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**LICENSEE EVENT REPORT (LER)**

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

FACILITY NAME (1)

**SURRY POWER STATION , Unit 1**

DOCKET NUMBER (2)

05000 - 280

PAGE (3)

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TITLE (4)

**Radiation Monitors Inoperable Due to Heat Trace Failure**

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	
07	31	1999	1999	005	00	08	27	1999	Surry Power Station, Unit 2	05000 -- 281	
									FACILITY NAME	DOCKET NUMBER	
										05000 --	
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
N		20.2201(b)			20.2203(a)(2)(v)			50.73(a)(2)(i)		50.73(a)(2)(viii)	
POWER LEVEL (10)		20.2203(a)(1)			20.2203(a)(3)(i)			50.73(a)(2)(ii)		50.73(a)(2)(x)	
100%		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)		<input checked="" type="checkbox"/> 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

E. S. Grecheck, Site Vice President

TELEPHONE NUMBER (Include Area Code)

(757) 365-2001

**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
X	IL	MON	Kaman Sciences Corp	Y					
X	IL	Heat Trace	Thermon Mfg Corp	N					

**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)**

Units 1 and 2 were operating at 100% and 82% power, respectively, on July 31, 1999, when a control room annunciator alarmed, indicating a problem with the effluent radiation monitors. The appropriate annunciator response and abnormal procedures were promptly performed and a low sample flow condition was identified for the gaseous vents system radiation monitors, 1-VG-RM-131-1 and 1-VG-RM-131-2. The monitors were declared inoperable at 08:28 and the preplanned alternate method of monitoring was initiated in accordance with Technical Specifications (TS) Table 3.7-6. An action statement was entered in accordance with TS Table 3.7-6, requiring restoration of the monitors within seven days or the submittal of a Special Report within 30 days. Investigation of the problem revealed that one of the heat trace circuits for the monitors' sample suction line was degraded, which allowed the formation of condensation within the system. As a result, condensation accumulated and blocked the sample flow through the system. The degraded heat trace circuit was replaced, additional heat trace is being installed, and the monitors are scheduled to be returned to service by August 30, 1999. To prevent recurrence, a preventive maintenance task was initiated to periodically check the condition of the heat trace circuits. This Special Report is being submitted pursuant to TS Table 3.7-6.

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

**1.0 DESCRIPTION OF THE EVENT**

Units 1 and 2 were operating at 100% and 82% power, respectively, on July 31, 1999, when control room annunciator 1-RMA-C4 [EIS-IB] alarmed, indicating a problem with the effluent radiation monitors [EIS-IL,MON]. The appropriate annunciator response and abnormal procedures were promptly performed and a low sample flow condition was identified for the gaseous vents system radiation monitors, 1-VG-RM-131-1 (normal range) and 1-VG-RM-131-2 (high range). As a result of this condition, 1-VG-RM-131-1 and 1-VG-RM-131-2 were declared inoperable at 08:28 and the preplanned alternate method of monitoring was initiated in accordance with Technical Specifications (TS) Table 3.7-6. An action statement was entered in accordance with TS Table 3.7-6, requiring restoration of the monitors within seven days or the submittal of a Special Report within 30 days.

During the preceding three-week period, 1-VG-RM-131-1 and 1-VG-RM-131-2 had experienced similar low sample flow conditions. I&C personnel had performed extensive troubleshooting and had replaced several components to restore the system to an operable status. Further investigation revealed that one of the heat trace circuits for the monitors' common sample suction line was degraded, which allowed the formation of condensation within the system. As a result, condensation accumulated and blocked the sample flow through the system.

The degraded heat trace circuit was replaced on August 13, 1999. However, 1-VG-RM-131-1 and 1-VG-RM-131-2 have not been returned to an operable status due to the difficulty in removing accumulated moisture from the system. Additional heat trace is being added to the system to further reduce moisture accumulation.

This Special Report is being submitted pursuant to TS Table 3.7-6 since 1-VG-RM-131-1 and 1-VG-RM-131-2 were not returned to an operable status within seven days.

**2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS**

1-VG-RM-131-1 and 1-VG-RM-131-2 are designed to survey effluents that may be released from the auxiliary building ventilation vent No. 2 following an accident. These radiation monitors are not safety-related and do not initiate any automatic equipment actuations.

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**2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS (Continued)**

When the subject monitors were declared inoperable, the preplanned alternate method of monitoring was initiated, utilizing auxiliary building ventilation vent No. 2 high range effluent monitor, 1-VG-RM-123. In addition, Health Physics personnel were notified that the monitors were out of service and that off-site monitoring may be necessary in the event of a radioactive release.

These compensatory measures provide an acceptable alternate method of satisfying the design functions of 1-VG-RM-131-1 and 1-VG-RM-131-2. Therefore, this event resulted in no safety consequences or significant implications and the health and safety of the public were not affected at any time.

**3.0 CAUSE**

The sample suction line for 1-VG-RM-131-1 and 1-VG-RM-131-2 is heat traced to preclude moisture in the gas sample from condensing. An accumulation of moisture in the system is not desirable since it could affect the accuracy of iodine and particulate sampling, and potentially impede sample flow.

This event was caused by the partial failure of one of the heat trace circuits on the sample suction line, which allowed moisture to condense within the system and block the sample flow to the monitors. This condition was exacerbated by the absence of heat trace on the radiation monitors' skid and sample discharge line.

**4.0 IMMEDIATE CORRECTIVE ACTION(S)**

The appropriate annunciator response and abnormal procedures were promptly performed.

1-VG-RM-131-1 and 1-VG-RM-131-2 were declared inoperable and the preplanned alternate method of monitoring was initiated.

**5.0 ADDITIONAL CORRECTIVE ACTIONS**

The degraded heat trace circuit was replaced and efforts are underway to remove accumulated moisture from the system. 1-VG-RM-131-1 and 1-VG-RM-131-2 are scheduled to be returned to an operable status by August 30, 1999.

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**6.0 ACTIONS TO PREVENT RECURRENCE**

A preventive maintenance task was initiated that will periodically check the condition of the heat trace circuits for 1-VG-RM-131-1 and 1-VG-RM-131-2.

To help minimize the potential for condensation within the system, heat trace is being installed on the radiation monitors' skid and sample discharge line.

**7.0 SIMILAR EVENTS**

Special Report No. 50-280/1994-007-00  
Process Vent High Range Accident Monitor Inoperable Greater Than Seven Days

**8.0 MANUFACTURER/MODEL NUMBER**

Kaman Science  
Model: HRN, HRH