



Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038-0236

Nuclear Business Unit

August 17, 1995

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

Dear Sir:

HOPE CREEK GENERATING STATION  
DOCKET NO. 50-354  
UNIT 1  
LICENSEE EVENT REPORT 95-018-00

This Licensee Event Report entitled "Missed Surveillance Test Due to Procedure and Personnel Error - Automatic Depressurization and High Pressure Coolant Injection Systems Inoperable" is being submitted pursuant to the requirements of 10 CFR 50.73 (a)(2)(i)(B).

Sincerely,

A handwritten signature in black ink, appearing to read "Mark E. Reddemann", written over a horizontal line.

Mark E. Reddemann  
General Manager -  
Hope Creek Operations

SORC Mtg. 95-078

C Distribution

9508240391 950816  
PDR ADOCK 05000354  
S PDR

The power is in your hands.

Handwritten initials "JE" and a vertical line, with the date "95-2188 REV. 6/94" printed below.

95-2188 REV. 6/94

**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

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.

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TITLE (4)  
**Missed Surveillance Test Due to Procedure and Personnel Error - Automatic Depressurization and High Pressure Coolant Injection Systems Inoperable**

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
07	20	95	95	018	00	08	16	95	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
POWER LEVEL (10)	0	20.2201(b)	20.2203(a)(2)(v)	<input checked="" type="checkbox"/>	50.73(a)(2)(i)	50.73(a)(2)(viii)	20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)		50.73(a)(2)(iii)	73.71	20.2203(a)(2)(ii)	20.2203(a)(4)	50.73(a)(2)(iv)	OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)		50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A	20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

**LICENSEE CONTACT FOR THIS LER (12)**

NAME <b>M. Trum, Maintenance Manager</b>	TELEPHONE NUMBER (Include Area Code) <b>(609)-339-3645</b>
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**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)**

YES (If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/>	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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**ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)**

On July 20, 1995 during closure of a work order, it was discovered that a functional test of the Automatic Depressurization System actuation permissive instrumentation had been improperly credited as complete based on the performance of a channel calibration. The functional test procedure includes three instrument channels while the channel calibration procedure includes one instrument channel. A review of functional test procedures and related work histories revealed three additional instances where multi-channel testing of ECCS instrumentation was improperly credited based on a single channel calibration. It was discovered that this caused three functional surveillance tests to exceed the allowed Technical Specification test interval. Failure to properly test these instrument channels is attributed to an inadequate procedure and personnel error. The missed functional tests have been successfully performed and caution statements have been added to appropriate procedures. Errors in the procedures have been corrected. Supervisory I&C personnel have been informed in writing of which functional tests can not be credited with a single calibration channel. This condition is reportable under 10 CFR 50.73(a)(2)(i)(B).

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

## PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor (BWR/4)  
 High Pressure Coolant Injection (HPCI), EIIS Identifier BJ  
 Core Spray (CS), EIIS Identifier BM  
 Residual Heat Removal System (RHR), EIIS Identifier BO  
 Automatic Depressurization System (ADS), EIIS Identifier JE

## IDENTIFICATION OF OCCURRENCE

TITLE (4): Missed Surveillance Test Due to Procedure and Personnel Error -  
 Automatic Depressurization and High Pressure Coolant Injection Systems  
 Inoperable

Discovery Date: July 20, 1995

Event Date: November 13, 1991, May 22, 1993, June 5, 1995

## CONDITIONS PRIOR TO OCCURRENCE

Plant in OPERATIONAL CONDITION 4 (Cold Shutdown)  
 Reactor Power 0% of rated, 0 MWe

## DESCRIPTION OF OCCURRENCE

On July 20, 1995, with the plant in Operational Condition 4 (Cold Shutdown), it was discovered during closure of work order 950629038 that on June 28, 1995 an instrumentation functional test had been improperly credited as complete based on the performance of a channel calibration. The test was successfully performed prior to exceeding the allowed Technical Specification test interval. The functional test included three instrument channel tests while the channel calibration includes only one of the three instrument channels required by the functional test. A review of functional test procedures and related work histories was performed. As a result of this review, three additional instances were discovered where testing was improperly credited based on a single channel calibration. These three functional tests exceeded the allowed surveillance test interval. Each of these occurrences is described below. The reviews also identified three functional test procedures which improperly allowed the functional test to be credited with a single channel calibration.

On November 13, 1991, and again on May 22, 1993, credit was improperly taken for Technical Specification 4.3.3.1-1 functional testing of the RHR "A" and "C" Pump Discharge Pressure (ADS Permissive) instrument channels based on the performance of a single channel calibration. The credited functional test includes the RHR "A" and "C" Pump Discharge Pressure (ADS Permissive) and the CS "A" Pump Discharge Pressure (ADS Permissive) instrument channels. The channel calibration procedure included only the CS "A" Pump Discharge Pressure (ADS Permissive) instrument channel. The I&C Supervisor improperly allowed crediting of the functional test. This occurrence was discovered during the review of functional test work history

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DESCRIPTION OF OCCURRENCE (cont'd)

initiated following the July 20, 1995 discovery and is attributed to personnel error.

On June 5, 1995, with the plant in Operational Condition 1, credit was improperly taken for Technical Specification 4.3.3.1-1 functional testing of the HPCI Condensate Storage Tank level suction transfer instrument channels based on the performance of a single channel calibration. The credited functional test includes both Condensate Storage Tank level suction transfer instrument channels. The channel calibration procedure includes only one of these two instrument channels but allowed crediting of the functional test. This occurrence was discovered during the review of functional test work history initiated following the July 20, 1995 discovery and is attributed to an inadequate procedure.

