

# NORTHEAST UTILITIES



The Connecticut Light And Power Company  
Western Massachusetts Electric Company  
Holyoke Water Power Company  
Northeast Utilities Service Company  
Northeast Nuclear Energy Company

General Offices: Selden Street, Berlin, Connecticut

P.O. BOX 270  
HARTFORD, CONNECTICUT 06414-0270  
(203)665-5000

April 18, 1990

MP-90-375

Re: 10CFR50.73(a)(2)(v) &  
10CFR50.73(a)(2)(i)

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

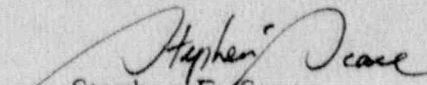
Reference: Facility Operating License No. NPF-49  
Docket No. 50-423  
Licensee Event Report 90-010-00

Gentlemen:

This letter forwards Licensee Event Report 90-010-00 submitted pursuant to 10CFR50.73(a)(2)(v), any event or condition that alone could have prevented the fulfillment of the safety function of systems that are needed to mitigate the consequences of an accident, and 10CFR50.73(a)(2)(i), any operation or condition prohibited by the plant's Technical Specifications.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

  
Stephen E. Scace  
Director, Millstone Station

SES/GCK:tp

Attachment: LER 90-010-00

cc: T. T. Martin, Region I Administrator  
W. J. Raymond, Senior Resident Inspector, Millstone Unit Nos. 1, 2 and 3  
D. H. Jaffe, NRC Project Manager, Millstone Unit No. 3

9004270201 900418  
PDR ADDCK 05 00423  
S PDC

*LE22*  
*Cert No*  
*P702503630*

## LICENSEE EVENT REPORT (LER)

Estimated burden per response to comply with this information collection request: 50.0 hrs. Forward comments regarding burden estimate to the Records and Reports Management Branch (p-530), U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503.

FACILITY NAME (1) Millstone Nuclear Power Station Unit 3										DOCKET NUMBER (2) 0 5 0 0 0 4 2 3				PAGE (3) 1 OF 0 4					
TITLE (4) Auxiliary Building Ventilation Filters Inoperable Due to Equipment Failure																			
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										
0	3	1	9	9	0	9	0	0	1	0	0	0	4	1	8	9	0	0 5 0 0 0 0	
OPERATING MODE (9)		THIS REPORT IS BEING SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)																	
1		20.402(b)				20.402(c)				50.73(a)(2)(iv)				73.71(b)					
POWER LEVEL (10)		20.405(a)(1)(i)				50.36(c)(1)				X 50.73(a)(2)(v)				73.71(c)					
1		20.405(a)(1)(ii)				50.36(c)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)					
		20.405(a)(1)(iii)				X 50.73(a)(2)(i)				50.73(a)(2)(viii)(A)									
		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 Gordon C. Knight, Engineering Technician, x5524												TELEPHONE NUMBER AREA CODE 2 0 3 4 4 7 - 1 7 9 1							
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																			
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC									
X	V	F	B	K	R	G	1	8	4	Y									
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 fifteen single-space typewritten lines) (16)

On March 19, 1990 at 100% power in Mode 1, 587 degrees Fahrenheit and 2250 psia, both trains of the Auxiliary Building Filters became inoperable when the "B" Train Auxiliary Building Filter circuit breaker motor failed while the "A" Train Auxiliary Building Filter had been removed from service for preventive maintenance. Inoperability of the "A" Train filter invoked Limiting Condition for Operation (LCO) 3.7.9 with a seven day action statement. When the "B" Auxiliary Building filter was placed in service and subsequently shutdown as part of a routine evolution, a circuit breaker malfunction resulted in inoperability of the "B" train. The plant entered LCO 3.0.3 (with a one hour action statement).

The root cause of the event was fatigue failure of the motor driving pawl spring for the "B" Auxiliary Building Filter circuit breaker.

As corrective action, work on the "A" filter inspection was stopped and the unit restored to operable status. The unit was placed back in service and LCO 3.03 was exited. Duration of the event was 29 minutes. The failure of the motor driving pawl spring is considered an isolated incident.



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

Estimated burden per response to comply with this information collection request: 50.0 hrs. Forward comments regarding burden estimate to the Records and Reports Management Branch (p-530), U. S. Nuclear Regulatory Commission, Washington, DC 20555, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503.

