

**FEB 06 2004**

LR-N04-0038



U.S. Regulatory Commission  
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Washington, DC 20555

**LER 354/03-009-00**  
**HOPE CREEK GENERATING STATION – UNIT 1**  
**FACILITY OPERATING LICENSE NO. NPF-57**  
**DOCKET NO. 50-354**

This Licensee Event Report entitled "Technical Specification Noncompliance – Inoperable High Range Noble Gas Effluent Monitor On North Plant Vent" is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv)(A).

Sincerely,

A handwritten signature in black ink, appearing to read "James Hutton".

James Hutton  
Plant Manager – Hope Creek

Attachment

RFY

C Distribution  
LER File 3.7

Handwritten initials "JEG" in black ink.

**LICENSEE EVENT REPORT (LER)**

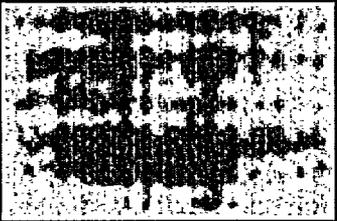
(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor and a person is not required to respond to the

|  |                                     |                          |
|--|-------------------------------------|--------------------------|
| <b>1. FACILITY NAME</b><br>Hope Creek Generating Station | <b>2. DOCKET NUMBER</b><br>05000354 | <b>3. PAGE</b><br>1 OF 4 |
|--|-------------------------------------|--------------------------|

**4. TITLE**  
Tech Spec Non-compliance - Inoperable High Range Noble Gas Effluent Monitor On North Plant Vent

| 5. EVENT DATE |     |      | 6. LER NUMBER |                   |        | 7. REPORT DATE |     |      | 8. OTHER FACILITIES INVOLVED |               |
|---------------|-----|------|---------------|-------------------|--------|----------------|-----|------|------------------------------|---------------|
| MO            | DAY | YEAR | YEAR          | SEQUENTIAL NUMBER | REV NO | MO             | DAY | YEAR | FACILITY NAME                | DOCKET NUMBER |
| 9             | 14  | 2003 | 2003          | 009               | 00     | 2              | 6   | 2004 | FACILITY NAME                | DOCKET NUMBER |

|  |  |                     |                      |   |
|--|--|---------------------|----------------------|---|
| <b>9. OPERATING MODE</b><br>4  | <b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)</b> |                     |                      |   |
|  | 20.2201(b)   | 20.2203(a)(3)(ii)   | 50.73(a)(2)(ii)(B)   | 50.73(a)(2)(ix)(A)  |
| <b>10. POWER LEVEL</b><br>0  | 20.2201(d)   | 20.2203(a)(4)       | 50.73(a)(2)(iii)     | 50.73(a)(2)(x)  |
|  | 20.2203(a)(1)  | 50.36(c)(1)(i)(A)   | 50.73(a)(2)(iv)(A)   | 73.71(a)(4)   |
|  | 20.2203(a)(2)(i)   | 50.36(c)(1)(ii)(A)  | 50.73(a)(2)(v)(A)    | 73.71(a)(5)   |
|  | 20.2203(a)(2)(ii)  | 50.36(c)(2)         | 50.73(a)(2)(v)(B)    | OTHER<br>Specify in Abstract below or in NRC Form 366A                              |
|  | 20.2203(a)(2)(iii)   | 50.46(a)(3)(ii)     | 50.73(a)(2)(v)(C)    |   |
|  | 20.2203(a)(2)(iv)  | 50.73(a)(2)(i)(A)   | 50.73(a)(2)(v)(D)    |   |
|  | 20.2203(a)(2)(v)   | X 50.73(a)(2)(i)(B) | 50.73(a)(2)(vii)     |  |
|  | 20.2203(a)(2)(vi)  | 50.73(a)(2)(i)(C)   | 50.73(a)(2)(viii)(A) |   |
|  | 20.2203(a)(3)(i)   | 50.73(a)(2)(ii)(A)  | 50.73(a)(2)(viii)(B) |   |

**12. LICENSEE CONTACT FOR THIS LER**

|   |   |
|---|---|
| <b>NAME</b><br>R. Yewdall, Licensing Engineer | <b>TELEPHONE NUMBER (Include Area Code)</b><br>856-339-2469 |
|---|---|

