



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

Hope Creek Operations

February 25, 1991

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 91-003-00

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

Sincerely,

J.J. Hagan
General Manager -
Hope Creek Operations

RBC/

Attachment
SORC Mtg. 91-029

C Distribution

The Energy People

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LICENSEE EVENT REPORT

FACILITY NAME (1) HOPE CREEK GENERATING STATION										DOCKET NUMBER (2) 0 5 0 0 0 3 5 4				PAGE (3) 1 OF 4	
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TITLE (4): ENGINEERED SAFETY FEATURES ACTUATION - PRIMARY CONTAINMENT ISOLATION DURING PERFORMANCE OF SURVEILLANCE TEST DUE TO DESIGN DEFICIENCIES IN THE STEAM LEAK DETECTION SYSTEM

EVENT DATE (5) MONTH DAY YEAR 0 1 2 5 9 1			LER NUMBER (6) YEAR ** NUMBER ** REV 9 1 - 0 0 3 - 0 0				REPORT DATE (7) MONTH DAY YEAR 0 2 2 5 9 1			OTHER FACILITIES INVOLVED (8) FACILITY NAME(S) DOCKET NUMBER(S)			
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OPERATING MODE (9) POWER LEVEL 0 0 0		5 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR: (CHECK ONE OR MORE BELOW) (11)											
		20.402(b)			20.405(c)			XX 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)		
		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 Richard Cowles, Senior Staff Engineer - Technical								TELEPHONE NUMBER 6 0 9 3 3 9 3 4 3 1			

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE NOTED IN THIS REPORT (13)												
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS?	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS?			
SUPPLEMENTARY REPORT EXPECTED? (14)				YES	NO	XX	DATE EXPECTED (15)			MONTH	DAY	YEAR

ABSTRACT :

On January 25, 1991 at 2145, an actuation of the Channel "C" Primary Containment Isolation System (PCIS) occurred during the performance of a monthly functional test of Channel "C" Emergency Core Cooling System (ECCS) high drywell pressure instrumentation. Followup investigation determined that a Channel "C" PCIS actuation signal (input during the surveillance) existed at the time that a fuse blew in the Nuclear Steam Supply Shutoff System (NS4) logic during implementation of a design change to enhance testability and maintainability in the Steam Leak Detection (SLD) cabinets. The concurrent existence of both signals satisfied the Channel "C" PCIS logic, and the required system actuations occurred. The NS4 logic fuse had blown during implementation of a design change in the Steam Leak Detection (SLD) system when test equipment leads were inadvertently grounded in the associated SLD cabinet. The primary cause of this occurrence was a design deficiency in the SLD cabinets, in that limited internal cabinet accessibility serves as a setup to technicians performing testing and maintenance inside the cabinets. Corrective actions included replacing the blown fuse, resetting the PCIS logic, completing the surveillance in a satisfactory manner, and completing implementation of the subject design change.

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HOPE CREEK GENERATING STATION	05000354	91	-	0	0	3	-	0	0	0	2	OF	0	4

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor (BWR/4)
 Primary Containment Isolation System (EIIS Designation: JM)
 Reactor Protection System (EIIS Designation: JC)
 Steam Leak Detection System (EIIS Designation: IL)

IDENTIFICATION OF OCCURRENCE

Engineered Safety Features Actuation - Primary Containment Isolation During Performance of Surveillance Test due to Design Deficiencies in the Steam Leak Detection System

Event Date: 1/25/91

Event Time: 2145

This LER was initiated by Incident Report No. 91-016

CONDITIONS PRIOR TO OCCURRENCE

Plant in OPERATIONAL CONDITION 5 (Refueling), 3rd refueling outage in progress.

DESCRIPTION OF OCCURRENCE

On January 25, 1991 at 2145, control room personnel received indication of a Channel "C" Primary Containment Isolation System (PCIS) actuation, which resulted in the following system responses:

- 1) The Reactor Building Ventilation System tripped, and appropriate system dampers isolated.
- 2) The Radwaste area supply and exhaust fans tripped
- 3) The "C" Filtration, Recirculation, and Ventilation System (FRVS) unit started

Immediate investigation determined that the PCIS initiation had occurred during the performance of an I&C surveillance procedure on the Channel "C" Emergency Core Cooling System (ECCS) reactor vessel level instrumentation. All system responses were verified and reset to a normal configuration. The Senior Nuclear Shift Supervisor (SNSS, SRO licensed) initiated a four hour non-emergency report per 10CFR50.72 due to the PCIS initiation being classified as an Engineered Safety Features (ESF) actuation.

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ANALYSIS OF OCCURRENCE

On the evening of 1/25/91, I&C Technicians received permission to conduct a functional test of Channel "C" Emergency Core Cooling System instrumentation. Part of this test requires placing the Channel "C" high drywell pressure trip unit in a tripped condition. Concurrent with the conduct of this procedure, a design change was being worked in the Steam Leak Detection (SLD) system cabinets to replace temperature modules.

At about 2140, the I&C Technicians placed the Channel "C" high drywell pressure trip unit in a tripped condition, resulting in an expected 1/2 PCIS isolation signal. At 2145, one of the personnel performing the SLD design change inadvertently grounded a meter lead in the SLD cabinet being worked, and blew a fuse in the Nuclear Steam Supply Shutoff System (NS4) logic. This blown fuse satisfied the remainder of the PCIS logic, and the previously described system actuations occurred.

APPARENT CAUSE OF OCCURRENCE

The primary cause of this occurrence is a design deficiency associated with the SLD cabinets. The limited access afforded for work inside the SLD cabinets serves as a set up for personnel performing work inside the cabinets. The subject design change was being performed to enhance the testability and maintainability of temperature modules in the cabinets due to previous occurrences related to grounded meter leads in the cabinets.

PREVIOUS OCCURRENCES

Four previous occasions of Engineered Safety Features actuations due to accessibility problems in the SLD cabinets have occurred at Hope Creek (Ref: LERs 86-057, 86-089, 87-003, and 87-010). Corrective actions included the initiation of design changes to enhance cabinet accessibility and testability of components inside the cabinets, including the design change being implemented at the time this event occurred.

Five previous occasions of PCIS isolations due to hidden half isolation signals have occurred at Hope Creek (Ref: LERs 87-005, 87-024, 87-045, 87-046, 90-032, and 91-001). However, the incident described in this report did not result from a hidden half isolation signal, but rather, a combination of factors which resulted in isolation logic satisfaction at the same time.

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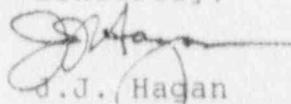
SAFETY SIGNIFICANCE

This event posed minimal potential safety consequence. All Channel "C" PCIS functions occurred as required on receipt of the isolation signal, and immediately after verification, were reset to a normal configuration. In the event that a scenario developed during the course of this incident that required containment isolation, all Channel "C" PCIS isolation functions had already occurred. No other PCIS or NS4 channels were affected or impaired by this incident.

CORRECTIVE ACTIONS

- 1) The blown fuse was replaced, the PCIS logic was reset, and the subject surveillance was completed in a satisfactory manner.
- 2) Contract technicians working in the SLD cabinets were cautioned to take whatever measures necessary to preclude grounding of meter leads in the SLD cabinets while completing temperature module replacements.
- 3) This report will be forwarded to the Nuclear Training Department for inclusion in licensed operator requalification programs and Controls Technician continuing training to increase awareness of the potential for this type of incident.
- 4) The subject design charge was completed, with no further problems being encountered during implementation.

Sincerely,



J.J. Hagan
General Manager -
Hope Creek Operations