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) Degraded Undervoltage Coincident with a Safety Injection Circuitry Surveillance Deficiency Due to a Deficient Procedure

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
1 2	1 2	8 7	8 7	—	0 2 6	—	0 0	0 1	1 1	8 8		0 5 0 0 0

OPERATING MODE (9)	4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)							
POWER LEVEL (10)	0 0 0		20.402(b)		20.405(c)		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)	X	50.73(a)(2)(vii)		OTHER (Specify in Abstract below and in Text, NRC Form 366A)
			20.405(a)(1)(iii)	X	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
	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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
D											

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 December 12, 1987, at approximately 1857 hours with Unit 1 in Mode 4, prior to initial criticality, during review of work instructions for the replacement of a time delay relay in the degraded undervoltage circuit, it was determined that the Trip Actuation Device Operational Test (TADOT) on degraded undervoltage coincident with safety injection had not been tested as required. All three Engineered Safety Features (ESF) busses were declared inoperable. The plant entered Technical Specification 3.0.3 and a plant cooldown to Mode 5 was initiated. The cause of the event was determined to be a deficient surveillance procedure resulting from a personnel error in interpreting the requirements of the monthly TADOT. To prevent recurrence, a new procedure was written and satisfactorily performed on each ESF bus. Testing was completed at approximately 1300 on December 13, 1987 prior to completing the cooldown to Mode 5. Additionally, comprehensive reviews of Instrumentation & Controls and Electrical surveillance procedures were conducted to ensure other testing requirements were covered in surveillance procedures. There were no adverse safety or radiological consequences as a result of this event.

NL.LER87026

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

DESCRIPTION OF OCCURRENCE:

On December 12, 1987, at approximately 1857 hours with Unit 1 in Mode 4, prior to initial criticality, a review was being conducted of work instructions in a Maintenance Work Request (MWR) for the replacement of a time delay relay (a corrective action from LER 87-025) in the degraded undervoltage circuit for 4KV bus E1A. During this review it was determined that the Trip Actuation Device Operational Test (TADOT) performed during the monthly surveillance of the Engineered Safety Feature (ESF) 4KV busses E1A, E1B, and E1C had not included verification of the degraded undervoltage coincident with safety injection circuit. The TADOT requires that these devices be tested by verifying an actuation signal to the ESF Sequencer. The contacts from the degraded undervoltage relay in series with the contacts of the slave relays from the Solid State Protection System (SSPS) Actuation Cabinet were not being closed simultaneously to actuate one of the two channels required to actuate and start the ESF Sequencer and the Standby Diesel Generator. This is required for satisfactory performance of this surveillance test.

The three ESF busses were declared inoperable. The Unit had entered Mode 4 on October 31, 1987 and the failure to adequately perform the TADOT for the entire degraded undervoltage coincident with safety injection circuitry prior to entering Mode 4 was a violation of Technical Specifications.

The plant entered Technical Specification 3.0.3 and a plant cooldown to Mode 5 was initiated. The NRC was notified of the violation of the Technical Specifications pursuant to the Operating License NPF-71, Paragraph 2.G at 1924 hours on December 12, 1987.

A new test procedure was written and approved immediately and the TADOT was satisfactorily completed at 1300 hours on December 13, 1987.

Technical Specification Table 4.3-2, item 8.b, for degraded undervoltage coincident with safety injection specifies that the TADOT be performed monthly but also specifies that the slave relay test (same line item) as "not applicable". The plant had established, based on informal NRC guidance, that the slave relays associated with the TADOT must also be tested monthly to satisfy the Technical Specification definitions for a TADOT. The Electrical Maintenance group writes procedures for and performs each TADOT at South Texas. Technical Specification Table 4.3-2 item 1.c for safety injection ESF instrumentation surveillance requirements specifies that the slave relays be tested quarterly. The Instrumentation & Controls (I&C) Maintenance group writes and performs slave relay surveillance tests. During development of the surveillance procedures Maintenance procedure writers and reviewers did not interpret that the monthly TADOT must include the slave relay contacts nor that the quarterly slave relay test must verify continuity through these contacts.

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

CAUSE OF OCCURRENCE:

The cause of the event was determined to be a deficient surveillance procedure which was caused by a personnel error by the Maintenance group in interpreting the requirements of the Technical Specifications during the development of the surveillance procedure. Additionally the lack of a rigorous independent review of the surveillance procedure during review and approval was a contributing factor. The level of detail and independence of the review that was performed was not sufficient to identify the procedural deficiency.

ANALYSIS OF EVENT:

There were no adverse safety or radiological consequences as a result of the event since the plant had not yet achieved initial criticality and no radioactivity had been produced. The event did not produce any additional risk to the public.

The event was reportable pursuant to 10CFR50.73(a)(2)(i)(B). Train A, B, and C of the degraded undervoltage coincident with safety injection circuitry was in an untested condition for approximately twelve days while the plant was in Mode 4 and, as such, the plant was in a configuration prohibited by Technical Specifications. The degraded undervoltage coincident with safety injection relay TADOT's for Train A, B, and C were satisfactorily retested the day following the discovery of the Technical Specification violation. Retesting was completed prior to completing the cooldown to Mode 5.

CORRECTIVE ACTION:

To prevent recurrence of the event, the following corrective actions were performed:

1. To correct and replace the TADOT procedure steps (the previous procedure included relay tests other than the TADOT) a new surveillance procedure, Degraded Undervoltage Coincident with Safety Injection Relay TADOT, was written and approved.

2. A station policy has been established for relay testing to provide more detailed definitions and guidance for use by plant personnel in implementation of the Technical Specification surveillance requirements and reviews.

3. Two independent reviews of other I&C and Electrical surveillance tests have been performed to reconfirm compliance with Technical Specifications.

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

ADDITIONAL INFORMATION:

As noted above the maintenance work which was being reviewed at the point of discovery of this event was a portion of implementation of the corrective actions of LER 87-025 regarding a Standby Diesel Generator Actuation.

Similar events, LER 87-009 regarding a deficient surveillance procedure for a radiation monitor and LER 87-019 regarding a deficient slave relay surveillance, have occurred and have been documented.

NL.LER87026

The Light company
Houston Lighting & Power

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

January 11, 1988
ST-HL-AE-2476
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 87-026 Regarding Degraded
Undervoltage Coincident with a Safety Injection
Circuitry Surveillance Deficiency Due to a Deficient Procedure

On December 12, 1987 Houston Lighting & Power (HL&P) notified the NRC of a reportable event regarding a degraded undervoltage coincident with a safety injection circuitry surveillance deficiency due to a deficient procedure. This event had no adverse safety or radiological consequences since the plant had not yet been critical and no radioactivity had been produced. The event did not result in additional risk to the public. In accordance with 10CFR50.73 HL&P submits the attached Licensee Event Report (LER 87-026).

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

G. E. Vaughn
Vice President
Nuclear Plant Operations

GEV/CAA/eeg

Attachment: Licensee Event Report 87-026 Regarding Degraded Undervoltage Coincident with a Safety Injection Circuitry Surveillance Deficiency Due to a Deficient Procedure

NL.LER87026

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cc:

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