**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO EPIX | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO EPIX |
|-------|--------|-----------|--------------|--------------------|-------|--------|-----------|--------------|--------------------|
| A     | RM     | RI        | S637         | Yes                |       |        |           |              |                    |

|   |   |    |  |                                     |     |      |
|---|---|----|--|-------------------------------------|-----|------|
| <b>14. SUPPLEMENTAL REPORT EXPECTED</b>         |   |    |  | <b>15. EXPECTED SUBMISSION DATE</b> |     |      |
| YES (if yes, complete EXPECTED SUBMISSION DATE) | X | NO |  | MONTH                               | DAY | YEAR |

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

On December 10, 2003, while performing a scheduled Instrument and Controls (I&C) functional check of the North Plant Vent (NPV) wide range noble gas effluent monitor it was determined that the bypass pump was inoperable. Technical Specification (TS) 3.3.7.5, Accident Monitoring Instrumentation, requires the NPV high range radiation monitor to be operable during power operation or initiate the preplanned alternate method of monitoring. The purpose of the Accident Monitoring Instrumentation is to extend the range of the low range noble gas monitor. At the time of discovery Hope Creek was in Operating Condition 4 (Shutdown) so the TS Action Statement did not apply. However, based on troubleshooting it was determined that problems discovered would have prevented the required components from fulfilling the system's design function. Further investigation has determined that the monitor became inoperable on September 14, 2003 during previous maintenance activities. Monitor inoperability was not identified at that time due to inadequate post maintenance testing, thus no alternate means of monitoring was instituted, as required by TS 3.3.7.5.

There were no safety consequences associated with this event because the system is not safety related or required for shutdown of the unit. Corrective actions included troubleshooting and repair of the radiation monitoring channel, and verification of correct operation of the radiation monitor, and coaching / counseling of those involved.

This event is being reported in accordance with 10CFR50.73 (a) (2) (i) (B).

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

| FACILITY NAME (1)             | DOCKET NUMBER (2) | LER NUMBER (6) |                   |                 | PAGE (3) |
|-------------------------------|-------------------|----------------|-------------------|-----------------|----------|
| Hope Creek Generating Station | 05000354          | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER | 2 OF 4   |
|                               |                   | 2003           | - 009             | - 00            |          |

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)  
Radiation Monitoring System {RM/--}\*

\* Energy Industry Identification System {EIS} codes and component function identifier codes appear as {SS/CCC}

**IDENTIFICATION OF OCCURRENCE**

Event Date: September 14, 2003  
Discovery Date: December 10, 2003

**CONDITIONS PRIOR TO OCCURRENCE**

The plant was in Operating Condition/ 4 (Shutdown), at the time of discovery. No other required structures, systems or components were inoperable at the start of this event that contributed to the event.

**DESCRIPTION OF OCCURRENCE**

On December 10, 2003, while performing maintenance activities in accordance with approved station procedures, I&C technicians determined that the North Plant Vent (NPV) {RM/--} wide range noble gas effluent monitor bypass flow pump would not function as required. The bypass pump functions to deliver a plant vent sample to the radiation monitoring detector for the mid/high range noble gas monitoring.

Technical Specification (TS) 3.3.7.5, Accident Monitoring Instrumentation, requires the NPV high range radiation monitor to be operable during power operation or initiate the preplanned alternate method of monitoring. At the time of discovery Hope Creek was in Shutdown (OPERATION CONDITION 4) so the TS Action Statement did not apply. However, based on troubleshooting it was determined that problems discovered would have prevented the required components from fulfilling the system's design function.

A review of previous maintenance activities identified that on September 14, 2003 a relay was replaced on the radiation monitor power controller. The original relay was a different type than the replacement relay. Inadequate post-maintenance testing led the technicians to consider the radiation monitor operable at that time. During the work performed on December 10, 2003, station maintenance identified that the work performed in September prevented the bypass flow pump from operating properly. Therefore the North Plant Vent Wide Range noble gas monitor was inoperable since the maintenance performed in September.

