



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

Hope Creek Generating Station

DATE October 15, 1992

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 92-009-00

This Licensee Event Report is being submitted pursuant to
the requirements of 10CFR 50.73(a)(2)(iv).

Sincerely,

J.J. Hagan
J.J. Hagan
General Manager -
Hope Creek Operations

LLA/

Attachment
SORC Mtg. 92-069
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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 5				
TITLE (4): Reactor Water Clean Up isolation on an invalid isolation signal due to inadequate planning.																													
EVENT DATE (5)					LER NUMBER (6)										REPORT DATE (7)					OTHER FACILITIES INVOLVED (8)									
MONTH	DAY	YEAR	YEAR	*	NUMBER	*	REV	MONTH	DAY	YEAR	FACILITY NAME(S)					DOCKET NUMBER(S)													
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OPERATING (9) MODE					THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR: (CHECK ONE OR MORE BELOW) (11)																								
POWER LEVEL % 0 0 0					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 Louis Aversa, Senior Staff Engineer - Technical															TELEPHONE NUMBER 6 0 9 3 3 9 3 3 8 6														
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE NOTED IN THIS REPORT (13)																													
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS?	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS?																				
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SUPPLEMENTAL REPORT EXPECTED? (14) YES x NO					DATE EXPECTED (15)					MONTH	DAY	YEAR	////////////////////																
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ABSTRACT (16)

On September 16, 1992, at 1329 hours, a Reactor Water Cleanup System (RWCU) isolation occurred as a result of an invalid isolation signal when a power supply for an analog logic panel was taken out of service. After verifying no valid signals were present and that all appropriate automatic actions were complete, Control Room personnel restored the logic panel power supply and the RWCU system. The invalid signal was introduced when a power supply for an analog logic cabinet was removed from service to support calibration of the power supply. The work package created for the activity contained a procedure for calibration of the power supply but did not contain adequate information for the removal from service of the analog logic cabinet. A pre job review by the Instrument supervisor and a scheduling coordinator failed to identify the RWCU outboard isolation valve isolation signal that occurs as a result of down-powering the cabinet. Planning personnel will be required to supply information on removing the logic cabinets in future work packages.

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PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor (BWR/4)
Reactor Water Cleanup System (CE)

IDENTIFICATION OF OCCURRENCE

TITLE: Reactor Water Cleanup isolation on an invalid isolation signal due to inadequate planning.

Event Date: September 16, 1992

Event Time: 1329

This LER was initiated by Incident Report No. 92-131

CONDITIONS PRIOR TO OCCURRENCE

Plant in OPERATIONAL CONDITION 5 (Refuel Operation)
Reactor Power 0% of rated, 0 MWe.

DESCRIPTION OF OCCURRENCE

On September 16, 1992, at 1329 hours, a Reactor Water Cleanup System (RWCU) isolation occurred as a result of an invalid isolation signal introduced by Instrument and Controls technicians (I&C techs) removed an analog logic cabinet from service to perform a power supply calibration. Prior to the event, the Nuclear Shift Supervisor (NSS - SRO licensed) directed the I&C supervisor to determine if any components or systems would be affected when the logic cabinet was removed from service. A review performed by the I&C Supervisor and a scheduling coordinator determined that a limited number of components, recorders and instruments not required to be operable under current plant conditions would be affected. The identified components were removed from service prior to removing the analog cabinet power supply.

Following the isolation, Control Room operators (NCO -RO licensed) verified that no valid isolation signals were present and all appropriate automatic actions were complete. The power supply calibration was immediately suspended until the cause of the spurious isolation could be determined. The analog logic cabinet was restored and the RWCU system was returned to service with no further incidents.

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ANALYSIS OF OCCURRENCE

The Reactor Water Cleanup system is designed to isolate upon receipt of either a leak detection system actuation, a high RWCU demineralizer inlet temperature, a Redundant Reactivity Control system initiation or the start of a Standby Liquid Control system (SLC) injection pump. The containment isolation valves associated with RWCU are powered from the "A" and "D" 1E channels to provide both redundancy and channel separation. The SLC injection pumps are powered from "A" and "B" 1E channels respectively to also provide redundancy and channel separation. The "A" SLC injection pump inputs directly to the Inboard RWCU isolation valve F001 logic as they are both "A" channel components. The "B" SLC injection pump inputs to the RWCU outboard isolation valve F004 through an Optic Isolator card in an Analog logic cabinet prior to input to the "D" channel logic. This is done to provide channel separation between the "B" and "D" channels. The isolation logic circuit is designed to function in the de-energized state to ensure the function will occur if the analog logic cabinet power is lost.

The power supply calibration procedure for the analog cabinet was scheduled to coincide with a "D" channel outage. The "D" channel had been declared inoperable; however, the channel had not been completely removed from service as the AC power and logic power remained in service. Prior to starting the procedure the I&C Supervisor reported to the Control Room and requested permission to remove power from the analog cabinet. The Nuclear Shift Supervisor (NSS - SRO licensed) asked the I&C supervisor to identify which components and/or functions associated with the analog logic cabinet could be affected when the power was removed. The I&C supervisor contacted the outage scheduling coordinator to verify the activity had been scheduled to coincide with ongoing plant work. The outage planner informed the supervisor that the job was scheduled to coincide with the ongoing "D" channel outage to minimize the risk of actuating equipment. The I&C supervisor then began reviewing controlled design drawings for each of the circuits within in the cabinet. Rather than compiling a new list of affected equipment, the supervisor chose to mark up an existing drawing cross reference list. The drawing cross reference list is an information only document which contains a brief description of the circuit together with the Bechtel versus vendor drawing number.

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ANALYSIS OF OCCURRENCE (con't)

The signal to the RWCU isolation valve F004, passes through a multiplexed optical isolation link within the cabinet. The signal is routed through the cabinet, but is not associated with any of the analog control circuits within it. After approximately 6 hours of review, the supervisor presented the annotated list to the NSS. The review did not identify the isolation signal as its associated circuitry is not listed on the cabinet layout drawings, or on the cross reference list.

The isolation occurred as a result of losing power to the open permissive from the "B" SLC injection pump which is processed through the optic isolator and the analog logic cabinet to the "D" channel. The routing of the permissive is shown on a Vendor logic drawing for the SLC injection pumps, but as these pumps are not powered from "D" channel the drawing was not included in the pre job review.

APPARENT CAUSE OF OCCURRENCE

The primary cause of this event is inadequate planning for the removal of the analog logic cabinet. The scheduling coordinators assumptions that the test could be performed on the basis of the channel being declared inoperable also contributed to this event.

PREVIOUS OCCURRENCES

No previous occurrences of a Reactor Water Cleanup system isolation due to similar testing activities have been reported.

SAFETY SIGNIFICANCE

This incident posed minimal safety significance as the Reactor Water Cleanup system is not required to operate to mitigate the consequences of an accident. The RWCU isolation did function as per design requirements.

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CORRECTIVE ACTIONS

1. Specific instruction for the removal of logic cabinets will be developed for use in future work packages.
2. Schedulers will be instructed to evaluate operational status as well as Operability requirements when removing equipment from service.

Sincerely,

J.J. Hagan
J.J. Hagan
General Manager -
Hope Creek Operations

LLA/

SORC Mtg. 92-069