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

Nuclear Business Unit

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U. S. Nuclear Regulatory Commission
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Washington, DC 20555

**LER 311/99-005-00
SALEM GENERATING STATION - UNIT 2
FACILITY OPERATING LICENSE NO. DPR-70
DOCKET NO. 50-311**

Gentlemen:

This Licensee Event Report entitled "Failure To Meet Technical Specification Action Statement Requirements For High Oxygen Concentration In The Waste Gas Holdup System" is being submitted pursuant to the requirements of the Code of Federal Regulations ****10CFR50.73(a)(2)(i)****

Sincerely,

D. F. Garchow
General Manager
Salem Operations

Attachment

/rbk

C Distribution
LER File 3.7

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PDR ADDCK 05000311
S PDR

IE 22%

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 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the 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. If an 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 information collection.

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SALEM UNIT 2

DOCKET NUMBER (2)
05000311

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TITLE (4)
Failure To Meet Technical Specification Action Statement Requirements For High Oxygen Concentration In The Waste Gas Holdup System

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
05	04	99	99	-- 005	-- 00	06	02	99		05000
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
6			20.2201(b)		20.2203(a)(2)(v)		X		50.73(a)(2)(i)	
POWER LEVEL (10)			20.2203(a)(1)		20.2203(a)(3)(i)				50.73(a)(2)(ii)	
0			20.2203(a)(2)(i)		20.2203(a)(3)(ii)				50.73(a)(2)(iii)	
			20.2203(a)(2)(ii)		20.2203(a)(4)				50.73(a)(2)(iv)	
			20.2203(a)(2)(iii)		50.36(c)(1)				50.73(a)(2)(v)	
			20.2203(a)(2)(iv)		50.36(c)(2)				50.73(a)(2)(vii)	
									OTHER	
									Specify in Abstract below or in NRC Form 366A	

LICENSEE CONTACT FOR THIS LER (12)

NAME: Brooke Knieriem, Salem Licensing
TELEPHONE NUMBER (Include Area Code): (609) 339-1782

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE): X NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

This LER reports the operation of Salem Unit 2 in a condition prohibited by Technical Specification (TS) 3/4.11.2.5, Radioactive Effluents, Explosive Gas Mixture. Specifically, TS 3/4.11.2.5 requires that the concentration of oxygen in the waste gas holdup system shall be limited to less than or equal to 2% by volume at all times. In the event that oxygen concentration is greater than 2% by volume, but less than 4% by volume, oxygen concentration must be reduced to 2% or less within 48 hours. Contrary to these requirements, on May 2, 1999, during draining of the Refueling Water Storage tank, the oxygen concentration in the 24 Waste Gas Decay Tank exceeded 2.8%. Corrective measures were commenced in accordance with station procedures to reduce the oxygen concentration when the out of specification condition was identified. However, the oxygen concentration was not reduced to a level of 2% or less within the required 48 hours. The failure to reduce the oxygen concentration to within TS limits within the required time was caused by the operators' inability to perform the necessary number of tank purges in the time available. To prevent recurrence, existing procedures and practices that involve the processing and purging of the Waste Gas Decay tanks will be evaluated to identify improvements that would allow for a shorter purge time. Operations Department Management will provide a read and sign notice to all Supervisors in the Control Room emphasizing the importance of taking immediate actions to remedy entering TS Action Statements. The notice will stress the importance of the timely planning and execution of actions to correct out of specification conditions. In addition, an investigation will be conducted to identify and correct any process failure or equipment deficiency that may have contributed to the intrusion of oxygen into the Waste Gas System.

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

PLANT AND SYSTEM IDENTIFICATION

Westinghouse - Pressurized Water Reactor

Waste Gas Holdup System {WE/-}*
Chemical And Volume Control System {CB/-}
Residual Heat Removal System {BP/-}

* Energy Industry Identification System (EIIS) codes and component function identifier codes appear as {SS/CC}

CONDITIONS PRIOR TO OCCURRENCE

At the time of the occurrence, Salem Unit 2 was shutdown, in Mode 6 with the Reactor Coolant system depressurized. The Refueling Water Storage tank {BP/-} was in the process of being drained to the 23 CVCS Hold Up Tank.

