

The Light company

Houston Lighting & Power

P.O. Box 1700 Houston, Texas 77001 (713) 228-9211

February 16, 1990

ST-HL-AE-3364

File No.: G26

10CFR50.73

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

South Texas Project Electric Generating Station
Unit 1

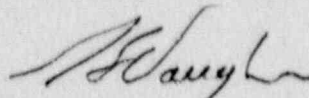
Docket No. STN 50-498

Licensee Event Report 90-001 Regarding Engineered Safety
Features Actuation Due to Loss of Power to a Radiation Monitor Relay

Pursuant to 10CFR50.73, Houston Lighting & Power (HL&P) submits the attached Licensee Event Report 90-001 regarding Engineered Safety Features Actuation due to loss of power to a radiation monitor relay. This event did not have any adverse impact on the health and safety of the public.

On February 2, 1990, an extension of the due date of this letter to February 16, 1990 was requested of, and granted by, Mr. Gene Holler of NRC Region IV.

If you should have any questions on this matter, please contact Mr. C. A. Ayala at (512) 972-8628 or myself at (512) 972-7921.



G. E. Vaughn
Vice President
Nuclear Operations

GEV/RAD/nl

Attachment: South Texas, Unit 1
LER 90-001

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PDR ADCK 05000498
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Houston Lighting & Power Company
South Texas Project Electric Generating Station

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Revised 12/15/89

L4/NRC/

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) South Texas, Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 4 9 8				PAGE (3) 1 OF 0 4							
TITLE (4) Engineered Safety Features Actuation Due to Loss of Power to a Radiation Monitor Relay																					
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)								
01	03	90	90	03	1	01	02	16					0 5 0 0 0								
OPERATING MODE (9) 1				THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)																	
POWER LEVEL (10) 11010				20.402(b)				20.405(c)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)					
				20.405(a)(1)(i)				50.38(c)(1)				<input type="checkbox"/> 50.73(a)(2)(v)				73.71(c)					
				20.405(a)(1)(ii)				50.38(c)(2)				<input type="checkbox"/> 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)				<input type="checkbox"/> 50.73(a)(2)(viii)(A)									
				20.405(a)(1)(iv)				50.73(a)(2)(ii)				<input type="checkbox"/> 50.73(a)(2)(viii)(B)									
				20.405(a)(1)(v)				50.73(a)(2)(iii)				<input type="checkbox"/> 50.73(a)(2)(ix)									
LICENSEE CONTACT FOR THIS LER (12)																					
NAME Charles Ayala - Supervising Licensing Engineer										TELEPHONE NUMBER 5 1 2 9 7 2 - 1 8 6 2 8											
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)						MONTH		DAY		YEAR	
YES (If yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> N											
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																					

On January 3, 1990 Unit 1 Mode 1 at 100% power. At 1051 hours a Containment Ventilation Isolator (CVI) actuation occurred due to loss of power to a radiation monitor actuation relay. The power supply to the Fuel Handling Building (FHB) HVAC monitor actuation logic relays are wired in a sequence arrangement to the CVI monitor relays. An interfering power lead to a FHB HVAC monitor actuation relay was lifted during scheduled work which resulted in the interruption of power to the CVI monitor relay. All systems functioned properly after power was restored to the monitor relays. The causes of this event were inadequate planning and failure to adhere to station work practices. Corrective actions include the revision of work package instructions, revision of the work planning procedure and the issuance of a training bulletin.

NL.LER90001.U1

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
South Texas, Unit 1	05000498	90	001	00	02	OF	04

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

DESCRIPTION OF OCCURRENCE:

On January 3, 1990, Unit 1 was in Mode 1 at 100% power. At 1051 hours a Containment Ventilation Isolation (CVI) actuation occurred. The source of the actuation was a loss of power to the high radiation relay for radiation monitor RT-8012 which when deenergized causes a CVI actuation. This occurred while Radiation Monitoring Technicians were installing a modification in a radiation monitor control panel.

The work which was performed was part of a design package to modify the Engineered Safety Feature (ESF) actuation logic so that operate failure signals from a radiation monitor channel would not cause an ESF actuation. The original work package instructions were written to perform the rewiring of the monitor relays for the Fuel Handling Building (FHB), Control Room Envelope (CRE) and CVI HVAC systems. Work instructions required that each system be placed in the actuated condition as a prerequisite. The system engineer and maintenance planner noted that the testing for each system following the modification would be time consuming and they wanted to reduce the amount of time each system was left in the actuated condition to minimize carbon filter consumption. Therefore, the system engineer and maintenance planner decided to revise the work instructions by writing separate work documents for each HVAC system to allow work on one system without affecting the other systems.