FACILITY NAME (1)  Millstone Nuclear Power Station Unit 3	DOCKET NUMBER (2)  0 5 0 0 0 4 2 3 9 0 -	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		0 1 0 -	0 1 0 -	0 0	0 2	OF	0 4

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

I. Description of Event

On March 19, 1990 at 100% power in Mode 1, 587 degrees Fahrenheit and 2250 psia, both trains of the Auxiliary Building Filters became inoperable when the "B" Train Auxiliary Building Filter circuit breaker motor failed while the "A" Train Auxiliary Building Filter had been removed from service for preventive maintenance.

On March 19, 1990, at 0327 hours, the "A" Auxiliary Building filter, 3HVR\*FLT1A, was removed from service in order to perform its required six month preventive maintenance surveillance. "Inoperability" of 3HVR\*FLT1A invoked a Technical Specification Limiting Condition for Operation (LCO) action statement which required the filter to be restored to operable status within seven days.

On March 19, 1990, at 0720 hours, the "B" train Auxiliary Building filter (3HVR\*FLT1B) was placed in service in response to radiological activity caused by Reactor Coolant System sampling. 3HVR\*FLT1B was subsequently shut down at 0817 hours. At 0851 hours, control room operators received a loss of control power alarm for load center 32X. A non-licensed operator (PEO) was immediately dispatched to investigate the cause of the alarm. The PEO discovered that the circuit breaker motor for 3HVR\*FLT1B had failed. Shift management immediately entered Technical Specification 3.0.3 which required event resolution within one hour. Plant personnel restored 3HVR\*FLT1A to service at 0920 hours and Technical Specification 3.0.3 was cleared. Both 3HVR\*FLT1A and 3HVR\*FLT1B had been inoperable simultaneously for a duration of approximately 29 minutes.

II. Cause of Event

The root cause of the event was fatigue failure of the driving pawl spring associated with the 3HVR\*FLT1A circuit breaker charging motor. The spring failed at a severe 90 degree bend near the hook.

The charging motor moves a driving pawl, which in turn drives a ratchet wheel and causes the closing spring to charge, or be placed under tension. The spring is used to return the driving pawl to a position from which it can drive the ratchet wheel. The charging motor stops via a limit switch which is driven off of the ratchet wheel.

When 3HVR\*FLT1B was shut down, the spring on the driving pawl failed. With the spring broken, the charging motor continued to operate but could not turn the ratchet wheel. As a result the limit switch stop could not be actuated and the charging motor operated continuously until failure.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

Estimated burden per response to comply with this information collection request: 50.0 hrs. Forward comments regarding burden estimate to the Records and Reports Management Branch (p-530), U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503.

FACILITY NAME (1)  Millstone Nuclear Power Station Unit 3	DOCKET NUMBER (2)  0500042390	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		90	010	00	03	OF 04

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

III. Analysis of Event

This event is reportable pursuant to 10CFR50.73(a)(2)(v), as an event or condition that alone could have prevented the fulfillment of the safety function of structures or systems need to control the release of radioactive materials and pursuant to 10CFR50.73(a)(2)(i), any event or condition prohibited by the Technical Specifications.

The event was not reported immediately per the requirements of 10CFR50.72(b)(2)(iii). On March 28, 1990, a late notification was performed following a reportability evaluation.

In response to a Safety Injection Signal, the Auxiliary Building filter units are designed to align to the atmosphere to filter building effluent, prior to release through the plant ventilation vent on the Turbine Building auxiliary bay roof. The Auxiliary Building filtration system ensures that radioactive materials leaking from the equipment within the charging pump, reactor plant component cooling pump, and heat exchanger areas following a Loss of Coolant Accident (LOCA) are filtered prior to reaching the environment. The Final Safety Analysis Report (FSAR) (section 15.6.5.4) addresses the radiological consequences of a large break LOCA. This takes credit for the Auxiliary Building Supplementary Leak Collection and Release System (SLCRS) and the Auxiliary Building filtration units in computation of off-site radiological doses. Each Auxiliary Building filtration unit train filters 30,000 cfm, while the SLCRS filters process approximately 2,730 cfm of air from the Auxiliary Building.

If a LOCA were to occur with the two Auxiliary Building filter units inoperable, the thyroid doses to the Low Population Zone and Exclusion Area Boundary would be impacted. A slight increase in the thyroid dose is anticipated for the Low Population Zone (over a 30 day period). However, the anticipated dose would be below the 300 rem thyroid dose limit per 10CFR100 guidelines. An increase above the 300 rem thyroid dose limit for the Exclusion Area Boundary is anticipated given the aforementioned scenario.

IV. Corrective Action

As immediate corrective action, work on the filter inspection of 3HVR\*FLT1A was stopped and the unit was restored to operable status. The unit was placed back in service and Technical Specification 3.0.3 was exited at 0920 hours on March 19, 1990. The failure of the motor driving pawl spring is considered an isolated incident. Therefore, no further corrective action is planned.

