



Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038-0236  
Nuclear Business Unit

DEC 15 1995  
LR-N95235

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 NO. 95-034-00

This Licensee Event Report entitled "Technical Specification Violation - Failure To Follow Rod Sequence Control System Surveillance Procedures" is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(i)(B).

Sincerely,

Mark E. Reddemann  
General Manager -  
Hope Creek Operations

JPP  
SORC Mtg. 95-123

C Distribution  
LER File

9512210037 951215  
PDR ADOCK 05000354  
S PDR

The power is in your hands

JE221  
95-2168 REV 6/84

**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20585-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

|   |                                      |                           |
|---|--------------------------------------|---------------------------|
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TITLE (4)  
**Technical Specification Violation - Failure To Follow Rod Sequence Control System Surveillance Procedures**

| EVENT DATE (5) |     |      | LER NUMBER (6) |                   |                 | REPORT DATE (7) |     |      | OTHER FACILITIES INVOLVED (8) |                               |
|----------------|-----|------|----------------|-------------------|-----------------|-----------------|-----|------|-------------------------------|-------------------------------|
| MONTH          | DAY | YEAR | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER | MONTH           | DAY | YEAR | FACILITY NAME                 | DOCKET NUMBER                 |
| 11             | 10  | 95   | 95             | 034               | 00              | 12              | 15  | 95   | FACILITY NAME                 | DOCKET NUMBER<br><b>05000</b> |
|                |     |      |                |                   |                 |                 |     |      | FACILITY NAME                 | DOCKET NUMBER<br><b>05000</b> |

  

|                    |                   |   |                   |                                     |                   |   |  |  |  |  |
|--------------------|-------------------|---|-------------------|-------------------------------------|-------------------|---|--|--|--|--|
| OPERATING MODE (9) | <b>1</b>          | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11) |                   |                                     |                   |   |  |  |  |  |
| POWER LEVEL (10)   | <b>28</b>         | 20.2201(b)  | 20.2203(a)(2)(v)  | <input checked="" type="checkbox"/> | 50.73(a)(2)(i)(B) | 50.73(a)(2)(viii)                             |  |  |  |  |
|                    |                   | 20.2203(a)(1)   | 20.2203(a)(3)(i)  |                                     | 50.73(a)(2)(ii)   | 50.73(a)(2)(x)                                |  |  |  |  |
|                    |                   | 20.2203(a)(2)(i)  | 20.2203(a)(3)(ii) |                                     | 50.73(a)(2)(iii)  | 73.71   |  |  |  |  |
|                    |                   | 20.2203(a)(2)(ii)   | 20.2203(a)(4)     |                                     | 50.73(a)(2)(iv)   | OTHER   |  |  |  |  |
|                    |                   | 20.2203(a)(2)(iii)  | 50.36(c)(1)       |                                     | 50.73(a)(2)(v)    | Specify in Abstract below or in NRC Form 366A |  |  |  |  |
|                    | 20.2203(a)(2)(iv) | 50.36(c)(2)   |                   | 50.73(a)(2)(vii)                    |                   |   |  |  |  |  |

|                                    |   |
|------------------------------------|---|
| LICENSEE CONTACT FOR THIS LER (12) |   |
| NAME<br><b>G. Daves</b>            | TELEPHONE NUMBER (Include Area Code)<br><b>(609) 339-3071</b> |

| COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13) |        |           |              |                     |       |        |           |              |                     |  |
|--|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|--|
| CAUSE  | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPRDS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPRDS |  |
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|   |                                     |    |  |                               |       |     |      |
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| SUPPLEMENTAL REPORT EXPECTED (14)                   |                                     |    |  | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
| YES<br>(If yes, complete EXPECTED SUBMISSION DATE). | <input checked="" type="checkbox"/> | NO |  |                               |       |     |      |

**ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)**

On November 10, 1995, a plant shutdown was in progress to comply with Primary Containment Integrity Technical Specification requirements (see LER 95-031-00). At 2310 hours, with the reactor at 28% of rated thermal power, the rod inhibit mode of the Rod Sequence Control System (RSCS) had automatically initiated. At this point, Technical Specification Surveillance Requirement 4.1.4.2.a.2 requires that a system diagnostic functional test be performed prior to further movement of control rods. However, control rod insertion continued until reactor power reached approximately 24% of rated thermal power. At that time, the control room operators halted control rod insertion in order to perform the required surveillance tests. The required surveillances were completed, and reactor power reduction recommenced. The cause of this event was attributed to incorrect assumptions made by the operator concerning the time at which the RSCS surveillances are required to be performed. Corrective actions include procedural revisions and enhancements to operator training emphasizing the applicability of Technical Specification 4.0.1.

