

## 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 3																																																									
TITLE (4) Electric Fire Pump Declared Inoperable Due to High Amperage																																																																													
EVENT DATE (5)									LER NUMBER (6)									REPORT DATE (7)									OTHER FACILITIES INVOLVED (8)																																																		
MONTH			DAY			YEAR			YEAR			SEQUENT AL NUMBER			REVISION NUMBER			MONTH			DAY			YEAR			FACILITY NAMES												DOCKET NUMBER(S)																																						
0			2			0			4			8			8			8			8			8			8			0			0			3			0			0			3			8			8															0 5 0 0 0											
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OPERATING MODE (9) 6									THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)																																																																				
POWER LEVEL (10) 0 1 0 1 0									20.402(b)									20.405(c)									50.73(a)(2)(iv)									73.71(b)																																									
									20.405(a)(1)(i)									50.38(c)(1)									50.73(a)(2)(v)									73.71(c)																																									
									20.405(a)(1)(ii)									50.38(c)(2)									50.73(a)(2)(vi)									X OTHER (Specify in Abstract below and in Text, NRC Form 366A)																																									
									20.405(a)(1)(iii)									50.73(a)(2)(i)									50.73(a)(2)(vii)																																																		
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LICENSEE CONTACT FOR THIS LER (12)																																																																													
NAME K. C. Beganski, Engineer																				TELEPHONE NUMBER 2 0 3 2 1 6 7 - 2 5 5 6																																																									
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																																																													
CAUSE		SYSTEM		COMPONENT		MANUFACTURER		REPORTABLE TO NRRDS		CAUSE		SYSTEM		COMPONENT		MANUFACTURER		REPORTABLE TO NRRDS		CAUSE		SYSTEM		COMPONENT		MANUFACTURER		REPORTABLE TO NRRDS																																																	
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SUPPLEMENTAL REPORT EXPECTED (14)																																																																													
YES (If yes, complete EXPECTED SUBMISSION DATE)																				X NO										EXPECTED SUBMISSION DATE (15)																																															
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ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single-space typewritten lines) (16)

## ABSTRACT

At 0933, on February 4, 1988 with the plant in Mode 6 and the reactor core off loaded, the electric driven fire pump was declared inoperable due to high amperage measured after a manual start. Backup fire water supply is provided by the diesel driven fire pump.

The cause of the inoperability was physical damage to the stuffing box brass bushing located in the upper shaft area of the electric driven fire pump. This caused the brass bearing to shear, resulting in a locked rotor condition. Based on our evaluation and discussions with the manufacturer, it appears that operating the pump at low flow conditions may have caused this failure.

Repairs to the electric fire pump have been initiated and it is expected to be returned to service by March 15, 1988.

This report is submitted as required by Technical Specification 3.22.A.2 which states that if the pump cannot be restored to operable status within seven days, a Special Report will be submitted within 30 days of the occurrence.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104  
EXPIRES: 8/31/86

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Haddam Neck	0 5 0 0 0 2 1 3 8 8	—	0 0 3	—	0 0	0 2	OF 0 3

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

## BACKGROUND INFORMATION

Fire water is pumped from the Connecticut River, which is considered an unlimited source.

The fire-water system (EIIIS System Code: KP) has been designed to provide fire water for the simultaneous operation of the two largest adjacent water spray systems of the plant.

Two redundant fire pumps are provided, each rated at 2500 gpm with a 115 psig discharge pressure. One pump has an electric drive that starts when the system pressure drops to 90 psig. The second pump is diesel-driven and starts when the system pressure drops to 80 psig.

Both pumps are located in the Screenwell Pumphouse and are physically positioned about 35 feet apart. Both pumps have local-auto (pressure switch) and remote-manual (hand switch on main control board) start.

The two fire-water pumps feed a common 12-inch header that, in turn, feeds the underground piping loop around the entire plant serving fire hydrants. Valved branches from the piping loop supply water to the fire water suppression systems in the plant. The pumps are redundant, with independent power supplies and controls.

## EVENT DESCRIPTION

At 0933, on February 4, 1988, with the plant in Mode 6 and the reactor core off loaded, the electric driven fire water pump was declared inoperable due to a high ampereage condition noted after a manual start while performing routine surveillance. The normal indication of 200 amps increased to 340-360 amps during this time. During a second manual restart, for observation by Maintenance personnel, the indication increased to 1000 amps.

The cause of the inoperability was physical damage to the stuffing box brass bushing located in the upper shaft area of the electric driven fire pump. This caused the brass bearing to shear, resulting in a locked rotor condition.

Operation of the pump at or near shutoff head occurred during the containment Integrated Leak Rate Test (ILRT) when the electric driven fire pump was utilized to provide cooling water to the air compressors' cooling manifold. Based on our evaluation and our discussion with the manufacturer, it appears that operating at low flow conditions may have caused this failure.

Backup fire water supply is provided by the diesel driven fire pump.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)  Haddam Neck	DOCKET NUMBER (2)  0 5 0 0 0 2 1 3	LER NUMBER (6)			PAGE (3)		
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

## CAUSE OF EVENT

Contributing factors that appear to be related to the cause of the event are:

1. Prolonged operation of the pump at or near shutoff head occurred during the ILRT. The electric driven fire pump was utilized to provide cooling water to the air compressors' cooling manifold. Based on our evaluation and discussion with the manufacturer, it appears that operating the pump at low flow indication may have caused this failure.
2. The packing gland nuts were found to be overtightened.

## SAFETY ASSESSMENT

The plant fire water supply is arranged with two redundant pump units, each providing a 2500 gpm supply. While the electric fire pump is out of service, the diesel driven fire pump is providing a backup supply.

Based on the fact that the redundant fire pump is in service, fire protection water supply is maintained. Therefore, this temporary loss of the redundant electric pump has been determined to have a very low safety significance.

This event is reportable per Technical Specification 3.22.A.2, which requires a special report to be submitted if the fire pump is not returned to service within seven (7) days.

## CORRECTIVE ACTION

The corrective actions are as follows:

1. Repairs to the electric fire pump have been initiated and it is expected to be returned to service by March 15, 1988.
2. The electric and diesel driven fire water pumps will not be used for anything other than their intended purpose unless an engineering evaluation is performed prior to their use.
3. The packing gland nut was loosened to allow for more leakage to drain.
4. A corrective maintenance procedure will be generated to address the disassembly, inspection and repair of the electric fire pump. It is expected that this procedure will be approved by May 1, 1988.

## PREVIOUS SIMILAR EVENTS

LER 86-014-00.



CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT

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

March 3, 1988

Re: Technical Specifications 3.22.A.2

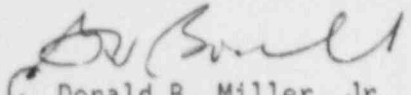
U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D. C. 20555

Reference: Facility Operating License No. DPR-61  
Docket No. 50-213  
Reportable Occurrence LER 50-213/88-003-00

Gentlemen:

This letter forwards the Licensee Event Report 88-003-00, required to be submitted, pursuant to the requirements of Connecticut Yankee Technical Specifications.

Very truly yours,

  
Donald B. Miller, Jr.  
Station Superintendent

DBM:REB/dfv

Attachment: LER 88-003-00

cc: Mr. William T. Russell  
Regional Administrator, Region I  
475 Allendale Road  
King of Prussia, PA 19406

J. T. Shedlosky  
Sr. Resident Inspector  
Haddam Neck

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