The Light company
Houston Lighting & Power South Texas Project Electric Generating Station P. O. Box 289 Wadsworth, Texas 77483

June 24, 1991
ST-HL-AE-3799
File No.: G26
10CFR50.73

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

South Texas Project Electric Generating Station
Unit 2
Docket No. STN 50-499
Licensee Event Report 91-008
Regarding Two Containment Ventilation Isolation
Actuations Due to a Failure in the Radiation Monitoring System

Pursuant to 10CFR50.73, Houston Lighting & Power Company (HL&P) submits the attached Licensee Event Report 91-008 regarding two Containment Ventilation Isolation Actuations due to a failure in the Radiation Monitoring System. These events did not result in an adverse impact on the health and safety of the public.

If you should have any questions on this matter, please contact either Mr. C. A. Ayala at (512) 972-8628 or me at (512) 972-7205.

William J. Jump
Manager,
Nuclear Licensing

SMH/kmd

Attachment: LER 91-008 (South Texas, Unit 2)

IE22
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cc:

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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
South Texas, Unit 2	0 5 0 0 0 4 9 9	1 OF 0 3

TITLE (4) Two Containment Ventilation Isolation Actuation Due to a Failure in the Radiation Monitoring 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 NAMES	DOCKET NUMBER(S)
										0 5 0 0 0
0 5	2 5	9 1	9 1	— 0 0 9	— 0 0	0 6	2 4	9 1		0 5 0 0 0

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
3	0 0 0	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Charles Ayala - Supervising Licensing Engineer	AREA CODE 5 1 2 9 7 2 - 8 6 2 8

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	I L	M O N	G 2 9 0	Yes							

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On May 25, 1991, Unit 2 was in Mode 3 at 2235 psig and 567 degrees. At 0107 a Containment Ventilation Isolation (CVI) actuation occurred. On May 26, Unit 2 was in Mode 1 at 75% power when at 0558 a second CVI actuation occurred. Troubleshooting following the actuations indicated that a faulty RM-23 module associated with one of the two purge exhaust radiation monitors (RT-8012) caused the two spurious actuations. The faulty module has been replaced. An analysis is being performed to determine the failure mode.

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

DESCRIPTION OF EVENT:

On May 25, 1991, Unit 2 was in Mode 3 at 2235 psig and 567 degrees. At 0107 a Containment Ventilation Isolation (CVI) actuation occurred. On May 26, Unit 2 was in Mode 1 at 75% power when at 0558 a second CVI actuation occurred. CVI is considered an Engineered Safety Feature that ensures the Reactor Containment Building is isolated in the event of high radiation or a Safety Injection signal. In both cases, purging of the containment was not in progress at the time of the event, therefore the purge isolation valves were already in their closed position. The only other valves required to actuate on a CVI are the isolation valves associated with the Reactor Containment Building (RCB) Atmosphere Radiation Monitoring System. These valves closed on both occasions as required.

Technical Specification related radiation monitors have control and display functions contained within individual RM-23 modules located in the ZCP-23 console. The ZCP-23 console is located in the control room. Each RM-23 module is a microprocessor based unit that processes data from an individual radiation monitor. The RM-23 module generates the actuation signal for radiation monitors associated with Engineered Safety Features.

Following the first event it was noted that one of the redundant RCB purge exhaust radiation monitors (RT-8012) was not functioning properly. Troubleshooting was performed which included cleaning the contacts associated with the RT-8012 control card located in the RM-23 module. Post maintenance testing was satisfactorily performed and the monitor was returned to service. Following the second actuation, problems with the RT-8012 monitor were again noted. The RM-23 module associated with the RT-8012 monitor was replaced. The new RM-23 module was functionally tested and returned to service.

The suspect RM-23 module is being tested in the plant shop by Maintenance technicians under direction of the system engineer. Diagnostics were run and the module was fully tested and no evidence of the problem was found. The module has been allowed to continue running while being monitored for any spurious signals. An additional spurious signal was detected which caused the actuation relay to pick-up, which, had the monitor been installed in the plant, would have resulted in a CVI actuation. This evidence confirms that the source of the spurious signals is within the RM-23 module.

CAUSE OF EVENT:

These events were caused by a faulty RM-23 module associated with the RT-8012 monitor. However, the exact source for these spurious signals from the module has not been identified.

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

ANALYSIS OF EVENTS:

Unplanned actuation of an Engineered Safety Feature is reportable pursuant to 10CFR50.73(a)(2)(iv). The CVI signal actuated on all three trains. Equipment not already in the actuated position responded as expected. No evidence of high radiation was found. While any unnecessary challenge to an Engineered Safety Feature is undesirable, actuation of CVI represents a minimal hazard since it could not cause, worsen or prevent mitigation of an accident. We are confident that, if high radiation was detected by RT-8012 it would have fulfilled its safety function by initiating a CVI.

CORRECTIVE ACTIONS:

The following corrective actions are being taken as a result of these event:

1. The RM-23 module associated with radiation monitor RT-8012 was replaced. The monitor was tested and returned to service.

2. The RM-23 module that was removed is being evaluated in an effort to determine the failure mode and to determine what corrective actions, if any, are prudent. This activity will be completed by September 30, 1991.

ADDITIONAL INFORMATION:

CVI actuation due to a spurious signal from the radiation monitoring system was previously reported in LER 1-91-001. Actuation of the Control Room Envelope HVAC, also attributed to spurious signals from the radiation monitoring system, have been reported in LERs 1-88-025, 1-89-021 and 2-91-005.

In response to Unit 2 LER 91-005, a commitment was made to do a root cause analysis via change analysis methods to identify any other potential causes for the spurious actuation of equipment receiving input from the radiation monitoring system. Data collected from these two events will be included in the analysis. The results of the analysis will be reported in a supplemental report to Unit 2 LER 91-005 by November 1, 1991.