



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

Hope Creek Generating Station

November 1, 1990

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 90-020-00

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

Sincerely,

C.P. Johnson
General Manager -
Hope Creek Operations

RBC/

Attachment
SORC Mtg. 90-097

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| LICENSEE EVENT REPORT | | | | | | | | | | | | | | | | |
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| 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): PRE-PLANNED ENTRY INTO TECHNICAL SPECIFICATION 3.0.3 TO REPLACE SUSPECT ROSEMOUNT TRANSMITTER IN ACCORDANCE WITH NRC BULLITTEN 90-01 | | | | | | | | | | | | | | | | |
| 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) | | |
| 1 | 0 | 03 | 9 | 0 | 02 | 0 | 0 | 1 | 1 | 01 | | | | | | |
| OPERATING MODE (9) | | 1 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR: (CHECK ONE OR MORE BELOW) (11) | | | | | | | | | | | | | | |
| | | 20.402(b) | | | 20.405(c) | | | 50.73(a) (2) (iv) | | | 73.71(b) | | | | | |
| POWER LEVEL | | 20.405(a) (1) (i) | | | 50.36(c) (1) | | | 50.73(a) (2) (v) | | | 73.71(c) | | | | | |
| 1 0 0 | | 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) | | | XX 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 | MANUFAC-TURER | REPORTABLE TO NPRDS? | CAUSE | SYSTEM | COMPONENT | MANUFAC-TURER | REPORTABLE TO NPRDS? | | | | | | | |
| B | AD | PT | R370 | Y | | | | | | | | | | | | |
| SUPPLEMENTAL REPORT EXPECTED? (14) | | | | YES | NO | DATE EXPECTED (15) | | | MONTH | DAY | YEAR | //////////////////// | | | | |
| | | | | | XX | | | | | | | //////////////////// | | | | |

ABSTRACT (16)

On 10/03/90 at 2031, the Senior Nuclear Shift Supervisor (SNSS, SRO licensed) directed entry into Technical Specification 3.0.3 to replace a suspect pressure transmitter in one of the reactor vessel instrument racks. The transmitter was discovered to be exhibiting signs of failure as described in NRC Bulletin 90-01 during an enhanced surveillance. Replacement of the transmitter required placing reactor vessel level and pressure instruments on a common sensing line in an inoperable condition to preclude inadvertent Engineered Safety Features actuations. Included in these instruments were level and pressure transmitters which provide inputs to the High Pressure Coolant Injection (HPCI) and Core Spray (CS) system logics. Two entries into specification 3.0.3 are required to conduct this evolution; the first occurred at 2031 and was exited at 2050, the second occurred at 2216 and was exited at 2240. Subsequent to replacement, it was determined that a potential environmental qualification (EQ) concern existed with the new transmitter, as such, another entry into specification 3.0.3 occurred on 10/4/90 at 1806 to again replace the transmitter. Specification 3.0.3 was exited at 1822, entered again at 2140 to return the reference leg to operability, and was exited at 2153 when total equipment restoration was completed. The root cause of the EQ concern was a defective transmitter. Corrective actions include replacement of the transmitter, sampling similar transmitters for EQ defects, evaluation of potential 10CFR21 reportability based on the sampling results, and enhanced training for I&C technicians in recognition of potential EQ concerns.

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PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor (BWR/4)
 Core Spray System (EIIS Designation: BM)
 High Pressure Coolant Injection System (EIIS Designation: BJ)

IDENTIFICATION OF OCCURRENCE

Preplanned Entry into Technical Specification 3.0.3 to Replace Suspect Rosemount Transmitter In Accordance With NRC Bulletin 90-01

Event Date: 10/03/90

Event Time: 2031

This LER was initiated by Incident Reports 90-128, 90-129, and 90-130

CONDITIONS PRIOR TO OCCURRENCE

Plant in OPERATIONAL CONDITION 1 (Power Operation), Reactor Power 100%, Unit Load 1097MWe

DESCRIPTION OF OCCURRENCE

On 10/03/90 at 2031, the Senior Nuclear Shift Supervisor (SNSS, SRO licensed) directed entry into Technical Specification 3.0.3 to replace a suspect pressure transmitter in one of the reactor vessel instrument racks. Replacement of the transmitter required placing reactor vessel level and pressure instruments on a common sensing line in an inoperable condition to prevent inadvertent Engineered Safety Features actuations. Included in these instruments were level and pressure transmitters which provide inputs to the High Pressure Coolant Injection (HPCI) and Core Spray (CS) system logics. This rendered HPCI and CS inoperable, which requires entry into Technical Specification 3.0.3.

