



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

Hope Creek Generating Station

DATE May 24, 1994

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 94-006-00

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

Sincerely,

R.J. Hovey  
General Manager -  
Hope Creek Operations

LLA/

Attachment  
SORC Mtg. 94-038  
C Distribution

310010

The Energy People

9405310061 940524  
PDR ADOCK 05000354  
S PDR

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	
TITLE (4): Engineered Safety Feature Actuation - Actuation of the Nuclear Steam Supply Shutoff System outboard isolation System due to loss of logic power.															
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)		
0	4	2 6 9 4	9	4	- 0 0 6	-	0 0	0	5	2 4 9 4					
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)		<input checked="" type="checkbox"/>		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(b)(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 NPRDS?	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS?						
B															
SUPPLEMENTAL REPORT EXPECTED? (14)				YES	NO	x	DATE EXPECTED (15)		MONTH	DAY	YEAR				

**ABSTRACT (16)**

On 4/26/94, control room personnel were performing a reactor startup following completion of the fifth refuel outage. At 0504 hours, an actuation of the nuclear steam supply shutoff system (NS4) occurred resulting in a closure of the main steam line drain valves, reactor water sample valve and a reactor water cleanup system isolation. The NCO verified all appropriate automatic actions were complete. Initial investigation determined the isolation was due to a loss of the reactor protection system (RPS) motor generator (MG) set which powers the NS4 logics. The power supply was switched to the alternate feed, the NS4 logic was reset and all isolation valves were returned to their normally open positions. The root cause of this event is equipment failure. A tank heater in the radwaste system had shorted resulting in a ground fault trip of the feeder breaker for the motor control center powering the above equipment. The heater has been replaced but will remain de-energized until the root cause of the failure is determined. Additionally, engineering is currently reviewing the ground fault protection scheme to determine if changes are warranted to prevent similar occurrences where an entire motor control center is tripped due to a ground fault on an individual component.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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HOPE CREEK GENERATING STATION	05000354	9	4	-	0	0	6	-	0	0	0	2	of	0	4

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor (BWR/4)  
 Reactor Protection System  
 Nuclear Steam Supply Shutoff System

IDENTIFICATION OF OCCURRENCE

TITLE: Actuation of the Nuclear Steam Supply Shutoff System outboard isolation system due to loss of logic power.

Event Date: April 26, 1994

Event Time: 0504

This LER was initiated by Incident Report No. 94-092

CONDITIONS PRIOR TO OCCURRENCE

Plant in OPERATIONAL CONDITION 2 (STARTUP)  
 Reactor Power 0% of rated, 0 MWe  
 Reactor startup in progress

DESCRIPTION OF OCCURRENCE

On 4/26/94, control room personnel were performing a reactor startup following completion of the fifth refuel outage. At 0504 hours, an actuation of the nuclear steam supply shutoff system (NS4) occurred resulting in a closure of the main steam line drain valves, reactor water sample valve and a reactor water cleanup system isolation. The NCO verified all appropriate automatic actions were complete. Initial investigation determined the isolation was due to a loss of the reactor protection system (RPS) motor generator (MG) set which powers the NS4 logics. The power supply was switched to the alternate feed, the NS4 logic was reset and all isolation valves were returned to their normally open positions.

ANALYSIS OF OCCURRENCE

The normal power for the Nuclear Steam Supply Shutoff System logic is supplied via the Reactor Protection System (RPS) motor - generator (MG) set. An alternate power supply is also available via a 480/120VAC power supply transformer. The MG set and alternate feed are powered from the non 1E onsite 480 VAC distribution system. A typical distribution system consists of a 4.16 KV to 480 VAC transformer which powers a unit substation (USS). The USS in turn can power several 480VAC motor control centers (MCC). Each USS feeder breaker that powers a MCC is provided with both overcurrent and ground fault protection devices. Individual MCC breakers, with thermal magnetic trip devices and trip ratings 25 amps or less, are provided with overcurrent devices only.

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ANALYSIS OF OCCURRENCE (con't)

Following the isolation, operations personnel determined that the MCC which powers the MG set had tripped. The feeder breaker for the MCC had tripped on ground fault protection. Operations personnel initiated a troubleshooting work request for electricians to determine the cause of the ground fault. The individual feeds off the MCC were opened and the bus was checked with no indications of the fault being on the bus. The MG set motor was then checked with satisfactory results. The MCC was re-energized and the RPS MG set was returned to service. Electricians began testing the remaining loads which were returned to service after satisfactory resistance readings were obtained. Low resistance readings were obtained on a tank heater used in the radwaste system. Although the heater was replaced it was left de-energized pending the outcome of the failure investigation.

The settings on the ground fault protection scheme are currently under review with engineering due to other similar events where MCC's have tripped due to a ground on an individual component. The individual breakers on the MCC's will trip when their overcurrent setpoints are reached. The tripping coordination scheme design basis assumed that the instantaneous overcurrent trip of the individual MCC breaker would occur before the USS feeder breaker. There is a slight overlap between the USS ground fault trip and the knee of the MCC thermal magnetic breaker curve. A bench test of the MCC breaker showed that the breaker was on the high side in this region of the overlap but still within its rated bandwidth.

APPARENT CAUSE OF OCCURRENCE

The root cause of this event is equipment failure. The heater has been replaced but will remain de-energized until the root cause of the failure is determined.

PREVIOUS OCCURRENCES

There has been one previous event where a MG set trip occurred due to a motor control center tripping as reported in LER 90-004-00.

SAFETY SIGNIFICANCE

The Reactor Protection System and Nuclear Steam Supply Shutoff System are designed to perform their safety function in the event of a loss of logic power. All systems functioned as required therefore the health and safety of the general public was not compromised during this event.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

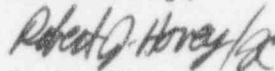
FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						PAGE (3)							
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CORRECTIVE ACTIONS

The failed heater was replaced. A root cause failure analysis is being performed for the heater failure prior to re-energization.

Engineering is currently reviewing the ground fault protection scheme to determine if changes are warranted to prevent similar occurrences.

Sincerely,



R.J. Hovey  
 General Manager -  
 Hope Creek Operations

LLA/  
 SORC Mtg. 94-038  
 Recommended approval - Yes