

# The Light company

Houston Lighting & Power

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

February 28, 1992  
ST-HL-AE-4018  
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  
Licensee Event Report 92-001  
Regarding an Entry into Specification 3.0.3

Pursuant to 10CFR50.73, Houston Lighting & Power (HL&P) submits the attached Licensee Event Report 92-001 regarding an entry into specification 3.0.3. This event did not have an adverse impact on the health and safety of the public.

If you have any questions on this matter, please contact Mr. C. A. Ayala at (512) 972-8620 or me at (512) 972-7205.

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

WGC/amp

Attachment: LER 92-001 (South Texas Unit 1)

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A Subsidiary of Houston Industries Incorporated

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Revised 10/11/91

L4/NRC/

## LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-330), 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

PAGE (3)

1 OF 5

TITLE (4)

Entry Into Specification 3.0.3 Due to 2  
Trains of Essential Chillers Being Inoperable

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 (5)										
0	1	3	0	9	2	9	2	0	0	1	0	0	0	2	2	8	9	2	South Texas Unit 2	0 5 0 0 0 4 9 9

OPERATING MODE (9)

1

POWER LEVEL (10)

1 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)

20.402(i)

20.405(i)

50.73(a)(2)(iv)

73.71(b)

20.405(a)(1)(ii)

50.38(a)(1)

50.73(a)(1)(iv)

73.71(c)

20.405(a)(1)(iii)

50.38(a)(2)

50.73(a)(2)(iv)

OTHER (Specify in Abstract below and in Text, NRC Form 366A)

20.405(a)(1)(iv)

50.73(a)(2)(i)

50.73(a)(2)(iv)(A)

20.405(a)(1)(v)

50.73(a)(2)(ii)

50.73(a)(2)(iv)(B)

20.405(a)(1)(vi)

50.73(a)(2)(iii)

50.73(a)(2)(v)

LICENSEE CONTACT FOR THIS LER (12)

NAME

Charles Ayala - Supervising Licensing Engineer

TELEPHONE NUMBER

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

YES IF YAL COMPLY EXPECTED SUBMISSION DATE

X NO

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

On January 22, 1992, Unit 1 was in Mode 1 at 100 percent power. Essential Chiller 11C was inoperable for Maintenance. Due to an observed low oil level on Essential Chiller 11B, operations declared the chiller inoperable. This constituted two trains of Essential Chillers being inoperable and required entry into Technical Specification 3.0.3. The period of time during which two trains of Essential Chillers were inoperable was less than one hour. Applicable Operating and Maintenance procedures addressing the effect of oil level on Essential Chiller operability, will be revised.

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LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATES TO THE RECORD AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (4)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
South Texas, Unit 1	0500049892	-001	-0002		OF 05	

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

DESCRIPTION OF EVENT:

On January 22, 1992, Unit 1 was at 100 percent power. Essential Chiller 11C was inoperable due to a failed chilled water flow interlock. At 0205, as required by operating procedure, 11B Essential Chiller was declared inoperable due to a low indicated oil level in the upper sump. This resulted in entry into Specification 3.0.3 due to two trains of the Essential Chilled Water System being inoperable and not satisfying Limiting Condition for Operation 3.7.14. Oil level was restored in Essential Chiller 11B, at which time the chiller was declared operable and Specification 3.0.3 was exited at 0254 on January 22, 1992.

Subsequent investigation revealed that in this particular instance, the low indicated oil level did not render Essential Chiller 11B inoperable because there was sufficient oil in the lower sump to allow the Essential Chiller to start and run. The auxiliary oil pump was manually started and allowed to run for greater than 30 seconds. There was constant oil pressure at normal value, and the unit would have started had it received an automatic start signal. However, it was determined that the process used to restore the oil level in the upper sump of the chiller, did render the chiller inoperable. This investigation and determination was completed on January 30, 1992.

