



**North  
Atlantic**

North Atlantic Energy Service Corporation  
P.O. Box 300  
Seabrook, NH 03874  
(603) 474-9521, Fax (603) 474-2987

The Northeast Utilities System

Ted C. Feigenbaum  
Senior Vice President &  
Chief Nuclear Officer

NYN- 95088

October 30, 1995

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

Attention: Document Control Desk

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

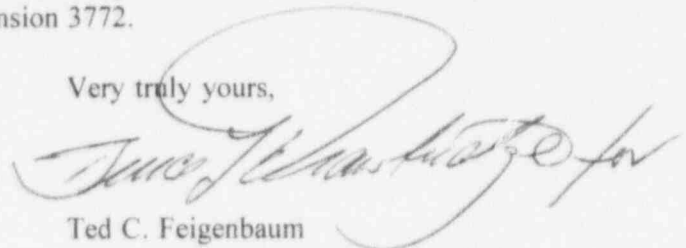
Subject: Licensee Event Report (LER) No. 95-003-01: "Inadequate Area Temperature Monitoring  
Surveillances"

Gentlemen:

Enclosed please find supplemental Licensee Event Report (LER) No. 95-003-01 for Seabrook Station. This submittal reflects the root cause, previous occurrences, additional information and corrective actions.

Should you require further information regarding this matter, please contact Mr. James M. Peschel, Regulatory Compliance Manager, at (603) 474-9521, extension 3772.

Very truly yours,



Ted C. Feigenbaum

TCF:EWM/sm

Enclosures: NRC Forms 366/366A

000014

9511060029 951030  
PDR ADDCK 05000443  
S PDR

IE 27  
11

United States Nuclear Regulatory Commission  
Attention: Document Control Desk

October 30, 1995  
Page two

cc: Mr. Thomas T. Martin  
Regional Administrator  
United States Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406

Mr. Albert W. De Agazio, Sr. Project Manager  
Project Directorate I-4  
Division of Reactor Projects  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. John Macdonald  
NRC Senior Resident Inspector  
P.O. Box 1149  
Seabrook, NH 03874

INPO  
Records Center  
1100 Circle 75 Parkway  
Atlanta, GA 30339

NRC FORM 366 <small>(4-95)</small>			U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98 <small>ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.</small>					
<b>LICENSEE EVENT REPORT (LER)</b> (See reverse for required number of digits/characters for each block)											
FACILITY NAME (1)					DOCKET NUMBER (2)		PAGE (3)				
Seabrook Station					05000443		1 OF 5				
TITLE (4)											
Inadequate Area Temperature Monitoring Surveillances											
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 NAME		DOCKET NUMBER
06	30	95	95	003	01	10	30	95			05000
									FACILITY NAME		DOCKET NUMBER
											05000
OPERATING MODE (9)		1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
				20.2201(b)		20.2203(a)(2)(v)		<input checked="" type="checkbox"/>		50.73(a)(2)(i)	
				20.2203(a)(1)		20.2203(a)(3)(i)				50.73(a)(2)(ii)	
				20.2203(a)(2)(i)		20.2203(a)(3)(ii)				50.73(a)(2)(iii)	
				20.2203(a)(2)(ii)		20.2203(a)(4)				50.73(a)(2)(iv)	
				20.2203(a)(2)(iii)		50.36(c)(1)				50.73(a)(2)(v)	
				20.2203(a)(2)(iv)		50.36(c)(2)				50.73(a)(2)(vii)	
POWER LEVEL (10)		11								OTHER	
										Specify in Abstract below or in NRC Form 366A	
LICENSEE CONTACT FOR THIS LER (12)											
NAME								TELEPHONE NUMBER (Include Area Code)			
Mr. James M. Peschel, Regulatory Compliance Manager								(603) 474-9521, ext. 3772			
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							
<b>ABSTRACT</b> (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)											
<p>On June 30, 1995, North Atlantic Energy Service Corporation (North Atlantic) discovered that temperature monitoring was not being adequately performed for the Primary Component Cooling Water (PCCW) Pump Area, as required by Technical Specifications. The system design provides a combination of temperature switches, analog computer points and digital computer temperature alarms which permit the control room operators to monitor the presence or absence of an area high temperature alarm. A nonconservative temperature switch setting was applied to the temperature switch which was being used to satisfy Area Temperature Monitoring surveillance requirements for the PCCW Pump Area.</p> <p>The surveillance requirements for the Area Temperature Monitoring are specified in Technical Specification 4.7.10. North Atlantic is reporting this event as inadequate Technical Specification Surveillance for the PCCW Area Temperature monitoring.</p> <p>Corrective actions taken were to recalibrate PAH-TISH-5397, PCCW Pump Area Temperature Switch, and set the alarm setpoint to 99.5° Fahrenheit which is less than the limit specified in Table 3.7-3. Additionally, a review was performed on all temperature switches used to satisfy Technical Specification 4.7.10 Area Temperature Monitoring requirements. This review concluded that North Atlantic is in full compliance with Area Temperature Monitoring requirements. This event has been discussed with Instrumentation and Control personnel to stress that only controlled documents will be used when obtaining setpoints for plant instrumentation. North Atlantic plans to develop an electronic database which will contain all pertinent information related to plant instrumentation. This will ensure technicians have accurate information which is readily accessible when performing calibrations and setpoint verifications.</p> <p>The root cause of this event was determined to be the use of unapproved documents to obtain the required setpoint for PAH-TISH-5397. The calibration folder was used to obtain the required setpoint instead of the Standard Instrument Schedule, which is the approved setpoint reference.</p>											