Since the NPV radiation monitor was inoperable for greater than the TS allowed outage time without performing the necessary TS actions, this event is being reported under 10CFR50.73(a)(2)(i)(B) as a TS prohibited condition.

The bypass pump is not used for normal (low) range effluent monitoring. Thus the normal monitoring, governed by the Hope Creek Offsite Dose Calculation Manual (ODCM) was not affected by this event.

**LICENSEE EVENT REPORT (LER)  
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**CAUSE OF OCCURRENCE**

On September 14, 2003 while performing procedure HC.IC-FT.SP-0015, a routine functional test of components of the NPV Radiation Monitoring System (RMS), equipment problems were discovered. Corrective maintenance was performed at that time to rectify the condition. During the maintenance activities the original Wide Range Gas Monitor (WRGM) K1 relay in the Power Controller was changed out. The original relay was a three (3) pole contact type, using the normally closed contact terminals 2 and 8 for the MED/HIGH Bypass Pump logic permissive. The maintenance activity replaced the original three pole contact type with a two (2)-pole contact per the original Bill of Materials (BOM). This action resulted in a configuration condition that resulted in the NPV RMS Bypass Pump being INOPERABLE.

The cause of occurrence was a nonconforming condition related to an as-built configuration not matching design documents. Human performance issues related to a lack of a questioning attitude by technicians when replacing the K1 relay with a relay different from the relay removed led to the error. Additionally, the personnel involved failed to reassess the adequacy of the post maintenance test following the changes to the original work scope.

**PREVIOUS OCCURRENCES**

A review of TS noncompliance LERs was performed. Based on this review actions associated with those LER(s) would not have prevented this occurrence. However, during the previous 12-month period two (2) Special Reports (354/03-001 and 354/03-008) were submitted as required by TS, reporting NPV RMS monitor inoperability.

**SAFETY CONSEQUENCES AND IMPLICATIONS**

The inability of the mid/high range monitoring system to fulfill the intended design function did not reduce the level of safety or affect station operation. The impact is limited to radiological assessment capability if high noble gas effluent had been released from the NPV. There are three monitored effluent release points at Hope Creek. Each release point is designed with an extended range noble gas monitoring system. While it is possible that elevated levels of noble gas could be released from the NPV, hence the requirements for extended range noble gas monitors, it would be more likely that the accident level source term would be from the Filtration, Recirculation and Ventilation System (FRVS). This pathway monitors releases from the reactor primary containment and the reactor building (secondary containment).

The apparent cause review identified a potential for similar problems with the South Plant Vent (SPV) RMS and the FRVS RMS due to the common system design. Based on documented routine surveillance and functional test records proper operation of the SPV and FRVS RMS even while in a nonconforming condition has been demonstrated.

During the period of inoperability there were no unplanned or unmonitored releases from the NPV.

The normal range monitoring system was not affected by this event.

This event does not constitute a Safety System Functional Failure (SSFF) as defined in NEI 99-02.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

| FACILITY NAME (1)             | DOCKET NUMBER (2) | LER NUMBER (6) |                   |                 | PAGE (3) |
|-------------------------------|-------------------|----------------|-------------------|-----------------|----------|
| Hope Creek Generating Station | 05000354          | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER | 4 OF 4   |
|                               |                   | 2003           | - 009             | - 00            |          |

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

**CORRECTIVE ACTION**

The corrective actions to address the identified problem are as follows:

1. The NPV RMS bypass pump controller was rewired to accept the two (2) pole K1 relay which was identified as the proper component for design configuration. A functional test of the NPV radiation monitoring system was performed in accordance with approved procedures and the monitoring system was declared operable. Operability was documented in accordance with the corrective action process.
2. Correct the SPV RMS K1 relay wiring to agree with vendor drawing and ensure a two pole contact relay is installed. Corrective action task generated to complete this work during the next SPV RMS surveillance, scheduled for March 2004.
3. Correct the FRVS RMS K1 relay wiring to agree with vendor drawing and ensure a two pole contact relay is installed. Corrective action task generated to complete this work during the next FRVS RMS surveillance, scheduled for May 2004.
4. The Individuals involved have been counseled in accordance with Company policies.