

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

FACILITY NAME (1) Susquehanna Steam Electric Station - Unit 2		DOCKET NUMBER (2) 05000388	PAGE (3) 1 OF 5
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TITLE (4)
Loss Of Continuous Vent Sampling - Unit 2 Reactor Building

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
4	2	98	98	003	00	5	4	98	FACILITY NAME	DOCKET NUMBER 05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
POWER LEVEL (10) 100	20.2201(b)	20.2203(a)(2)(v)	X	50.73(a)(2)(i)	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 Cornelius T. Coddington - Senior Engineer, Licensing	TELEPHONE NUMBER (Include Area Code) 717 / 542-3294
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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
X	IL	MO	R362	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On April 2, 1998 at 1233 hours with Unit 2 in Condition 1 (Power Operation) at 100 percent power, the Unit 2 Reactor Building Vent Monitoring System was declared inoperable due to a non-functioning vacuum pump (motor bearing failure) and Technical Specification Limiting Conditions for Operation (LCOs) 3.3.7.5 and 3.3.7.11 were entered. Backup sampling was established within 52 minutes from the receipt of the alarms. The Unit 2 Reactor Building Vent Monitoring System was repaired (pump motor replaced) and returned to service on April 6, 1998. A loss of continuous sampling from the backup sampling pump occurred on April 3, 1998, due to loss of power to the sample pump. A second loss of backup continuous sampling occurred on April 5, 1998, due to twisted sample tubing. Major completed corrective actions include replacement of the pump motor, evaluation of the Preventative Maintenance Program for the sample pump motors, replacement of the sample tubing and securing and tagging of backup sample pump electrical connections. A modification to provide dedicated power for backup sampling will be installed. PP&L is also implementing a comprehensive plan to improve the overall reliability of the entire Vent Monitoring System. Analysis of the particulate filter and iodine cartridge which provided effluent sampling of the time immediately before and immediately after each of the interruptions in sampling showed no abnormal activity. During the same periods of time, there were no changes in plant conditions or other indications of high levels of particulate or iodine activity which could cause any abnormal release during the interrupted flow time period. It is reasonable to conclude that no significant release occurred while sampling was lost in this vent. As such, there were no consequences to the health and safety of the public.

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

EVENT DESCRIPTION

On April 2, 1998, at 1233 hours with Unit 2 in Condition 1. (Power Operation) at 100 percent power, the control room received the stack monitoring Hi-Hi radiation and the stack monitoring system trouble alarms. A Nuclear Plant Operator (NPO; utility; non-licensed) was dispatched to the local panel. The NPO found the vacuum pump not running. The NPO reset the thermals but noted an unusual noise coming from the pump when it was restarted. The pump was shutdown. The Unit 2 Reactor Building Vent Monitoring System (EIS Code: IL) was declared inoperable and Technical Specification Limiting Conditions for Operation (LCOs) 3.3.7.5 and 3.3.7.11 were entered. Backup sampling was established within 52 minutes from the receipt of the alarms. The Unit 2 Reactor Building Vent Monitoring System was repaired (pump motor replaced) and returned to service on April 6, 1998.

The second loss of continuous sampling event which involved the backup sampling system occurred on April 3, 1998, at 1252 hours. When a Chemistry Technician (utility; non-licensed) arrived at the Unit 2 Reactor Building Vent Monitoring System console to get the required 4 hour flows and 8 hour noble gas sample, the backup sample pump was found not running. The Technician found that the plug from the pump to the extension cord was not fully inserted. The power cord for the pump was reconnected to resume sampling and the connection was placed in a different location to prevent accidental contact.

The third loss of continuous sampling event which involved the backup sampling system occurred on April 5, 1998, at 2100 hours. When a Chemistry Technician (utility; non-licensed) arrived at the Unit 2 Reactor Building Vent Monitoring System console to get the required 4 hour flows and 8 hour noble gas sample, he found the sample tubing from the vent to the particulate and iodine backup sampling apparatus twisted to the point where it was doubtful that there was any flow through the sampler. The Technician stabilized the sampling apparatus to prevent movement and later replaced the pump and tubing used to perform the sampling.

