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

April 15, 1991
ST-HL-AE-3740
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 91-008
Regarding Partial Loss of Offsite Power on
Trains A and B Caused by Inadequate Procedures

Pursuant to 10CFR50.73, Houston Lighting & Power Company (HL&P) submits the attached Licensee Event Report 91-008 regarding a partial loss of offsite power on Trains A and B of Unit 1 due to inadequate procedures. 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

PLW/amp

Attachment: LER 91-008 (South Texas, Unit 1)

IE22
1/1

cc:

Regional Administrator, Region IV
Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

George Dick, Project Manager
U.S. Nuclear Regulatory Commission
Washington, DC 20555

J. I. Tapia
Senior Resident Inspector
c/o U. S. Nuclear Regulatory
Commission
P. O. Box 910
Bay City, TX 77414

J. R. Newman, Esquire
Newman & Holtzinger, P.C.
1615 L Street, N.W.
Washington, DC 20036

D. E. Ward/T. M. Puckett
Central Power and Light Company
P. O. Box 2121
Corpus Christi, TX 78403

J. C. Lanier/M. B. Lee
City of Austin
Electric Utility Department
P.O. Box 1088
Austin, TX 78767

R. J. Costello/M. T. Hardt
City Public Service Board
P. O. Box 1771
San Antonio, TX 78296

Rufus S. Scott
Associate General Counsel
Houston Lighting & Power Company
P. O. Box 61867
Houston, TX 77208

INPO
Records Center
1100 Circle 75 Parkway
Atlanta, GA 30339-3064

Dr. Joseph M. Hendrie
50 Bellport Lane
Bellport, NY 11713

D. K. Lacker
Bureau of Radiation Control
Texas Department of Health
1100 West 49th Street
Austin, TX 78756-3189

Revised 01/29/91

L4/NRC/

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 1	0 5 0 0 0 4 9 8	1 OF 0 4

TITLE (4)

Partial LOOP on Trains A and B Caused by Inadequate 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 NAMES	DOCKET NUMBER(S)
										0 5 0 0 0
0 3	1 5	9 1	9 1	0 0 8	0 0	0 4	1 5	9 1		0 5 0 0 0

OPERATING MODE (9): 5

POWER LEVEL (10): 0 0 0

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

20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	50.36(c)(1)	X 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	
A	E D	0 0 5 2	W 1 2 0	Y							

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 March 15, 1991, Unit 1 was in mode 5 due to a refueling outage. The unit experienced a partial loss of offsite power (LOOP) to Train A at 1313 hours due to actuation of the unit auxiliary transformer pilot wire relay which opened a switchyard breaker. During recovery from the first LOOP, a LOOP occurred on Train B of Urit 1 at 1328 hours when a 13.8 KV standby bus feeder breaker was opened by a control room operator. Both LOOP events were due to inadequate procedures. The subject procedures will be revised appropriately. In addition, a Load Center feeder breaker failed to close due to inadequate lubrication. Work requests have been issued to address proper lubrication.

LER\91098001.U1

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
South Texas, Unit 1	0 5 0 0 0 4 9 8	9 1	— 0 0 8	— 0 0	0 2 OF 0 4

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

DESCRIPTION OF EVENT:

On March 15, 1991, Unit 1 was in mode 5 due to a refueling outage. The unit experienced a partial loss of offsite power (LOOP) to Train A at 1313 hours due to actuation of the unit auxiliary transformer pilot wire relay which opened a switchyard breaker.

Standby Diesel Generator (SDG) No. 11 started upon initiation of the Train A LOOP and the load was sequenced as expected. Control Room personnel commenced emergency restoration of power to equipment per procedure. During this process, a second LOOP occurred at 1328 hours when a control room operator opened 13.8 KV Standby Bus 1G feeder breaker to Essential Safety Feature (ESF) transformer E1B2. SDG No. 12 responded as expected, and load was sequenced through the 4.16 ESF bus.

At 1355 hours, the operator observed that all loads had not been properly sequenced following startup of SDG No. 12. Further investigation revealed the Class 1E 480V E1B2 Load Center feeder breaker had not remained closed, thus disabling the associated loads (RHR pump 1B, Motor Control Centers E1B2 and E1B4, and Reactor Containment Fan Cooler supply fan 21B). Power was restored to Load Center E1B2 at 1401 hours by closing the E1B1 to E1B2 tie breaker. This restored power to the associated equipment.

