

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 - Seiden Street, Berlin Connecticut

P. O. BOX 270
HARTFORD, CONNECTICUT 06414-0270
(203) 655-5000

December 21, 1990
MP-90-1328

Re: 10CFR50.73(a)(2)(iv)

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

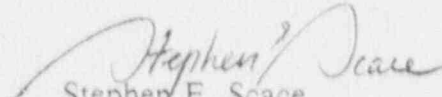
Reference: Facility Operating License No. DPR-65
Docket No. 50-336
Licensee Event Report 90-009-01

Gentlemen:

This letter forwards update Licensee Event Report 90-009-01.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY


Stephen E. Scace
Director, Millstone Station

SES/WCS:mo

Attachment: LER 90-009-01

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

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LICENSEE EVENT REPORT (LER)

Estimated burden for response to comply with this information collection request: 50 0 hrs. Forward comments regarding burden estimate to the Records and Reports Management Branch (p-630), 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 2										DOCKET NUMBER (2) 0 5 0 0 0 3 3 6 1			PAGE (3) OF 0 3	
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TITLE (4)
Inadvertent Actuation of Train "B" EBFS

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 6	1 7	9 0	9 0	0 0 9	0 1	1 2 2	1 9	0	0 5 0 0 0 0 0 0 0 0 0 0		

OPERATING MODE (9)		THIS REPORT IS BEING SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following (11))										
POWER LEVEL (10) 0 8 9		20.402(b)			20.402(b)			<input checked="" type="checkbox"/> 50.75(a)(2)(iv)		73.71(b)		
		20.405(a)(1)(i)			50.36(c)(1)			50.75(a)(2)(v)		73.71(c)		
		20.405(a)(1)(ii)			50.36(c)(2)			50.75(a)(2)(vi)		OTHER (Specify in Abstract below and in Text, NRC Form 366A)		
		20.405(a)(1)(iii)			50.75(a)(2)(i)			50.75(a)(2)(vii)(A)				
		20.405(a)(1)(iv)			50.75(a)(2)(ii)			50.75(a)(2)(vii)(B)				
		20.405(a)(1)(v)			50.75(a)(2)(iii)			50.75(a)(2)(ix)				

LICENSEE CONTACT FOR THIS LER (12)										TELEPHONE NUMBER		
NAME Woodrow C. Saccoccio, Engineer, Ext. 4460										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	J E	X I C	C 5 6 0	N					

SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		
<input type="checkbox"/> YES (if yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> NO		
										MONTH DAY YEAR		

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

While operating at 89% power on June 17, 1990, at 0118, the Unit experienced an inadvertent partial actuation of Train "B" of the Auxiliary Exhaust Actuation System (AEAS) coincident with an operator changing a light bulb on the Z2 Emergency Diesel Generator Load Sequencer. Fans F-25B (Enclosure Building Filtration Fan) and F-32B (Control Room Filtration Fan) started and dampers 2-EB-42 and 2-HV-210 opened. Operators verified that Train "B" of the Enclosure Building Filtration System (EBFS) and the Control Room Air Conditioning (CRAC) System were operating properly and secured both systems. The control operators responded in accordance with the applicable portions of AOP 2571 by informing the necessary management personnel and securing equipment as necessary.

Two additional events occurred on July 11, 1990, at 0425 and 0705 with the unit at 100% power. The first involved a spurious start of fan F-25B along with the opening of 2-EB-42. This occurred approximately 37 seconds after resetting a separate actuation module in the same ESAS cabinet, following a planned auto start of pump P-19B ('B' Boric Acid Pump) for surveillance testing. At that time, the Sequence 2 light bulb on the Z2 Emergency Diesel Generator Load Sequencer was not illuminated. The second additional event was nearly identical to the initial occurrence of June 17, 1990.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

Estimated burden per response to comply with this information collection request: 60.0 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 2	DOCKET NUMBER (2) 0 5 0 0 0 3 3 6 9 0	LER NUMBER (6)			PAGE (3) 0 2 OF 0 3
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
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TEXT (if more space is required, use additional NRC Form 366A s) (17)

I. Description of Events

On June 17, 1990, at 0118 hours with the plant operating at 89% of full load, a spurious partial actuation of the Train "B" AEAS took place while an operator was changing the Sequence 2 light bulb on the Z2 Emergency Diesel Generator Load Sequencer.

The control room operators noted that fans F-25B (Enclosure Building Filtration Fan) and F-32B (Control Room Filtration Fan) started and that dampers 2-EB-42 and 2-HV-210 went to the open positions. The Engineered Safeguards Actuation System (ESAS) instrumentation and indicating lights were reviewed and it was determined that none of the bistables had reached their setpoints and that none of the actuation modules had tripped and latched. The reset buttons on the actuation modules were pushed and nothing reset, indicating that the AEAS actuation module (AM613) had momentarily tripped but had not exceeded its 30 millisecond (ms) latching time. The CRAC and the EBFS were verified to be operating properly and then both systems realigned for normal operation.

