

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Hope Creek Generating Station DOCKET NUMBER (2) 05000354 PAGE (3) 1 OF 1

TITLE (4) Unexpected Actuation of HPCI, RCIC and Channel D of the Primary Containment Isolation System (PCIS)

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)
1	2	06	86	09	2	0	1	06	01	88	050000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)

OPERATING MODE (9) <u>1</u>	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(a)	<input checked="" type="checkbox"/> 80.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
POWER LEVEL (10) <u>9.8</u>	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 80.38(a)(1)	<input type="checkbox"/> 80.73(a)(2)(v)	<input type="checkbox"/> 73.71(a)
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 80.38(a)(2)	<input type="checkbox"/> 80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 80.73(a)(2)(i)	<input type="checkbox"/> 80.73(a)(2)(viii)(A)	
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 80.73(a)(2)(ii)	<input type="checkbox"/> 80.73(a)(2)(viii)(B)	
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 80.73(a)(2)(iii)	<input type="checkbox"/> 80.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME A. M. Ervin, Lead Engineer TELEPHONE NUMBER 6109339-5239

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

SUPPLEMENTAL REPORT EXPECTED (14) YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15) MONTH DAY YEAR

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

On December 6, 1986 at 1111 hours, the Plant was in OPERATIONAL CONDITION 1 (Power Operation) at 98% power generating 1067 MWe. Full Power Generator Load Reject Testing was in progress when a HPCI, RCIC and D channel PCIS actuation occurred on spurious low and high water level signals. In addition a level 8 Feedwater Pump trip signal was generated. The feedwater system was subsequently returned to normal shutdown operation. All equipment actuated as designed. Since these actuations were not anticipated as a part of the testing in progress, a non-emergency (4 hour) notification was made to the NRC. The root cause of this occurrence was pressure oscillations in the reactor level sensing line which were detected by the fast-acting Rosemount transmitters - a design misapplication. A filter circuit was installed in the General Electric control panel to provide interim adjustable filtering capability. Redesigned Rosemount circuit boards are presently scheduled for delivery in November, 1988 and installation during the mid-cycle outage in January 1989.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
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TEXT (If more space is required, use additional NRC Form 306A's) (17)

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor (BWR/4)
 Reactor Core Isolation Cooling System (EIIS Designator:BN)
 High Pressure Coolant Injection System (EIIS Designator:BJ)

IDENTIFICATION OF OCCURRENCE

Unexpected Actuation of HPCI, RCIC and Channel D of the Primary Containment Isolation System (PCIS)
 Event Date: December 6, 1986
 Event Time: 1111 Hours
 This LER was initiated by Incident Report No. 86-266

CONDITIONS PRIOR TO OCCURRENCE

The Plant was in OPERATIONAL CONDITION 1 (Power Operation) at 98% power generating 1067 MWe.

DESCRIPTION OF OCCURRENCE

Full Power Generator Load Reject Testing was in progress when a HPCI, RCIC and D channel PCIS actuation occurred on spurious low and high water level signals. In addition a level 8 Feedwater Pump trip signal was generated. The feedwater system was subsequently returned to normal shutdown operation. All equipment actuated as designed. Since these actuations were not anticipated as a part of the testing in progress, a non-emergency (4 hour) notification was made to the NRC.

APPARENT CAUSE OF OCCURRENCE

The root cause of this occurrence was pressure oscillations in the reactor level sensing line which were detected by the fast-acting Rosemount transmitters - a design misapplication.

ANALYSIS OF OCCURRENCE

The Full Power Generator Load Reject Testing is one of the most severe transient performed under the startup test program. While such a test is common to reactor startup programs, the indicated level transients which occurred at HCGS were not known at the time of this event to have occurred at any other plant under similar test conditions. Review of CRIDS, GETARS and Control Room strip charts showed significant indicated level oscillations.

PSE&G has performed extensive troubleshooting and research to determine the root cause and best solution to the oscillating indication phenomenon. These efforts prompted General Electric

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

ANALYSIS OF OCCURRENCE (CONTINUED)

to issue RICSIL-012 and SIL-463 and spurred Rosemount Inc. to develop a new product to address the problem.

PSE&G has determined that the oscillating indication phenomenon is the result of pressure oscillations in the reactor level sensing line which were detected by the fast-acting Rosemount transmitters. GE referred to this as "inherent process signal noise" in SIL-463 and recommend that the fast-acting transmitters currently installed be modified to provide adjustable filtering capability as soon as practicable.

Modified circuit boards have been purchased from Rosemount, but due to production delays resulting from environmental qualification problems, the boards were not available for installation during the first refueling outage. In lieu of the redesigned circuit boards, a filter circuit was installed in the General Electric control panels as an interim solution.

PREVIOUS OCCURRENCES

Other BWR's using fast response transmitters with no adjustable electronic filtering capability, have experienced operational problems during startup testing. GE discusses these problems and recommended solutions in RICSIL-012 and SIL-463.

SAFETY ASSESSMENT

The PSE&G Engineering review of this event determined that there was no safety concern. General Electric was also apprised of the level indication oscillation when it occurred and has concurred with the PSE&G determination. Therefore the health and safety of the public was not compromised by this event.

REPORTABILITY

This report is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv).

CORRECTIVE ACTIONS

1. As previously described, a filter circuit was installed in the General Electric control panel to provide interim adjustable filtering capability. This change was installed during the first refueling outage.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

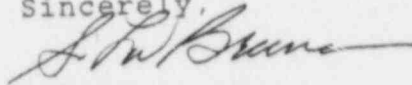
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TEXT (If more space is required, use additional NRC Form 366A 1) (17)

CORRECTIVE ACTIONS (CONTINUED)

- Redesigned Rosemount circuit boards are presently scheduled for delivery in November, 1988 and installation during the mid-cycle outage in January 1989.

Sincerely,



S. LaBruna
General Manager -
Hope Creek Operations

AME:

SORC Mtg. 88-081



PSEG

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

Hope Creek Operations

June 1, 1988

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

Dear Sir:

HOPE CREEK GENERATING STATION
DOCKET NO. 50-354
UNIT NO. 1
LICENSEE EVENT REPORT 86-092-01

This Revised Licensee Event Report is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv).

Sincerely,

S. LaBruna
General Manager -
Hope Creek Operations

AME:

Attachment
SORC Mtg. 88-081

C Distribution

The Energy People

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