

The Light company

Houston Lighting & Power

South Texas Project Electric Generating Station P. O. Box 289 Wadsworth, Texas 77483

July 17, 1992
ST-HL-AE-4160
File No.: G26
10CFR50.73

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

South Texas Project
Unit 1
Docket No. STN 50-498
Voluntary Licensee Event Report 92-006
Regarding Discovery of Four Auxiliary Feedwater Flow Control
Valves in the Closed Position Contrary to Procedures

Pursuant to 10CFR50.73, Houston Lighting & Power Company (HL&P) submits the attached Voluntary Licensee Event Report (LER 92-006) regarding the discovery of four Auxiliary Feedwater flow control valves in the closed position contrary to procedures. This event did not have adverse impact on the health and safety of the public.

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

William J. Jump
William J. Jump
General Manager,
Nuclear Licensing

JMP/ag

Attachment: LER 92-006 (South Texas, Unit 1)

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A Subsidiary of Houston Industries Incorporated

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Houston Lighting & Power Company
South Texas Project Electric Generating Station

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Revised 10/11/91

L4/NRC/

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUIREMENT, 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) South Texas, Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 4 9 8 1 OFD 5										PAGE (3) 5			
TITLE (4) Discovery of Four Auxiliary Feedwater Flow Control Valves in the Closed Position Contrary to Procedures.																							
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(S)									
03	18	92	92	006	000	07	17	92						0 5 0 0 0									
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)																				
POWER LEVEL (10)			20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)								
0 3 3			20.405(a)(1)(ii)				50.36(a)(1)				50.73(a)(2)(iv)				73.71(c)								
			20.405(a)(1)(iv)				50.36(a)(2)				50.73(a)(2)(iv)				<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)								
			20.405(a)(1)(vi)				50.73(a)(2)(ii)				50.73(a)(2)(iv)(A)				Voluntary								
			20.405(a)(1)(iv)				50.73(a)(2)(iv)				50.73(a)(2)(iv)(B)												
			20.405(a)(1)(iv)				50.73(a)(2)(iii)				50.73(a)(2)(x)												
LICENSEE CONTACT FOR THIS LER (12)																			TELEPHONE NUMBER				
NAME																			AREA CODE				
Charles Ayala - Supervising Licensing Engineer																			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 NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC													
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)			MONTH	DAY	YEAR						
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO											

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

On March 18, 1992, with Unit 1 in Mode 1 at 33% power, the Shift Supervisor discovered that all four Auxiliary Feedwater (AFW) flow control valves were in the closed position following a reactor trip on March 14, 1992, contrary to the normal position as specified per procedures. The correct position for the AFW flow control valves is specified as open in plant procedures and plant drawings. The cause of this event was less than adequate procedures. A contributing cause was inattention to detail by the operating crews in not detecting the mispositioned valves for four days. Corrective actions included immediately opening the AFW flow control valves, revising the Reactor Trip Response procedure to require opening the AFW control valves after securing the AFW pumps, and revising the Plant Startup to 100% procedure so that verification of AFW system alignment for automatic operation prior to Mode 1 is not a conditional step. Additionally, this event will be added to the Licensed Operator Regualification Training. In addition, the Independent Safety Engineering Group (ISEG) will perform an in-depth review of causal factors for valve mispositioning. Additional corrective actions will be developed based on the results of ISEG's review.

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LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-830), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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South Texas, Unit 1	0500049892	006	00	02	OF	05

TEXT (If more space is required, use additional NRC Form 360A's) (17)

DESCRIPTION OF EVENT:

At 0230 hours on March 18, 1992, with Unit 1 in Mode 1 at 33% power, the Shift Supervisor discovered that all four Auxiliary Feedwater (AFW) flow control valves were closed, contrary to the normal position specified per the procedure. The valves were immediately opened by a Control Room Operator under the direction of the Shift Supervisor.

Technical Specification 3.7.1.2 requires the AFW system to be operable in Modes 1, 2, and 3. Technical Specification surveillance requirement 4.7.1.2.1.a.4 requires that operators "Verify that each automatic valve in the flow path is in the correct position whenever the Auxiliary Feedwater System is placed in automatic control or when above 10% RATED THERMAL POWER". The correct position for AFW flow control valves AF-MOV-7523, AF-MOV-7524, AF-MOV-7525, and AF-MOV-7526, as specified in plant procedures and drawings, is open.

On March 14, 1992, Unit 1 had tripped. As expected, AFW was automatically actuated to supply feedwater to the steam generators. The operators entered procedure OPOP05-EO-ES01, "Reactor Trip Response" at 1111 hours. As part of the recovery process, Step 11 of this procedure directs the operators to transfer steam generator feedwater supply to the startup steam generator feedpump, and to secure Auxiliary Feedwater by closing the AFW containment isolation valves and stopping the Auxiliary Feedwater pumps. The operator was then directed to establish main feedwater flow with the low power feedwater regulating valves. The transfer to main feedwater involves closing the AFW flow control valves while opening the feedwater regulating valves. The transfer was performed at 1125 hours as indicated by the Control Room Log.