Two additional events occurred on July 11, 1990, at 0425 and 0705 with the unit at 100% power. The first involved a spurious start of fan F-25B along with the opening of 2-EB-42. This occurred approximately 37 seconds after resetting a separate actuation module in the same ESAS cabinet, following a planned auto start of pump P-19B ('B' Boric Acid Pump) for surveillance testing. At that time, the Sequence 2 light bulb on the Z2 Emergency Diesel Generator Load Sequencer was not illuminated. The second additional event was nearly identical to the initial occurrence of June 17, 1990.

II. Cause of Events

The starting of fans F-25B and F-32B was initially believed to be from a spurious actuation of the Enclosure Building Filtration System Actuation Module (AM 608). Investigation of these events revealed a ground between the manual actuation relay in the AEAS actuation module (AM613) and hand switch HS 8623B. It is hypothesized that the ground condition completed a current path for a random, unknown source of electromagnetic interference. This would allow charging of the capacitor that is paralleled with the relay coil, to a voltage large enough to energize the relay coil and momentarily trip the module.

The sequence of events was reviewed and it was determined that no alarms locked in during the momentary trip. It is therefore difficult to determine whether actuation module AM608 or AM613 actually tripped, since both start fans F25B and F32B. It is only an assumption, because of the associated grounding problem, that actuation module AM613 tripped.

Finally, no direct connection can be made between the sequencer light bulb problem and these events since the sequencer light bulb was only loose. However, it is possible because of the close physical proximity to AM613, that the loose light bulb was the random source of EMI, which emanated from any arcing that took place during intermittent light bulb contact. In addition, the events could not be duplicated during troubleshooting. This was probably due to the inability to replicate the exact conditions at the time of the occurrences. In summary, with the exception of the grounded wire on HS 8623B, no factual evidence could be obtained to determine an absolute root cause for these events.

III. Analysis of Events

This event was reported pursuant to the requirements of 10CFR 50.73(a)(2)(iv), a condition which resulted in manual or automatic actuation of any Engineered Safety Feature.

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 2	DOCKET NUMBER (2) 0 5 0 0 0 3 3 6 9 0	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		0 0 9	0 1	0 3	OF	0 3

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

The partial initiation of Train "B" of the AEAS on June 17, 1990, and July 11, 1990, at 0705 is believed to have resulted from a momentary trip of the actuation module (AM613) that initiates this function. This trip was not greater than the 30ms required to latch the actuation module which resulted in a partial initiation of the safety function. This would be expected since fans F-25B and F-32B only require a momentary AEAS contact actuation to start and then their associated control circuitry seals in their contactors, regardless of the AEAS contact status. Dampers 2-EB-42 and 2-HV-210 are driven off auxiliary contacts on the fan motor contactors and therefore went to their accident (open) positions. Although other equipment is also controlled by this same actuation module, none was observed to change state due to the short (less than 30ms) duration trip of the actuation module and the absence of seal-in circuitry. The event occurring on July 11, 1990, at 0425 involved only the starting of Train "B" Enclosure Building Filter Fan F-25B, the opening of damper 2-EB-42 and, the fact that the Sequence 2 light bulb of the Z2 Emergency Diesel Generator Load Sequencer was not illuminated. It is postulated that the different pick-up response times of the relays and contactors associated with fans F-25B and F-32B resulted in only the starting of F-25B. Finally, the event which occurred on July 11, 1990, at 0705 was similar to the one which occurred on June 17, 1990. The Sequence 2 light bulb problem on the Z2 Emergency Diesel Generator Load Sequencer was being investigated when the event occurred.

No safety consequences resulted from the starting of Fans F-25B and F-32B and the actuation of their associated discharge dampers. The operation of this equipment did not impact plant or personnel safety since it did not create any adverse conditions.

IV. Corrective Action

Engineering reviewed the control schematics for all of the equipment listed in OP 2384 required to operate during a Train "B" actuation of AEAS and those listed on the associated Plant Incident Reports. It was confirmed that all of the equipment associated with the AEAS operated correctly, considering the momentary trip of actuation module AM613 and various response times of fan motor control circuitry. The ground on HS 8623B has been removed and the light bulb in the sequencer has been tightened. No further problems have been experienced.

V. Additional Information

- Similar LER'S: None
- EIIS Code JE:C560;XC - Engineered Safety features actuation System
- EIIS Code NR:B515;FAN - F32B Control Room Filtration Fan
- EIIS Code NR:H260;CDMP - 2-HV-210 Control Room Inlet Damper
- EIIS Code VC:B515;FAN - F25B Enclosure Building Filter Fan
- EIIS Code VC:H260;CDMP - 2-EB-42 Enclosure Bldg. Filtration Fan Discharge Damper