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Seabrook Station	05000443	95	-- 003	-- 01	2 OF 5

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

DESCRIPTION OF EVENT

On June 30, 1995, North Atlantic Energy Service Corporation (North Atlantic) discovered that temperature monitoring was not being adequately performed for the Primary Component Cooling Water (PCCW) Pump Area, as required by Technical Specifications. The system design provides a combination of temperature switches, analog computer points and digital computer temperature alarms which permit the control room operators to monitor the presence or absence of an area high temperature alarm. A nonconservative temperature switch setting was applied to the temperature switch which was being used to satisfy Area Temperature Monitoring surveillance requirements for the PCCW Pump Area.

Technical Specification 4.7.10 requires the temperatures of 29 (twenty-nine) area locations listed in Table 3.7-3 to be verified less than the specified limits once every 12 hours. The area temperature limitations ensure that safety related equipment will not be subjected to temperatures in excess of their equipment qualification temperatures. Exposure to excessive temperatures may cause premature aging and degradation of equipment. The equipment is actually qualified for higher temperatures. The limits are taken from the service environment chart and are used in the life and aging analysis for the equipment.

Technical Specifications require the PCCW Pump Area, which is located in the Primary Auxiliary Building (PAB), to be verified less than 104° Fahrenheit every 12 hours. This surveillance is normally satisfied by verifying the absence of a high temperature alarm. However, a review of the calibration folder historical data for PAH-TISH-5397, PCCW Area Temperature Switch, identified the "as left" setting for this temperature switch set at 118° Fahrenheit. This temperature switch was last calibrated on April 4, 1991. The Standard Instrument Schedule (SIS), which provides approved setpoints for plant instrumentation, required the temperature switch be set to actuate at 99.5° Fahrenheit increasing. This is being reported to the NRC as an inadequate Technical Specification Surveillance which is reportable pursuant to 10CFR50.73(a)(2)(i).

ADDITIONAL INFORMATION

A review was conducted as a result of the above described event to ensure compliance with Area Temperature Monitoring requirements. The review identified the following four discrepancies related to satisfying Area Temperature Monitoring requirements: a discrepancy between the plant design and the Technical Specification Bases for Area Temperature Monitoring, inconsistent and inappropriate temperature switch tolerances, temperature elements not calibrated, and a temperature switch that had a functional check as opposed to a calibration. These discrepancies were determined to be not reportable to the NRC pursuant 10CFR50.73. This information is being provided to the NRC as additional information related to Area Temperature Monitoring.

The Bases for Technical Specification 3.7.10 state, in part, that "the temperature limits (in Table 3.7-3) include an allowance for instrument error of  $\pm 4.5^\circ$  Fahrenheit". Contrary to this statement, it was identified that the values in the Service Environment Chart are equal to the temperature limits listed in Technical Specification Table 3.7-3. The values listed in Technical Specification Table 3.7-3 do not take into account a  $\pm 4.5^\circ$  Fahrenheit allowance for instrument error. The Technical Specification Bases discrepancy was determined to be caused by an inadequate review of the design analysis for area temperatures. North Atlantic plans to submit a Technical Specification Bases Change to revise this statement.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
Seabrook Station	05000443	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 5
		95	-- 003	-- 01	

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

The calibration folders were reviewed to determine if the remaining temperature switches used to satisfy Technical Specification requirements could have been set at a value greater than that listed in Technical Specifications. The review concluded that the tolerances for ten temperature switches could potentially result in the as-left settings exceeding the Technical Specification limits. The calibration folders for each temperature switch found that the as-left settings for the subject switches were less than the values listed in Technical Specification Table 3.7-3.

Inconsistent and inappropriate temperature switch tolerances were found on the majority of the 32 temperature switches/elements. Seven of the temperature switch/elements did not have any specific tolerance listed on the RTS or in the surveillance procedures. The allowed tolerances on the remainder of the switches ranged from  $\pm 1^\circ$  Fahrenheit to  $\pm 1$  dial division to  $\pm 5^\circ$  Fahrenheit. Ten of the thirty-two total temperature switches/elements had associated calibration procedures which allowed the temperature switches to be set with allowances of  $\pm 5^\circ$  Fahrenheit. As described above, the calibration folders indicated that the as-left settings for the temperature switches were less than the values listed in Technical Specification Table 3.7-3. The inconsistent temperature switch settings were determined to be caused by an inadequate review during the commercial grade dedication. North Atlantic plans to evaluate the tolerances for all temperature switches associated with Area Temperature Monitoring and revise surveillance procedures and reference documents accordingly.