Offsite power was restored to Train A and Train B by 1412 hours via normal line-up configuration.

This event was initiated while maintenance personnel were performing routine preventive maintenance on the main transformer pilot wire protection system in accordance with procedures. (The pilot wire relay monitors and protects the high voltage line between the main transformer secondary and 345 KV switchgear Y510 circuit breaker.) One pilot wire relay is located in the control room and the other is in the switchyard. Per procedure, the switchyard relay was disabled and removed for testing and calibration. However, the procedure did not require disabling of the other pilot wire relay circuit, so that when the switchyard relay was removed from the circuit, the control room circuit opened the switchyard breaker.

CAUSE OF EVENT:

The LOOP on Train A resulted from a less than adequate procedure. Procedure OPMP05-ZE-0007, "Calibration of Westinghouse HCB-1 Relays," did not direct that both relays are to be isolated prior to removing one relay for test and calibration.

LER\91098001.U1

CAUSE OF EVENT: (cont'd)

The LOOP on Train B resulted from a less than adequate procedure. Procedure 1POP04-AE-0006, "Loss of Offsite Power (LOOP) Recovery," assumes that a total loss of offsite power has occurred, rather than a partial LOOP. Actions to be taken when following this procedure are not necessarily appropriate for a partial LOOP. Specifically, the operator should not have manually opened the breaker while the train still had power.

The Load Center feeder breaker failed to remain closed due to failure to lubricate the breaker according to procedures. The individual who failed to properly lubricate the breaker had decided upon inspection that relubrication was not needed. Furthermore, the lubricant previously used was found to be an improper grade.

Failure of the operator to note until 1355 hours that all loads had not been properly sequenced was due to lack of attention to plant electrical power conditions.

ANALYSIS OF EVENTS:

Unplanned actuation of a Standby Diesel Generator is reportable pursuant to 10CFR50.73(a)(2)(iv). SDG Nos. 11 And 12 started and loaded as expected upon loss of offsite power.

Failure to successfully sequence the load on SDG No. 12 because of the open Load Center feeder breaker is reportable under 10CFR50.73(a)(2)(v). Residual Heat Removal (RHR) pump 1B could not operate due to the open feeder breaker. RHR pump 1A had not yet been loaded following the Train A LOOP. RHR pump 1C started when Train C was manually activated, but no RHR was active for approximately two minutes. Reportable conditions are those which could have prevented fulfillment of the safety function of systems used to remove residual heat. However, this event occurred near the end of a refueling outage, and need for RHR was minimal.

CORRECTIVE ACTIONS:

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

1. Procedure OPMP05-ZE-0007 has been revised by addition of an instruction to isolate the protective circuitry prior to testing to prevent an inadvertent bus trip. No other procedures are affected by this concern.

2. A procedure governing line-up of 13.8 KV power sources will be developed which will provide more explicit instructions on recovering from a partial LOOP as well as a full LOOP. Completion is expected by July 31, 1991.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
South Texas, Unit 1	0 5 0 0 0 4 9 8	9 1	— 0 0 8	— 0 0	0 4 OF 0 4

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

CORRECTIVE ACTIONS: (cont'd)

3. Work requests have been issued to sample Westinghouse safety-related and nonsafety-related spare load center breakers to determine the extent of improper lubrication. Completion is expected by June 1, 1991.

4. In addition to the misleading procedure 1POP04-AE-0006, the operator neglected to confirm that Train B had actually incurred a LOOP. Consequently, opening the feeder breaker resulted in a Train B LOOP. The operator involved in the Train B LOOP has been counselled as to the importance of paying attention to plant electrical power conditions.

5. The individual who failed to properly lubricate the breaker has been counselled. The counselling emphasized procedural compliance and stressed attention to detail.

ADDITIONAL INFORMATION:

As reported in Unit 1 LER 89-006, a partial loss of offsite power occurred on Engineered Safety Feature Train A due to inadvertent actuation of a generator breaker test switch by an unlicensed plant operator. Offsite power to Trains B and C was not affected.