DESCRIPTION OF OCCURRENCE

On May 2, 1999, at 2017, draining of the Refueling Water Storage tank to the 23 CVCS Hold Up Tank {CB/-} was halted based upon a report of high oxygen levels. The oxygen concentration in the cover gas for the 23 CVCS HUT was reported to be at 2.3% and the 24 Waste Gas Decay Tank {WE/-} was reported at 2.8%. Operations personnel commenced procedure S2.OP-SO.WG-0012(Q), Purging Waste Gas Systems Components. Five purges were performed on Waste Gas Decay Tanks and on the 23 CVCS Hold Up Tank before oxygen levels were returned to below the Technical Specification 2% limit. Briefly during the purge process the oxygen concentration in the Waste Gas Holdup system reached 4.1%. TS 3/4.11.2.5 requires that with oxygen concentration greater than 4%, that all additions of waste gases to the system be suspended and the concentration be reduced to less than or equal to 2% without delay. At that time the actions to satisfy these TS requirements were already being carried out. The Waste Gas System oxygen concentration was restored to within the TS limit of 2% or less at 1336 on May 5, 1999. The total duration of the out of specification condition was approximately 65.5 hours.

CAUSE OF OCCURRENCE

The cause of the violation of the 48-hour requirement to return oxygen levels to at or below 2% was the inability of operators to expeditiously perform Waste Gas Decay Tank purges. Procedural requirements and physical plant limitations restricted the rapidity with which operators could cycle a tank through a purging cycle. In this case two tanks per day were being purged when the process required five tanks to be purged in two days to

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CAUSE OF OCCURRENCE (Cont.)

reduce the oxygen levels to within required limits. Contributing to this event was an initial lack of immediacy by the Control Room Operators. The unit was midway through a refueling outage and operators' attention was focused on refueling events. At the time of discovery, the out-of-specification tanks were immediately isolated, to be processed at a later time. At the start of the following shift, a Control Room Supervisor and Nuclear Equipment Operator were then dedicated to the task of restoring the system to within the required limits. Comparable individuals remained involved until final restoration.

PRIOR SIMILAR OCCURRENCES

A review of LERs for Salem Units 1 and 2 and Hope Creek for the past two years did not identify any reportable occurrences that involved the failure to meet TS action statement times that were caused by restrictive procedural requirements or by physical plant or procedural limitations. In addition, no LERs were identified that were caused by a lack of immediacy on the part of Control Room personnel to satisfy TS action statement requirements.

SAFETY CONSEQUENCES

There were no safety consequences as a result of this event. TS 3/4.11.2.5, Radioactive Effluents, Explosive Gas Mixture, is provided to ensure that the concentration of potentially explosive gas mixtures contained in the Waste Gas Holdup system is maintained below the flammability limits of hydrogen and oxygen. Maintaining the concentration of hydrogen and oxygen below their flammability limits provides assurance that the release of radioactive materials will be controlled. During this event, the highest oxygen concentration measured was 4.1%, for a brief period. In addition, the liquid effluents that were being processed consisted of reactor coolant that had been used to support refueling operations over a thirty-four day period prior to this event. Therefore, in the event that an explosion were to have occurred, the radiological consequences would have been minimal.

CORRECTIVE ACTIONS

- Existing procedures and practices that involve the processing and purging of the Waste Gas Decay Tanks will be evaluated for improvements to allow for a shorter purge cycle time. (PIR 990504273, CRCA 01 and CRCA 02, 6/30/99)

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CORRECTIVE ACTIONS (Cont.)

2. Operations Department Management will provide a read and sign notice to all Supervisors in the Control Room emphasizing the importance of taking immediate actions to remedy entering TS Action Statements. The notice will stress the importance of the timely planning and execution of actions to correct out of specification conditions. (PIR 990504273, CRCA 03, 6/15/99)

3. An investigation will be conducted to identify and correct any process failure or equipment deficiency that may have contributed to the intrusion of oxygen into the Waste Gas System. (PIR 990510198, CREV 01, 6/11/99)