Four temperature elements had no record of being calibrated with any prescribed frequency. Two of these temperature elements fed computer generated alarm points and the remaining two provided analog indication at the main plant computer. The temperatures for these areas were monitored locally until the switches were properly calibrated. The results of the calibrations indicate that the temperature elements were out of calibration by less than  $3.5^\circ$  Fahrenheit. The root cause for not calibrating the temperature elements was determined to be that there was not a written procedure that directed the calibration. These temperature elements have been incorporated into the preventative maintenance schedule to ensure calibration at appropriate intervals.

Additionally, the calibration folder for one other temperature switch indicated that a functional check was performed instead of a calibration. The functional check consists of varying the setpoint to verify that the associated alarm will annunciate in the Main Control Room. Whereas a calibration will verify the accuracy of the instrument as well as the functionality of the alarm. The temperature for this area was locally monitored until the temperature switch could be properly calibrated. This terminology was not clearly defined within calibration program and the lack of clear management expectations on the part of the Repetitive Task Sheet (RTS) resulted in an inappropriate task performance.

The review concluded that of the 32 total remote Area Temperature Monitoring devices: 10 temperature switches had listed tolerances that could have allowed as left settings exceeding listed Technical Specification temperatures limits, 4 temperature elements had no record of ever being calibrated and 1 temperature switch had a functional check instead of a calibration performed. Of these 15 temperature detectors and elements, six were included in a supplemental monitoring surveillance until which time the reliability of these instruments could be assured.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Seabrook Station	05000443	95	-- 003	-- 01	4 OF 5

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

One area that remains on the supplemental local temperature log is the Main Control Room Area temperature which must be verified less than 75° Fahrenheit pursuant Technical Specification 3.7.10, Area Temperature Monitoring, and 3.7.6, Control Room Emergency Makeup Air and Filtration. The temperature switch that has been used to satisfy this surveillance has a tolerance of  $\pm 1^\circ$  Fahrenheit. The setpoint for this temperature switch is set at 75° Fahrenheit, which is the same temperature as the Technical Specification 3.7.10 and 3.7.6 limit. Thus, the temperature switch could be set higher than the allowed temperature limit. The Main Control Room temperature will be taken locally until the setpoint and tolerance issues can be resolved.

SAFETY CONSEQUENCES

There are no adverse safety consequences as a result of this event. The temperature of the PCCW Pump Area is normally controlled by the operation of two non-safety related supply and exhaust fans. Each supply fan provides approximately 55,590 cubic feet per minute (cfm) airflow to the system while each exhaust fan provides approximately 21,670 cfm capacity. These fans provide sufficient airflow to maintain the PCCW area temperature less than 104° Fahrenheit. The PCCW Pump Area is also provided with two safety-related fans which are provided as a backup to the normal ventilation. Each fan has a capacity of 10,000 cfm air flow and are set to start should the PCCW Area temperature reach 99.5° Fahrenheit for the lead fan and 105° Fahrenheit for the lag fan. Furthermore, Nuclear Systems Operators (NSO) monitor equipment operating in this area on routine shift rounds and would identify an abnormal ventilation alignment or sense a high temperature condition in the area. Based on the above, North Atlantic has a high degree of confidence that the 104° Fahrenheit temperature limit was not exceeded for greater than 8 hours or by greater than 30° Fahrenheit.

ROOT CAUSE

The root cause for the incorrect alarm setpoint on PAH-TISH-5397, PCCW Pump Area Temperature Switch, was due to obtaining a setpoint from an unapproved reference document. The setpoint was obtained from the calibration folder instead of using the Standard Instrument Schedule. The SIS is the approved reference document for obtaining approved setpoints for plant instrumentation. The method used in 1991 when performing calibrations required the Instrumentation and Control Technicians to obtain the values from the SIS.

CORRECTIVE ACTIONS

Corrective actions taken were to perform a recalibration of PAH-TISH-5397, PCCW Pump Area Temperature Switch, and reset the alarm setpoint to 99.5° Fahrenheit. This setting is less than the limit specified in Table 3.7-3. Local temperature verifications were performed in areas where the temperature switch calibrations were in question and until such time that these issues were addressed. Additionally, a review was performed on all temperature switches used to satisfy Technical Specification 3.7.10 Area Temperature Monitoring requirements. This review concluded that the present method of satisfying Technical Specification 3.7.10 Area Temperature Monitoring requirements is satisfactory. Although minor deficiencies were identified, North Atlantic is in full compliance with monitoring these 29 areas. This event was discussed with Instrumentation and Control personnel to stress that only controlled documents will be used when obtaining setpoints for plant instrumentation. North Atlantic plans to develop an electronic database which will contain all pertinent information related to plant instrumentation. This will ensure technicians have accurate information which is readily accessible when performing calibrations and setpoint verifications.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
Seabrook Station	05000443	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	5 OF 5
		95	-- 003	-- 01	

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

PLANT CONDITIONS

At the time of this event the plant was in MODE 1 at 11% power, Reactor Coolant System [AB] temperature at 561° Fahrenheit and pressure of 2235 psig.

SIMILAR EVENTS

This is the first event at Seabrook Station where inadequate Technical Specification Surveillances were a result of using unapproved documents to obtain the required setpoints.