributing cause was the subsequent opening of the filter bypass valves which deposited debris in the CAR fan cooling coils.

SAFETY ASSESSMENT

This event is reportable under 10CFR50.73(a)(2)(i)(A) since it resulted in the completion of a plant shutdown required by the plant's Technical Specifications. The event is also reportable under 10CFR50.73(a)(2)(v)(D) since this condition alone could have prevented the fulfillment of a safety function of a system needed to mitigate the consequences of an accident. Fouling of the CAR fan coolers could result in insufficient heat removal from containment following a design basis accident which could challenge the integrity of the containment structure. Except for the short time it took to open the bypass valves, the No. 1 and No. 2 CAR fans remained operable; therefore, the safety impact of this event was minimal.

CORRECTIVE ACTION

Corrective action consisted of inspecting, cleaning and testing all four CAR fan coolers and motor coolers. Action to prevent recurrence consists of improving the coordination of work activities which may affect performance of the service water filters, increasing the frequency of filter cleaning, and implementing procedural restrictions on the use of the filter bypass valves except under accident conditions.

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

ADDITIONAL INFORMATION

None

PREVIOUS SIMILAR EVENTS

LER 90-001-00