

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

Hope Creek Generating Station

DATE January 5, 1993

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 90-033-01

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

Sincepely, NAO Sec J.J. Hagan

General Manager -Hope Creek Operations

LLA/

Attachment SORC Mtg. 91-006 C Distribution

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ABSTRACT (16)

On 12/19/90 at 0710, the control room received indication of a half scram and isolation of the inboard Reactor Water Cleanup (RWCU) isolation valve. The above actions occurred as a result of a loss of power to the Channel "A" Reactor Protection System (RPS) electrical bus when the alternate power supply Electrical Protection Assembly (EPA) experienced a spurious trip (the normal power "A" RPS motor generator set was out of service for maintenance). The Channel "A" RPS bus was re-powered from its normal power source after completion of maintenance on the associated motor generator set, and the half scram and RWCU isolation were reset. Follow-up troubleshooting by the Maintenance Department determined that a faulty logic card caused the trip of the EPA. Immediate corrective actions consisted of replacing the faulty logic card. Long term corrective actions consist of completing a design change to enhance logic card performance when logic card upgrade kits are received from the vendor.

EPA Manufacturer: General Electric Type: TFJ Part Number: 184C449P001

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PLANT AND SYSTEM IDENTIFICATION

General Electric _ Boiling Water Reactor (BWR/4) Reactor Protection System (EIIS Designation: JC) Reactor Water Cleanup System (EIIS Designation: CE)

IDENTIFICATION OF OCCURRENCE

Engineered Safety Features (ESF) Actuation (Reactor Water Cleanup Isolation) Due to Tripping of Reactor Protection System Channel "A" Electrical Protection Assembly - Equipment Malfunction

Event Date: 12/19/91 Event Time: 0710 This LER was initiated by Incident Report No. 90-169

CONDITIONS PRIOR TO OCCURRENCE

Plant in OPERATIONAL CONDITION 1 (Power Operation), reactor power 100%, unit load 1098MWe.

DESCRIPTION OF OCCURRENCE

On 12/19/90 at 1353, control room personnel received indication of a half scram and isolation of the inboard Reactor Water Cleanup (RWCU) isolation valve (HV-F001). The Nuclear Control Operator (NCO, RO licensed) noted that an electrical protection assembly (EPA) for the Channel "A" Reactor Protection System (RPS) alternate power supply had tripped. After restoring the "A" RPS motor generator to service (previously removed from service for maintenance), Channel "A" RPS was re-energized from its normal power source, and the half scram and RWCU isolation were reset. A work request was initiated to troubleshooting the tripped EPA, and the Senior Nuclear Shift Supervisor (SNSS, SRO lipensed) initiated a 4 hour non-emergency report per 10CFR50.72 due to tre RWCU isolation.

A 'PARENT CAUSE OF OCCURRENCE

This occurrence was caused by a faulty logic card on the Channel "A" RPS bus alternate power supply EPA.

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ANALYSIS OF OCCURRENCE

Follow-up troubleshooting by the Maintenance Department determined that the logic card for the "A" RPS bus alternate EPA was faulty.

The alternate power supply EPA logic cards were replaced with the model number card recommended in GE SIL-496. The new cards have posed a new problem in which the trip lamp will intermittently illuminate and remain on without an actual trip of the EPA. The only method of resetting the lamp is to trip the EPA power supply and then perform the reset. As this method could not be employed on the inservice EPA assemblies without causing half scrams and NSSSS isolations, it has Leen decided to delay replacement of the logic cards on the normal RPS power supplies until this problem is resolved.

PREVIOUS OCCURRENCES

There have been 4 previous reportable occurrences initiated by tripping of RPS electrical protection assemblies. LERs 86-007, 87-021, and 89-022 report EPA trips due either to EPA undervoltage trip setpoint problems or valid undervoltage conditions on the alternate power supplies.

A spurious EPA trip was reported in LER 90-007 that was similar to EPA performance problems noted in GE SIL-496, Revision 1. In response to LER 90-007 and SIL-496, Revision 1, Systems Engineering initiated a design change to enhance EPA logic card performance by installing an upgrade kit as recommended by GE. This design change is scheduled to be implemented when the logic card upgrade kits are received from the vendor.

SAFETY SIGNIFICANCE

This incident had minimal potential safety significance. Technical Specifications Permit operation in any operating condition for up to 72 hours with one RPS channel inoperable. Had RPS channel "B" been in a tripped (1/2 scram) condition at the time of the occurrence, the trip of RPS channel "A" would have resulted in a reactor scram. A reactor scram is bounded by UFSAR analysis.

EQUIPMENT/MANUFACTURER DATA

EPA Manufacturer: General Electric EPA Type: TFJ Part Number: 184C449P001

General Electric - Boiling Water Reactor (BWR/4)

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CORRECTIVE ACTIONS

- The faulty EPA logic card was replaced with a new card, and the "A" RPS alternate power EPA was tested satisfactorily.
- 2. In response to SIL-496, Revision 1, Systems Engineering initiated a design change to modify existing logic cards in all EPA's at Hope Creek with upgrade kits as recommended by GE. The design change has been incorporated on the alternate RPS power supplies. The normal RPS power supply EPA logic card replacement is being delayed until the logic card trip lamp deficiency is resolved.

Sincerely,

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(J. J. Hagan Ganeral Manager -Hope Creek Operations

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