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

**PLANT AND SYSTEM IDENTIFICATION**

General Electric - Boiling Water Reactor (BWR/4)  
Rod Sequence Control System - EIIS Identifier {JD}

**IDENTIFICATION OF OCCURRENCE**

Event date: November 10, 1995  
Discovery date: November 10, 1995  
Date determined to be reportable: November 22, 1995

This event is reportable under 10 CFR 50.73 (a) (2) (i) (B).

**CONDITIONS PRIOR TO OCCURRENCE**

Plant in OPERATIONAL CONDITION 1 (Power Operation)  
Reactor Power 28% of rated power, (Plant shutdown in progress)

At the time of the event, the Rod Worth Minimizer was inoperable.

**DESCRIPTION OF OCCURRENCE**

On November 10, 1995, a plant shutdown was in progress to comply with the requirements of Technical Specification 3.6.1.1, Primary Containment Integrity, due to excessive Drywell to Torus leakage (see LER 95-031-00). At 2310 hours, with the reactor at 28% of rated thermal power, the rod inhibit mode of the Rod Sequence Control System (RSCS) had automatically initiated and the "above low power setpoint" light had appropriately extinguished. At this point, Technical Specification Surveillance Requirement 4.1.4.2.a.2 and plant procedure HC.OP-IO.ZZ-0004 require that a system diagnostic functional test be performed prior to further movement of a control rod. In addition, Technical Specification Surveillance Requirement 4.1.4.2.b.2 and plant procedure HC.OP-IO.ZZ-0004 require that an inhibited rod be selected and attempted to be moved within one hour of automatic initiation of the rod inhibit mode when reducing thermal power. However, control rod insertion continued until reactor power reached approximately 24% of rated thermal power at 0011 hours on November 11, 1995. An NRC resident inspector observing the power reduction had questioned why the surveillances were not performed. At that time, the control room operators halted control rod insertion in order to perform the aforementioned surveillance tests. The required surveillances were completed satisfactorily, and at approximately 0043 hours, reactor power reduction recommenced.

Since the actions required by procedure HC.OP-IO.ZZ-0004 resulted in a violation of a Technical Specification Surveillance Requirement, this event is being reported under the provisions of 10CFR50.73(a)(2)(i)(B).

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ANALYSIS OF OCCURRENCE

The RSCS is designed primarily to mitigate the consequences of the postulated rod drop accident, which analysis shows to be of no concern at power levels in excess of 20% of rated thermal power. Mitigation is achieved by constraining control rod movements by the operator to predetermined patterns and sequences that ensure that control rods of high worth are not obtained below the 20% power level. The RSCS is required to be in operation during reactor startup and shutdown between 0 and a nominal 20% of rated thermal power.

The RSCS function is supported by the redundant action of the Rod Worth Minimizer (RWM), which is programmed to limit or minimize control rod reactivity worth. While the startup or shutdown of the reactor may continue with the RWM inoperable when a second licensed operator is present to check rod movements, the RSCS must be operable at all times, except for special test exceptions specified in the Technical Specifications, over the prescribed power range, 0 to 20 percent. If the RSCS is inoperable during shutdown (from 0 to 20 percent power), the rods may be moved only by tripping the reactor.

In this event, the RSCS surveillances were not performed as specified in the procedures. This did not result in an LCO violation since the LCO APPLICABILITY requirements for RSCS operability were not in effect at that time, but did result in a Technical Specification Surveillance Requirement violation. As stated in Technical Specification 4.0.1, surveillance requirements shall be met during operational conditions or other conditions specified for the individual LCO unless otherwise stated in the individual surveillance requirement. Surveillance Requirements 4.1.4.2.a.2 and 4.1.4.2.b.2 both specify conditions in which these tests must be performed that are outside of the APPLICABILITY statement for LCO 3.1.4.2. The failure to perform these surveillances as specified resulted in a violation of Technical Specification 4.0.1.