In the preparation of the work instructions at the request of the planner the system engineer conducted a walkdown of the radiation monitoring system control panel to identify the wiring changes which were necessary to perform the modification. The system engineer noted that the configuration of the relay is such that there is an upper and lower tier of termination points. The modification required the addition and removal of leads from the lower tier. It is physically impossible to access the lower tier without removing the leads from the upper tier. The system engineer did not relate the fact that an interference existed when discussing the job with the maintenance planner nor was it apparent from the schematics that the interference existed. The maintenance planner did not walkdown the job because he considered the walkdown conducted by the system engineer sufficient. Since the maintenance planner had no knowledge of the interference, he did not add steps in the work instructions for lifting the interfering leads and to evaluate the effects of lifting the leads.

During installation of the modification on the FHB HVAC, the power lead to the operate failure relay on the FHB HVAC monitor, RT-8035, was lifted in order to access the termination points beneath the power lead. The high radiation and operate failure relays for the FHB, CRE and CVI radiation monitors are powered from a 24 vdc power supply which is wired in sequence arrangement to the CRE, FHB then CVI relays. The interruption of power to one of the first relays in the sequence interrupts power to all the downstream relays. Therefore, when the power lead to the operate failure relay on the FHB HVAC monitor was lifted it resulted in a loss of power to the CVI monitor relays.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO 3150-0104

EXPIRES 8/31/86

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
South Texas, Unit 1	05000498	90	001	00	03	OF 04

TEXT (If more space is required, use additional NRC Form 368A's) (17)

DESCRIPTION OF OCCURRENCE Cont'd.

Shortly after the incident on January 3, 1990, the power was restored and all systems functioned properly. The work instructions for the FHB and CRE HVAC monitors were promptly revised to place all three systems in their actuated condition prior to performing the wiring changes. Rewiring for the FHB HVAC monitors was completed on January 5, 1990.

The rewiring of the CVI monitor relays was performed on November 13, 1989 without incident. The work instructions for the CVI portion of the modification were similar to the work instructions for the other two HVAC systems. However, the CVI relays are last in the power sequence; therefore, the subsequent loss of power to the relays had no effect on the other systems.

CAUSE OF OCCURRENCE:

The event was initiated when utility technicians performing a modification lifted a power lead which was not called for by the work instructions. This was caused by:

1. Failure of the maintenance planner to identify the interferences which existed and incorporate the additional steps which were required to perform the modification into the work instructions.
2. Failure of the technicians to follow station work practices which require that work be discontinued to obtain revised work instructions if the work required exceeds the scope of the work instructions.
3. The change to the work plan to perform the modification on each HVAC system separately, instead of with all three together, was not appropriately considered when replanning the modification work instructions.

ANALYSIS OF EVENT:

Unplanned actuation of an Engineered Safety Feature (ESF) is reportable under 10CFR50.73(a)(2)(iv). There was no adverse affect on safety due to this event because the system actuated to the safe mode and any radioactive release would have been contained.

While any unnecessary challenge to an ESF is undesirable, actuation of the Containment Ventilation Isolation represents a minimal hazard since it could not cause, worsen, nor prevent mitigation of an accident.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
South Texas, Unit 1	05000498	90	001	00	04	OF 04

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

CORRECTIVE ACTION:

The following corrective actions are being taken:

1. Work package instructions for this modification to the Control Room Envelope HVAC and Fuel Handling Building HVAC were revised to place all three affected systems in their actuated condition prior to performing work. Additional work steps were added to the CRE work instructions to lift the power leads.
2. The Radiation Monitoring Technicians involved were counseled and training will be provided to Radiation Monitoring Technicians on verbatim procedural compliance. The training will be completed by March 5, 1990.
3. The Work Planning procedure will be revised to further clarify the necessity to identify interferences and incorporate specific steps into the work instructions to remove the interferences. This will be completed by March 27, 1990.
4. A training bulletin will be issued to maintenance planners on the preparation of work instructions. The bulletin will reemphasize the need to walkdown a job when preparing work instructions. It will also stress the need to re-evaluate work instructions when the scope of a job is changed to ensure that every aspect of the job is properly considered. This will be completed by March 15, 1990.

ADDITIONAL INFORMATION

Failing to follow approved procedures was identified previously in Unit 1 Licensee Event Report 89-017. Contained within that LER was corrective action to review the implementation of the station's procedure compliance policy with regard to employee understanding and management enforcement. The review has been completed and an action plan for enhancing procedure compliance has been developed.

There has been one previous event regarding an ESF actuation due to failure to follow work instructions.

89-013

Inadvertent Actuation of FHB HVAC monitors due to
Improperly Installed Switch

NL.LER90001.U1