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Senior Vice President and
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NYN-92098

July 13, 1992

United States Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

References: Facility Operating License No. NPF-86, Docket No. 50-443

Subject: Facility Operating Report (LER) 92-06-00: Control Room Ventilation System Isolation Due to Smoke Alarm

Gentlemen:

Enclosed please find Licensee Event Report (LER) No. 92-06-00 for Seabrook Station. This submittal documents an event which occurred on June 12, 1992, and is being reported pursuant to 10 CFR 50.73(a)(2)(iv).

Very truly yours,

Ted C. Feigenbaum

TCF:JES
Enclosures: NRC Forms 366, 366A

cc: Mr. Thomas T. Martin
Regional Administrator
U.S. Nuclear Regulatory Commission
Region 1
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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
SEABROOK STATION	0 5 0 0 0 4 4 3	1 OF 0 3

TITLE (4)
Control Room Ventilation Isolation Due to Smoke Alarm

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)
0 6	1 2	9 2	9 2	— 0 0 6	— 0 0	0 7	1 3	9 2		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0 0	20.402(b)	20.405(c)	X 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 (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	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	TELEPHONE NUMBER
Mr. A. L. Legendre, Jr., Lead Engineer Compliance (extension 2373)	AREA CODE 6 0 3 4 7 4 - 9 5 2 1

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 fifteen single-space typewritten lines) (16)

On June 12, 1992, at 14:30 p.m. EDT, a smoke detector (CBA-AM 5351) in the Control Room east air intake actuated a high smoke concentration alarm which prompted operations personnel to place both trains of the Control Room Ventilation (CBA) System [VI] in the recirculation mode. Subsequent investigation revealed that no abnormal condition existed. The cause of the incident was determined to be a spurious alarm signal from the east air intake smoke detector CBA-AM-5351. Placing the CBA System in the recirculation mode is an actuation of an ESF System.

Upon determination that the smoke alarm was caused by a spurious signal, actions were taken to place the CBA System back into its normal operational alignment.

There were no adverse safety consequences as a result of this event.

The root cause for the spurious smoke alarm signal was determined to be adverse environmental conditions. Specifically, the presence of high humidity and possible low detector temperatures may have caused fogging of the smoke detector lens with condensation.

Corrective actions to prevent recurrence included initiating a work request to recalibrate the smoke detector. North Atlantic will also evaluate implementation of design changes to stabilize the environment where smoke detector CBA-AM-5351 is located.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
SEABROOK STATION	0 5 0 0 0 4 4 3	9 2	— 0 0 6	— 0 0	0 2 OF 0 3

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

Description of Event

On June 12, 1992, at 14:30 p.m. EDT, a smoke detector (CBA-AM-5351) in the Control Room east air intake actuated a high smoke concentration alarm (D7040) for four seconds. The same alarm was actuated a second and third time following two automatic resets. The third alarm, which lasted for 83 seconds, caused a Control Room makeup air isolation alarm (F6998) to occur. In response to this alarm, and in accordance with Video Alarm System guideline F7047, "East Air Intake Smoke Conc. High," operations personnel placed both trains of the Control Room Ventilation (CBA) System [VI] in the filter recirculation mode. Operations personnel also dispatched a firefighter to verify the existence of an actual fire. This investigation revealed that there was no fire or smoke in the area of the Control Room east air intake. Upon determination that the smoke concentration alarm was not due to smoke, operations personnel shutdown both trains of CBA filter recirculation and restored normal CBA Control Room ventilation.

Safety Consequences

There were no adverse safety consequences as a result of this event. Upon actuation, the filter recirculation mode of the CBA System functioned as designed. At no time during this event was there any impact on the health and safety of plant employees or the public.

Root Cause

The root cause for the spurious smoke alarm signal was determined to be adverse environmental conditions. Specifically, the presence of high humidity and possible low detector temperatures may have caused fogging of the smoke detector lens with condensation. The presence of condensation can alter the detector's ability to accurately measure the opacity of the air flow, and hence cause the detector to actuate a high smoke concentration alarm.

Corrective Actions

A Work Request was performed to check the calibration of the Control Room east air intake smoke detector. The detector was found to be slightly out of calibration. The detector was recalibrated and returned to service. The unit heater associated with the east air intake was also checked and it was determined to be operating properly.

A review of the work history for smoke detector CBA-AM-5351 was conducted to review other occurrences of spurious alarms. The review indicated that, for the most part, other spurious alarms occurred in the summer months when adverse environmental conditions (e.g., high humidity) may have been present. Adverse environmental conditions may have caused the fogging of the detector lens with condensation.

A comparison of the work histories for smoke detectors CBA-AM-5351, and CBA-AM-5353 (Control Room west air intake smoke detector) was also conducted. The histories were similar until August 1991, when CBA-AM-5353 was relocated from the west air intake to the Diesel Generator Building. Since that time no problems have been noted with CBA-AM-5353, and it is believed that this is attributed to the milder environmental conditions present in the Diesel Generator Building.

Based on the above, North Atlantic will evaluate implementation of design changes to stabilize the environment where smoke detector CBA-AM-5351 is located.

Plant Conditions

At the time of this event, the plant was in MODE 1, Power Operation, with a Reactor Coolant System temperature of 588.5 degrees Fahrenheit and pressure of 2235 psig.

This is the first time the CBA System was manually isolated in response to a spurious smoke alarm signal at Seabrook Station. North Atlantic has submitted several LER's relating to CBA System isolation caused by radiation monitor malfunctions and other causes not associated with smoke alarms.