The Reactor was subsequently restarted and power was increased per procedure 1POP03-ZG-0005, "Plant Startup to 100%." Step 5.3 of this procedure provides instructions for placing main feedwater in service, securing AFW, and aligning AFW for automatic operation per procedure 1POP02-AF-0001, "Auxiliary Feedwater." A step in 1PCP02-AF-0001 requires the operator to ensure the AFW flow control valves are open. Step 5.3 of procedure 1POP03-ZG-0005 is conditional, and is performed only if AFW is in service. Since AFW had been secured per the Reactor Trip Response procedure, Step 5.3 was not performed. Therefore, the AFW flow control valves remained closed.

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

DESCRIPTION OF EVENT: (Con't)

Correct alignment of the Auxiliary Feedwater system is directed by procedure for all plant operating conditions except following a Reactor Trip. During plant heatup, this is ensured by the Mode 3 system checklist performed per procedure 1(2)POP03-ZG-0001, "Plant Heatup."

If Mode 3 is entered due to a Reactor Trip, the AFW system is realigned automatically following an AFW actuation signal. The Reactor Trip Response procedure requires the operator to secure the AFW system, but does not address opening the AFW flow control valves. After the transition is made from the Reactor Trip procedure, normal operating procedures assume that the AFW system is already either in operation or aligned for automatic operation. Therefore, the AFW flow control valves will remain closed until the operators notice that they are out of their correct position.

The valves remained closed for four days before the Shift Supervisor discovered the mispositioned valves. During this time, 11 shift turnovers and associated panel walkdowns took place. Procedure OPOP01-ZQ-0022, "Shift Routines", defines WALKDOWN as "a detailed review and discussion of each control board panel by the on-coming and off-going Control Room Watchstanders." Part of the discussion is to include abnormal equipment alignments.

Technical Specification 4.7.1.2.1.a.4 requires that these valves be verified in their "correct" position at least once per 31 days when the AFW system is automatically controlled or when the unit is above 10% power. These surveillances were performed as scheduled and were current, including the surveillance required per Technical Specification 4.0.5 which measures stroke time. The valves were capable of performing their safety function for the purposes of Technical Specifications and were considered operable while in the closed position. These valves receive an automatic signal to open and would do so even if in the closed position. The valves in this event were capable of performing their safety function.

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LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 355A's) (17)

DESCRIPTION OF EVENT: (Con't)

At the time the AFW flow control valves were discovered closed, evaluations were performed to determine if this event was reportable to the NRC. Operations and Licensing Department personnel concluded that it was not reportable since the valves would have been capable of performing their safety function. A further review by the Nuclear Safety Review Board prompted site management to report this event as a Voluntary LER.

CAUSE OF EVENT:

The cause of this event was less than adequate procedures. The "Reactor Trip Response" procedure, OPOP05-EO-ES01, does not ensure that the AFW system is aligned for automatic operation as defined by plant operating procedures and drawings. A contributing cause was inattention to detail by the operating crews in not detecting the mispositioned valves. The inattention to detail was apparently due to the fact that the operators assumed that, since the four AFW flow control valves were in the same position, they were in the correct position. Subsequent shift turnovers, revealed no changes in the AFW system status, thus, not making the valves' positions suspect.

ANALYSIS OF EVENT:

Technical Specification 3.7.1.2 requires the Auxiliary Feedwater (AFW) system to be operable in Modes 1, 2, and 3. Technical Specification surveillance requirement 4.7.1.2.1.a.4 requires that operators "Verify that each automatic valve in the flow path is in the correct position whenever the Auxiliary Feedwater System is placed in automatic control or when above 10% RATED THERMAL POWER". The "correct" position is not specified in Technical Specifications.

Since the valves were not positioned as required per the surveillance procedure but the operation or condition did not violate a Technical Specification requirement (i.e. the Limiting Condition For Operation to have operable AFW Systems), this does not constitute a reportable event. The valves would have performed their safety function.

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LICENSEE EVENT REPORT (LER)
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TEXT (If more space is required, use additional NRC Form 365A's) (17)

REMEDIAL AND CORRECTIVE ACTIONS:

1. The AFW flow control valves were immediately opened under the direction of the Shift Supervisor.
2. A requirement was added to the "Reactor Trip Response" procedure OPOP05-EO-ES01 to open the AFW control valves after securing the AFW pumps and closing the AFW containment isolation valves.
3. The Plant Startup to 100% procedure was revised so that verification of AFW system alignment for automatic operation prior to Mode 1 is a required step and not a conditional step.
4. This event will be discussed during Licensed Operator Regualification Training to emphasize the importance of attention to detail, the importance of proper panel walkdowns and turnover practices and how they could have prevented this event. This action will be completed by September 26, 1992.
5. An Operations Information Bulletin has been issued describing this event. The bulletin includes a discussion of how proper panel walkdowns and turnover practices could have prevented this incident.
6. The Independent Safety Engineering Group (ISEG) will perform an indepth review of causal factors for valve mispositioning. This review will be completed by October 15, 1992. Additional corrective actions will be developed based on findings of the ISEG review.
7. The Operators will be surveyed to determine if there are any other unusual valve alignments that could result in a similar problem. Additional corrective actions will be developed based on the results of the survey. This survey will be completed by September 26, 1992.

ADDITIONAL INFORMATION:

In the last two years, there have been no similar events reported to the NRC.

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