ANALYSIS OF OCCURRENCE

On November 13, 1991, and again on May 22, 1993, credit was improperly taken for functional testing of the RHR "A" and "C" Pump Discharge Pressure (ADS Permissive) instrument channels based on the performance of a single channel calibration. The I&C Supervisor improperly allowed crediting of the functional test. ADS was functional, but inoperable per Technical Specification 4.3.3.1 until the next functional tests of the missed channels, performed successfully on December 12, 1991 and June 16, 1993.

The ADS circuits affected by these occurrences are part of the ADS initiation logic. Two initiation signals and one permissive signal are used to actuate ADS. These signals are reactor vessel low water level, high drywell pressure, and RHR and/or CS pumps running. The permissive pump running signal indicates that RHR and/or CS is available to provide reactor vessel makeup water. In both of the above occurrences, two of the three pump running signals were functional but inoperable per Technical Specifications.

On June 5, 1995 credit was improperly taken for functional testing of the HPCI Condensate Storage Tank level suction transfer instrument channels based on the performance of a single channel calibration. The credited functional test includes both Condensate Storage Tank level suction transfer instrument channels. The channel calibration procedure includes only one of these two instrument channels but allowed crediting of the functional test. The Technical Specification 4.3.3.1 test interval was exceeded on July 6, 1995. HPCI was functional but inoperable per Technical Specification 4.3.3-1 until the next functional test of the missed channel, performed successfully on July 21, 1995. Technical Specification 3.5.1.c action statement requires that with the HPCI System inoperable, the system be returned to operable status within fourteen days or be in at least hot shutdown within the following twelve hours. For reasons unrelated to this

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ANALYSIS OF OCCURRENCE (cont'd)

occurrence, the plant entered Operational Condition 4 (Cold Shutdown) on July 7, 1995. The HPCI System is not required to be operable while in Operational Condition 4.

The HPCI circuit affected by this occurrence initiates suction transfer from the CST to the Suppression Pool. When the water level in the CST falls below a predetermined level, the suppression pool suction valve automatically opens. When the suppression pool suction valve is fully open, the CST suction valve automatically closes. This suction transfer ensures an adequate supply of water is available to the HPCI System. In this occurrence, one of the suction transfer channels was inoperable.

APPARENT CAUSE OF OCCURRENCE

The cause of these events is procedural inadequacy and personnel error.

The functional test procedures improperly allowed crediting of multi-channel functional test based on performance of a single channel calibration.

Supervisory personnel improperly allowed crediting of a multi-channel functional test based on performance of a single channel calibration.

SAFETY SIGNIFICANCE

The occurrences on November 13, 1991 and May 22, 1993 posed no safety significance. While functional testing was not performed on the instrument channels as required by the Technical Specifications, the results of the next functional test performed following the missed test were satisfactory. The instrument channels were found to be within calibration limits and the test did not reveal any functional failures. Based on these test results, it is concluded that the instrument channels were capable of performing their intended design functions. The missed testing did not degrade ECCS functional capabilities.

The occurrence on June 5, 1995 posed no safety significance. While functional testing was not performed on the instrument channel as required by the Technical Specifications, the results of the next functional test performed following the missed test were satisfactory. The instrument channels were found to be within calibration limits and the test did not reveal any functional failures. Based on these test results, it is concluded that the instrument channel was capable of performing its intended design function. The missed testing did not degrade ECCS functional capabilities.

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**PREVIOUS OCCURRENCES**

There have been several previous occurrences of procedural inadequacies. These include LER 95-017, 94-004, 94-003, 92-010, 92-008, 90-010, and 89-005.

Personnel errors which resulted in missed surveillance testing were reported in LER 95-009-00, 95-003-00, 94-010-00, 93-002-00, 93-001-00, 90-019-00, 90-011-00, 90-002-00, 89-018-00, 86-133-00, 86-121-00, and 86-046-00.

One previous occurrence of improper crediting of surveillance testing was reported in LER 86-062. Instrumentation problems with the Drywell Floor and Equipment Sump Flow Monitoring rendered satisfactory completion of an I&C functional test difficult. In lieu of the functional test, credit was taken for performance of an Operations procedure which, while providing a means for quantifying leakage, did not satisfy the leak detection requirements of the Technical Specifications. The corrective action taken in response to the occurrence only addressed crediting of inter-departmental surveillance procedures. This corrective action could not have prevented the occurrence reported here.

**CORRECTIVE ACTIONS**

As an interim corrective action until procedural errors were corrected, a memo was immediately sent to all I&C Supervisors and technicians identifying the fourteen functional tests which can not be credited by the completion of a single calibration.

The functional test improperly credited on June 5, 1995 was successfully performed on July 21, 1995, prior to reactor startup.

Precaution statements have been added to the multi-channel functional test procedures and associated recurring task work orders. The statements identify which instrument channels must be calibrated prior to crediting the functional test based on channel calibration. All channel calibration procedures have been revised to include explicit directions regarding the crediting of the functional test based on performance of the channel calibration. The scheduling organization has been instructed to ensure that work order directions regarding the crediting of surveillance tests are consistent with the crediting allowed by the procedures.

Procedure errors which allowed improper crediting of functional tests have been corrected. An investigation of the revision history of the three functional test procedures which allowed improper crediting has been performed and revealed that the errors were present in the original issue of the procedures.

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A review of all I&C functional test procedures to identify functional tests which include more than one instrument channel has been performed. A work history check of the current surveillance cycle for the identified procedures has been performed. No other occurrences of improper crediting of Technical Specification functional tests were found during this review.