Refer to the attached figure for clarification of the following. During normal start of the Essential Chillers, a start signal energizes the Auxiliary Oil Pump which takes a suction on the upper sump and discharges to the suction of the shaft mounted oil pumps in the chiller compressor. It is necessary for the Auxiliary Oil Pump to run for 30 seconds and provide a constant pressure, to satisfy the chiller starting circuit and allow Essential Chiller compressor start. When the Essential Chiller is in stand-by, oil will tend to migrate to the lower oil sump, either due to seal leakage or leakage past the Jet Oil Pump Solenoid Valve. When the chiller is in operation, unit differential pressures are such that oil is drawn from the lower sump to the upper sump. The process for transferring oil from the lower sump to the upper sump, with the chiller secured, is contained in a Plant Maintenance Procedure. The procedure requires an oil filled hose to be attached between the Lower Sump Service Valve and the Oil Charging Valve. By closing the Auxiliary Oil Pump Suction Valve, opening the Oil Charging Valve, opening the Lower Sump Service Valve and manually running the Auxiliary Oil Pump, oil is transferred from the lower sump to the upper sump, where indicated level is determined by sight glasses. When in this configuration, the increased resistance to flow via the Auxiliary Oil Pump prevents the pump

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LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-630) U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20543 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

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PAGE (3)

South Texas, Unit 1

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TEXT (If more space is required, use additional NRC Form 308A.) (17)

DESCRIPTION OF EVENT: (CONT'D)

from developing sufficient discharge pressure to satisfy the chiller starting circuit. Therefore, the evolution of transferring oil renders the chiller inoperable, a circumstance not addressed procedurally.

CAUSE OF EVENT:

The root cause of this event was procedural inadequacy. A Plant Operations procedure requires contacting Maintenance for an unsatisfactory Essential Chiller indicated oil level. A Maintenance procedure provides direction for transferring oil from the lower sump to the upper sump. Neither procedure provides a caution step to indicate that the process renders the chiller inoperable, nor does the Operations Procedure contain guidance for compensatory action that would maintain chiller operability during the evolution.

A contributing factor to the event is the chiller design which results in the need for transferring oil from the lower to the upper sump. With this type unit, some oil migration is expected to occur, a situation exacerbated by excessive valve end/or seal leakage.

ANALYSIS OF EVENT:

Operation with two trains of Essential Chilled Water loops inoperable does not satisfy Technical Specification Limiting Condition for Operation Action Statement 3.7.14 and, as such, is reportable pursuant to 10CFR50.73 (a)(2)(i)(b). During the event, one 300 ton Essential Chiller in Trains A, B and C was operable, and one 150 ton Essential Chiller was operable in Train A. The period of time during which the 150 ton chiller in train B was inoperable was not excessive (less than 10 minutes) and the unit could have been manually started, immediately subsequent to restoring the oil transfer valve line-up to normal, in the event of an accident. For these reasons, the risk due to the event is considered minimal. There were no adverse safety or radiological consequences as a result of this event.

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LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-330), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
South Texas, Unit 1	015100049892	00	01	00	04	OF 05

TEXT (if more space is required, use additional NRC Form 306A's) (17)

CORRECTIVE ACTIONS:

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

1. Plant Operations personnel have been informed by Night Orders of the impact of transferring oil on chiller operability.
2. Plant Engineering and Plant Operations will Field Change the Plant Operating Procedures to provide guidance on manual auxiliary oil pump operation to allow an Essential Chiller with a low indicated oil level to be considered operable and started to restore upper sump oil level. This action will be completed by March 6, 1992.
3. Plant Engineering will provide clarifying information to Plant Operations and Maintenance, regarding conditions which constitute inoperability of Essential Chillers. This action will be completed by April 17, 1992.
4. Plant Operations will revise applicable procedures to provide specific guidance regarding operability of the Essential Chillers and additional instructions regarding maintaining chiller operability. This action will be completed by June 15, 1992.
5. Maintenance will revise applicable procedures for transferring lube oil in the Essential Chillers to clarify the effect on chiller operability and the compensatory actions Plant Operations may take to maintain chiller operability while transferring lube oil in the chillers. This action will be completed by June 15, 1992.

ADDITIONAL INFORMATION:

The 150 ton Essential Chillers are hermetic centrifugal liquid chilling units provided by York Division of Borg Warner Corporation, Model Number 4TH4B1-BBCS.