Two entries into specification 3.0.3 were required to conduct this evolution; the first occurred at 2031 and was exited at 2050, the second occurred at 2216 and was exited at 2240.

The subject transmitter was originally replaced during the first occurrence on 10/03/90. Subsequent to this replacement, it was determined that a potential environmental qualification (EQ) concern existed with the new transmitter, as such, another entry into specification 3.0.3 occurred on 10/4/90 at 1806 to replace the transmitter. Again, two entries into specification 3.0.3 were required to conduct the evolution; the first occurred at 1806 and was exited at 1822, the second occurred at 2140 and was exited at 2153.

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ANALYSIS OF OCCURRENCE

On 7/18/90, PSE&G submitted a response to NRC Bulletin 90-01, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount". This response delineated testing and administrative reviews conducted on Rosemount 1153 transmitters at Hope Creek and Salem Generating Stations. As part of this response, Hope Creek committed to enhance surveillance on all suspect transmitters manufactured by Rosemount.

On 10/3/90, a Rosemount 1153 series transmitter failed a spectrum analysis (noise) test, indicating degraded transmitter performance. The subject transmitter (B21-N090N) is one of four transmitters which provide reactor low pressure inputs to the Core Spray system injection permissive logic. The transmitter was declared inoperable, and a workorder initiated for replacement. As previously noted, this replacement occurred during swing shift on 10/3/90.

On 10/4/90, during discussions with the technician who performed the transmitter changeout, the station I&C Engineer determined that a potential environmental qualification (EQ) concern existed with the new transmitter. The technician informed the I&C Engineer that when installing the transmitter, he noticed movement between the electronic head and the sensing cell. An EQ barrier (threaded nipple, jam nut, and sealing compound) exists between the electronic head and sensing cell. The I&C Engineer recognized the potential implications on the EQ barrier integrity, and immediately initiated an evaluation of the operability impact of this condition on transmitter. The transmitter was declared inoperable at 1115, and a workorder was initiated to again replace the transmitter. The second replacement occurred during swing shift on 10/4/90.

APPARENT CAUSE OF OCCURRENCE

The primary cause of initial transmitter replacement on 10/3/90 was an equipment deficiency in a Rosemount 1153 transmitter discovered during enhanced surveillance testing of the transmitter in response to concerns identified in NRC Bulletin 90-01. Replacement of this transmitter necessitated entry into Technical Specification 3.0.3 because of the operability impact on the HPCI and CS systems.

The primary cause of the second transmitter replacement on 10/4/90 was a defective transmitter. The EQ barrier is factory installed and tested, is designed to function for the EQ life of the transmitter, and is not serviced or maintained by PSE&G.

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PREVIOUS OCCURRENCES

On 8/11/90, a Rosemount transmitter was replaced (Reference: LER 90-012-00) because of pre-failure indications. Entry into Technical Specification 3.0.3 was required for replacement.

SAFETY SIGNIFICANCE

The conditions described in this report were of minimal safety significance. Placing the affected instruments in an inoperable condition only affected channel "A" inputs to Reactor Protection System and Emergency Core Cooling System component initiation logics. Redundant inputs to channels "B", "C", and "D" were operable during the time that channel "A" instrumentation was out of service. Additionally, Operations Department was in readiness to proceed to Hot Shutdown (operational condition 3) had the time limits of Technical Specification 3.0.3 expired due to unforeseen problems in transmitter replacement.

CORRECTIVE ACTIONS

1. System Engineering and I&C departments are testing a sample population (32) of Rosemount 1153 series transmitters to determine if other transmitters exhibit potential EQ degradation similar to that noted in this report. Should any of the sampled transmitters be determined to have this potential EQ barrier defect, all Rosemount 1153 series EQ transmitters at Hope Creek will be tested. A procedure has been written to conduct this testing and establish acceptance criteria.
2. Based on the results of the above testing, an evaluation of potential 10CFR21 reportability will be conducted. In the interim, the manufacturer has been informed of this potential defect.
3. The I&C Engineer will review this report with all I&C technicians during departmental meetings and the Nuclear Training departments will conduct technician training in identifying potential EQ deficiencies on Rosemount transmitters. In addition, the Nuclear Training department will incorporate this training into permanent lesson modules.

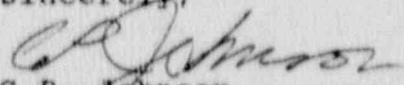
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CORRECTIVE ACTIONS, CONT'D

- Applicable maintenance procedures regarding the installation and testing of Rosemount 1153 transmitters will be reviewed for possible enhancement to aid in identification of potential EQ defects prior to transmitter installation.

Sincerely,



C.P. Johnson
 General Manager -
 Hope Creek Operations

SORC Mtg. 90-097