V. Additional Information

There are no similar incidents with the same root cause and sequence of events. A review of the Institute of Nuclear Power Operations (INPO) Nuclear Plant Reliability Data System (NPRDS) data base did not reveal any other failures of this type. The breaker manufacturer is Gould-Brown Boveri, Model K600.

EHS CodesSystem

Auxiliary Building Environmental  
Control System - VF

Components

Breaker - BKR



**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

Estimated burden per response to comply with this information collection request: 50.0 hrs. Forward comments regarding burden estimate to the Records and Reports Management Branch (p-530), U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503.

FACILITY NAME (1)

Millstone Nuclear Power Station  
Unit 3

DOCKET NUMBER (2)

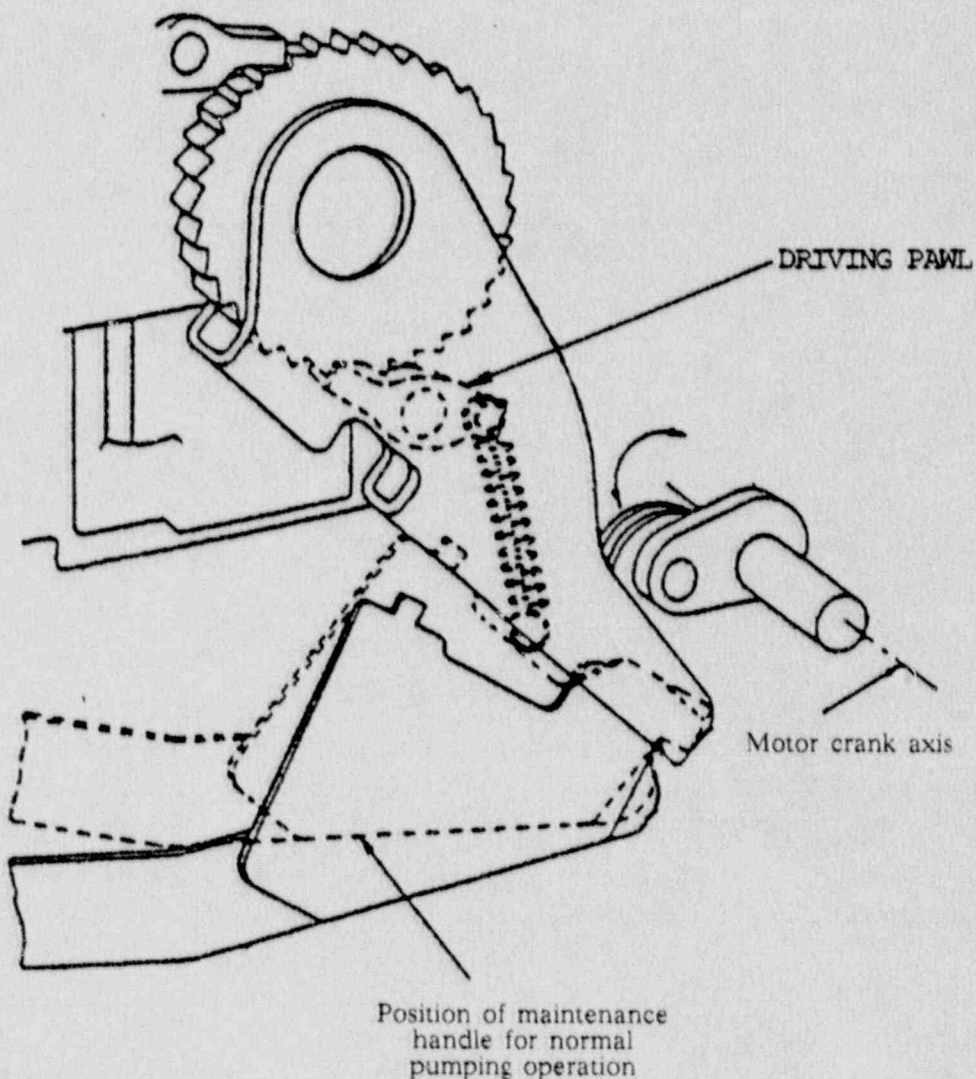
0 5 0 0 0 4 2 3 9 0 - 0 1 0 - 0 0 0 4 OF 0 4

LER NUMBER (5)

YEAR SEQUENTIAL NUMBER REVISION NUMBER

PAGE (3)

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



FIGURE

CHARGING MOTOR DRIVING PAWL AND SPRING ASSEMBLY