There have been no similar events, previously identified. However, due to a lack of procedural guidance regarding unit inoperability when transferring oil from the lower to the upper sump, it is clear that there have been occasions when an Essential Chiller was inoperable and was not properly identified as such.

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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 (F-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

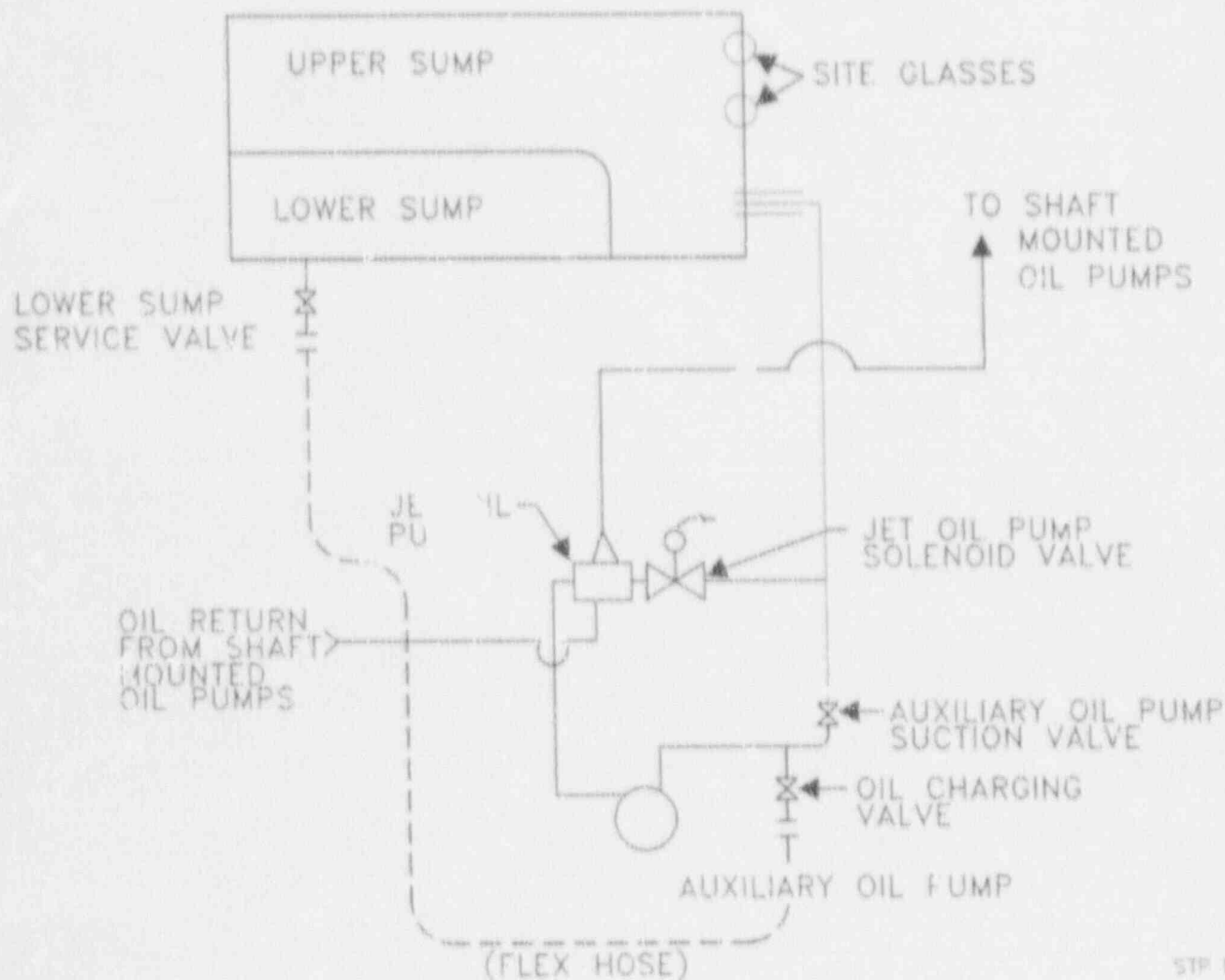
LER NUMBER (3)

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South Texas, Unit 1

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TEXT (if more space is required, use additional NRC Form 305A's) (17)

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