The bases of Technical Specification 4.0.1 state that the purpose of the specification is to ensure that surveillances are performed to verify the operational status of systems and components and that parameters are within specified limits to ensure safe operation of the facility when the plant is in an operational condition for which the individual LCO is applicable. Surveillance requirements do not have to be performed when the facility is in an operational condition for which the requirements do not apply unless otherwise specified. Previously, these provisions of Technical Specification 4.0.1 had been viewed to apply after a system was satisfying the APPLICABILITY requirements of its LCO (i.e., Surveillance Requirement 4.4.2.1, which permits safety relief valve testing to be performed after entering the operational condition where they are required or performance of Surveillance Requirements 4.8.1.1.2.a.4 & 5 on the diesel generators

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ANALYSIS OF OCCURRENCE (Continued)

when complying with Action Statement 3.8.1.1.b regardless of when the diesel generator is restored to operability and what operational condition was entered).

This position on Technical Specifications was initially determined to be appropriate by the Licensing department, and as a result, this event was determined not to be reportable under the provisions of 10CFR50.73 since no violation of the Technical Specifications had taken place. This issue was discussed with the resident inspector and the NRR Project Manager for Hope Creek. On November 22, 1995, after further investigation, the position on Technical Specification 4.0.1 was determined to be incorrect and that the requirement to perform surveillances "unless otherwise specified" applies at all times, not just when the LCO APPLICABILITY statement is being satisfied. With this new position, the event was determined to be reportable, as stated previously, under the provisions of 10CFR50.73(a)(2)(i)(B).

APPARENT CAUSE OF OCCURRENCE

The cause of this event was attributed to incorrect assumptions made by the operator concerning the time at which the RSCS surveillances are required to be performed. The operator assumed that the surveillances could be performed anytime between 28% of rated thermal power and prior to decreasing below 20% of rated thermal power. Contributing to this event, was an inadequate precautionary note in procedure HC.OP-IO.ZZ-0004, which reinforced the operator's assumptions regarding when the surveillances were required. Although the procedure provided specific guidance on when the surveillances must be performed, the precautionary note only addressed the need to perform these tests prior to load reduction below 20% of rated thermal power in accordance with the Technical Specification Applicability statement for the RSCS. Although this event only involved the RSCS Surveillance Requirements, it had indicated an inadequate understanding of the bases of Technical Specification 4.0.1.

SAFETY SIGNIFICANCE

As stated in the Hope Creek UFSAR, the RSCS is designed primarily to mitigate the consequences of the postulated rod drop accident, which analysis shows to be of no concern at power levels in excess of 20% of rated thermal power. Mitigation is achieved by constraining control rod movements by the operator to predetermined patterns and sequences that ensure that control rods of high worth are not obtained below the 20% power level. During this event, rod insertion was within the defined rod pattern. The RSCS is required to be in operation during reactor startup and shutdown between 0 and a nominal 20% of rated thermal power.

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SAFETY SIGNIFICANCE (Continued)

In this event, the required surveillances to demonstrate RSCS operability were not performed as specified in the plant procedure when the automatic initiation of the rod inhibit function of the RSCS occurred at 28% of rated thermal power. However, these surveillances were completed when reactor power was at 24% of rated thermal power. Therefore, this event did not result in violation of the Limiting Conditions for Operation for the RSCS and was not safety significant.

PREVIOUS OCCURRENCES

Failure to follow Technical Specification requirements has recently been documented in LERs 95-03-00 and 95-024-00. LER 95-03-00 documented an event where operators performed a surveillance in an operational condition other than that specified by the Technical Specifications and LER 95-024-00 documented an operator's failure to follow Technical Specification Action requirements for initiating a special report. However, there have been no previous LERs for failure to comply with the RSCS Technical Specifications.

CORRECTIVE ACTIONS

The Licensing department has provided the basis for reportability of this event and description of the applicability of Technical Specification 4.0.1 to the Hope Creek Operations department. This information will be reviewed with all licensed operators as part of the following corrective action.

The Operations and Licensing departments will identify weaknesses in the existing training lesson plan for the Technical Specifications, including Technical Specification 4.0.1. The training department will make the appropriate changes to the lesson plan and train the licensed operators. These actions will be completed prior to startup following the current refueling outage.

Procedure HC.OP-IO.ZZ-0004 will be revised to ensure proper precautions between the low power alarm point and the low power setpoint are noted and emphasize the importance of performing the RSCS surveillances appropriately upon automatic initiation of the rod inhibit mode. This revision will be completed prior to startup following the current refueling outage.

This event will be evaluated by the Training department to determine required enhancements to the RSCS lesson plan. The simulator response in terms of when the rod inhibit mode automatically initiates will be reviewed to see if it mimics plant conditions. The lesson plan revisions and training will be completed by June 30, 1996.

Personnel accountability has been implemented as appropriate.