



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

Nuclear Business Unit

APR 25 1996

LR-N96110

U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Dear Sir:

HOPE CREEK GENERATING STATION  
DOCKET NO. 50-354  
UNIT 1  
LICENSEE EVENT REPORT 96-012-00

This Licensee Event Report entitled "Missed Offgas Sample Resulting in a Condition Prohibited by the Plant Technical Specifications" is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(i)(B).

Sincerely,

Mark E. Reddemann  
General Manager -  
Hope Creek Operations

Attachment LER  
SORC Mtg. 96-046

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PDR ADDCK 05000354  
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The power is in your hands.

## 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 FLD 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 20555-0001, AND TO  
THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF  
MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Hope Creek Generating Station

DOCKET NUMBER (2)

05000354

PAGE (3)

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TITLE (4)

Missed Offgas Sample Resulting in a Condition Prohibited by the Plant  
Technical Specifications

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
03	20	96	96	-- 012	-- 00	04	25	96	FACILITY NAME	DOCKET NUMBER
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
1			20.2201(b)			20.2203(a)(2)(v)			<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	50.73(a)(2)(viii)
POWER LEVEL (10)			24			20.2203(a)(1)			50.73(a)(2)(ii)	
						20.2203(a)(2)(i)			50.73(a)(2)(iii)	
						20.2203(a)(2)(ii)			50.73(a)(2)(iv)	
						20.2203(a)(2)(iii)			50.73(a)(2)(v)	
						20.2203(a)(2)(iv)			50.73(a)(2)(vii)	
									OTHER	
									Specify in Abstract below or in NRC Form 366A	

## LICENSEE CONTACT FOR THIS LER (12)

NAME

Lisa Kepley, Licensing Engineer

TELEPHONE NUMBER (Include Area Code)

(609) 339-1106

## 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

## SUPPLEMENTAL REPORT EXPECTED (14)

YES	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
(If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/>				

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

On March 20, 1996, at 1020 hours while in Operational Condition 2 (Startup), Technical Specification Limiting Condition for Operation (LCO) 3.3.7.1, "Radiation Monitoring Instrumentation," was entered, requiring offgas grab samples every 8 hours. On March 26, 1996 at 0810 hours, a Chemistry Technician noted that the sample obtained did not exhibit expected activity levels. The Chemistry Technician also noted that the alternate sample apparatus used to obtain the required sample was making a hissing noise. The backup sample apparatus vial needle was tightened. The Chemistry Technician documented that samples obtained between March 20, 1996 at 1020 hours and March 26, 1996 at 0810 hours were not representative of the effluent stream. This condition is reportable under 10CFR50.73(a)(2)(i)(B), as a condition or operation prohibited by the plant Technical Specifications. A defective needle luer lock adapter is the apparent cause of obtaining the non-representative offgas samples from the offgas system. Contributing causal factors include inadequate design and a lack of questioning attitude. Corrective actions are in the areas of design modifications, training, and system deficiency resolution.

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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)  
Gaseous Radwaste (Offgas): HA, EIIS Identifier: WF

## IDENTIFICATION OF OCCURRENCE

Event Date: March 20, 1996  
Event Time: 1020 hours  
Discovery Date: March 26, 1996

## CONDITIONS PRIOR TO OCCURRENCE

Plant in OPERATIONAL CONDITION 1 (Power Operation)  
Reactor Power 24% of rated

## DESCRIPTION OF OCCURRENCE

On March 20, 1996, at 1020 hours while in Operational Condition 2 (Startup), Technical Specification Limiting Condition for Operation (LCO) 3.3.7.1, "Radiation Monitoring Instrumentation," was entered. Technical Specification Table 3.3.7.1-1, Action 74, states that "...releases via this pathway may continue for up to 30 days provided: (a) the offgas system is not bypassed, and (b) grab samples are taken at least once per 8 hours and analyzed within the following 4 hours."

On March 26, 1996, at 0810 hours, a Chemistry Technician noted that the sample obtained did not exhibit expected activity levels. The Chemistry Technician also noted that the alternate sample apparatus used to obtain the required sample was making a hissing noise. The alternate sample apparatus vial needle was tightened and two additional samples were taken at 0830 hours and 0852 hours. Both samples indicated detectable activity commensurate with reactor power level.

The Chemistry Technician documented that representative samples were not obtained between March 20, 1996 at 1020 hours and March 26, 1996 at 0810 hours. This condition is reportable under 10CFR50.73(a)(2)(i)(B), as a condition or operation prohibited by the plant Technical Specifications.

Required representative offgas samples were obtained until the continuous Offgas Pre-treatment Radiation Monitors were returned to service on March 27, 1996, at 0925 hours.

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## ANALYSIS OF OCCURRENCE

Hope Creek Generating Station has two Offgas Pre-treatment Radiation Monitors. The purpose of these radiation monitors is to monitor potential release paths for gaseous radioactive effluents and indicate abnormal radioactivity levels. There are no automatic functions from these radiation monitors. These monitors provide alarms and indications only. A primary offgas sample panel (vial sampler) is used as the primary method of obtaining an offgas sample if the continuous Offgas Pre-treatment Radiation Monitors are inoperable. There is a backup sample apparatus for grab samples in the event that the primary offgas pre-treatment sample panel is also inoperable.

During startup following Hope Creek Generating Station's sixth refueling outage, the Offgas Pre-treatment Radiation Monitors were declared inoperable in accordance with Operations Procedure, HC.OP-IO.ZZ-0003(Q), "Startup From Cold Shutdown To Rated Power." As a result, LCO 3.3.7.1, "Radiation Monitoring Instrumentation," was appropriately entered. Technical Specification Table 3.3.7.1-1, Action 74, states that "...releases via this pathway may continue for up to 30 days provided: (a) the offgas system is not bypassed, and (b) grab samples are taken at least once per 8 hours and analyzed within the following 4 hours."