CAUSE OF EVENT

The cause of the first event was determined to be that the sample pump motor bearing failed and caused the motor to short out. The motor bearing failure is considered a random mechanical failure.

The cause of the second event was determined to be inadequate power supply available for backup sampling pumps in the area of the pumps. To provide adequate power to the backup sample pumps requires extension cords to be used. A causal factor noted was that electrical connections were not adequately secured and tagged.

The cause of the third event was determined to be the design of the installation of the backup sampling pumps in that the sample tubing twisted too easily and the sample holder rotated on the pump.

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REPORTABILITY/ANALYSIS

The three events described in this report involve loss of continuous sampling from the Vent Monitoring System. The first event involves the loss of continuous sampling in the primary Vent Monitoring System. The second and third events are related to the backup sampling apparatus which is used during periods when the primary system is not available. Recently, there has been an increase in events involving the Vent Monitoring System. The primary Vent Monitoring System's reliability does not meet PP&L's standards. PP&L has placed this system in the Maintenance Rule need improvement category. A comprehensive action plan is in place to improve the reliability of the primary Vent Monitoring System. The backup Vent Monitoring System equipment reliability is also being improved through the corrective actions as described in this report.

The following is the analysis for each of the events contained in this report:

On April 2, 1998, from 1233 to 1325, continuous sampling from the Unit 2 Reactor Building vent was lost due to a motor bearing failure in the sample pump. The Technical Specification requirement to continuously sample this release point for particulate and iodine activity (Technical Specification 3.3.7.11 Action 112 and Technical Specification 4.11.2.1) could not be met during the 52 minutes it took to implement backup continuous sampling. This event was determined to be reportable in accordance with 10CFR50.73(a)(2)(i)(B) in that there is no time period allowed to reestablish continuous sampling in the current Technical Specifications.

Continuous sampling was also lost on April 3, 1998, due to the loss of power to the backup sample pump. The third loss of continuous sampling occurred on April 5, 1998, when the sample tubing on the backup sampler became twisted due to the rotation of the sample holder and prevented flow to the sampler.

Analysis of the particulate filter and iodine cartridge which provided effluent sampling of the time immediately before and immediately after each of the interruptions in sampling, showed no abnormal activity, when averaged over the sample period. During the same periods of time, there were no changes in plant conditions or other indications of high levels of particulate or iodine activity which could cause any abnormal release during the interrupted flow time period. It is reasonable to conclude that no significant release occurred while continuous sampling was lost in this vent. As such, there were no consequences to the health and safety of the public.

In accordance with the guidelines provided in NUREG-1022, Revision 1, Section 5.1.1, the required submission date for this report was determined to be May 4, 1998.

CORRECTIVE ACTIONS

The following corrective action has been completed:

I. For the first event:

- The sample pump motor was replaced.

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- The Reactor Building Vent Monitoring System was returned to service.
- An evaluation of the Preventative Maintenance Program was performed.

II. For the second event:

- The power cord for the backup sample pump was reconnected and the connection was placed in a different location to prevent accidental contact.
- The power cord connections were secured and tagged to identify them as providing LCO sampling.
- The requirements to secure and tag power cord connections for the backup sampling system were proceduralized.

III. For the third event:

- The sample holder on the backup sampling system was replaced with a new holder.
- The tubing on the backup sampling apparatus was replaced with thick walled tubing.
- The requirement to use the thick walled tubing on the backup sampling apparatus was proceduralized.

The following corrective actions are to be taken:

I. For the first event:

- Develop Preventative Maintenance procedures to replace the sample pump motors at regular intervals.
- Implement plan to improve the reliability of the entire Ventilation Monitoring System.

II. For the second event:

- Install modification to provide dedicated power for the backup sampler.

III. For the third event:

- Provide a cart and cover for protection of backup sample pump during use.



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ADDITIONAL INFORMATION

Past Similar Events: Docket No. 50-387 LER 98-003-00
LER 96-008-00
LER 94-005-00
LER 85-013-00
LER 84-039-00

50-388 LER 98-002-00
LER 97-005-00

Failed Component: Roots Pump motor in Reactor Building Ventilation Monitoring System