Normally, the grab samples are taken from the primary offgas sample panel. However, this primary method of sampling was also inoperable due to water in the panel. This water resulted in the sample pump being unable to draw a vacuum in the sample vial prior to sampling. Engineering evaluation of the source of the water in the primary offgas sample panel was underway prior to this event and is continuing.

Because the primary sample method was not functional, the backup sample apparatus was employed in accordance with the procedure.

Upon initial connection of the backup sample apparatus, it was noticed that the sample needle was bent. The needle was removed and a new needle was installed. A sample was obtained using this backup sample apparatus with the new needle. No activity was noted in the first sample taken on March 20, 1996. This did not seem unusual to the Chemistry personnel obtaining, analyzing and reviewing the sample results considering the low 3% power level.

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## ANALYSIS OF OCCURRENCE (cont'd)

On March 26, 1996, at 0810 hours, another Chemistry Technician utilizing the backup sample apparatus noted that the sample exhibited no detectable radioactivity. Because the reactor was at approximately 23% power, the Chemistry Technician expected to see some level of radioactivity in the sample. The Chemistry Technician also noted that the apparatus was making a hissing noise and ensured that the needle was hand tight. The hissing noise was not detected earlier due to the high level of noise in the room. The noise level at the time of detection was much lower due to unrelated equipment being removed from service. Using a pair of pliers, the Chemistry Technician tightened the sample needle on the backup sample apparatus to eliminate the hissing noise and probable air inleakage. Two additional samples were taken at 0830 hours and 0852 hours. Both samples indicated detectable activity commensurate with 23% power. During investigation of this event, upon removal of the needle luer lock adapter from the backup sample panel, the adapter was found to be defective. Based upon comparison of the power level and detected radioactivity level during this startup and during previous startups, representative samples were obtained following the needle being tightened with pliers.

The primary offgas sample panel includes a vacuum gauge which provides positive indication that a representative sample has been obtained. This design consideration was not incorporated into the backup sample apparatus. As a result, Chemistry Technicians were not provided with a positive indication of representative sampling following maintenance on the needle (i.e. replacement). Also, the results of samples obtained at low power levels are subject to wide variability. Although the problem was identified by a technician demonstrating good questioning and self checking, not all Chemistry personnel were familiar with expected offgas system nuclide concentrations at low power conditions. This variability and lack of knowledge of expected offgas sample results contributed to the Chemistry personnel's lack of questioning attitude when offgas sample analysis yielded no detectable radioactivity at reactor power levels of less than 23%.



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## CAUSE OF OCCURRENCE

The apparent cause of the non-representative offgas samples is a defective needle luer lock adapter. This defective needle luer lock adapter resulted in inadequate operation of the panel by allowing air to be drawn into the vial during sample collection. The air diluted the sample resulting in non-representative samples. Contributing factors to the non-representative sample include inadequate design considerations for the backup sample apparatus (i.e., missing vacuum gauge) and consequent lack of post maintenance testing following needle replacement. A lack of questioning attitude of Chemistry personnel contributed to the length of the event. An additional contributing factor was the primary offgas sample panel not functioning properly due to water in the panel.

## ASSESSMENT OF SAFETY CONSEQUENCES AND IMPLICATIONS

As stated previously, the required representative samples of the offgas effluent during offgas system operation with the Offgas Pre-treatment Radiation Monitors inoperable were not taken during plant startup. However, the representative sample of the offgas obtained and conditions prior to declaring the monitors inoperable indicated normal radioactivity levels. The offgas effluent is exhausted through the North Plant Vent. During the course of this event, the North Plant Vent radiation monitors were operable and capable of detecting abnormal effluent radioactivity. No abnormal effluent radioactivity was detected. In addition, sampling and analysis of the specific activity of the reactor coolant in accordance with Hope Creek Technical Specification 3.4.5, "Specific Activity," was implemented throughout the period. No abnormal specific activity was detected. Therefore, there were no adverse safety consequences associated with this event. Based upon the above discussion, the health and safety of the public were not affected.

## PREVIOUS OCCURRENCES

LER 95-027-00 reported a failure to analyze an offgas sample within the required time due to failure of the sample valve on the primary offgas sample panel and also documented a missed offgas sample due to inadequate work planning. The corrective actions focused on repairing the sample valve on the primary offgas sample panel and correcting the work planning process for compensatory actions required by Technical Specifications. The corrective actions from this event would not have been expected to prevent this occurrence.

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## CORRECTIVE ACTIONS

1. The needle luer lock adapter on the backup sample apparatus was replaced.
2. The backup sample apparatus will be modified to include positive indication of a representative sample. This modification will support post maintenance testing. This modification will be completed by August 31, 1996.
3. A tailgate training session will be conducted with Chemistry personnel to discuss offgas sampling in a startup condition. This tailgate training session will be completed by May 31, 1996.
4. Chemistry Technician continuing training will be conducted to discuss missed offgas samples, the causes, and corrective actions taken to prevent recurrence. This training will be completed by July 8, 1996.
5. The causes and corrective actions taken as a result of missed offgas samples will be incorporated into the Chemistry Technician initial training lesson plan prior to the next Chemistry Technician initial training.
6. Engineering will determine the cause of the moisture problems in the offgas sample panel and identify appropriate corrective actions by June 15, 1996. The cause and corrective actions will later be provided to the Nuclear Regulatory Commission.