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

March 23, 2000
NOC-AE-00000787
File No.: G26
10CFR50.73
STI: 31059293

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

South Texas Project
Unit 1
Docket No. STN 50-498
Licensee Event Report 00-001
Failed Engineered Safety Feature Instrument Channel not
Placed in the Tripped Position Within the Required Technical Specification Allowed Time

Pursuant to 10CFR50.73, South Texas Project submits the attached Unit 1 Licensee Event Report 00-001 regarding a failed Engineered Safety Feature instrument channel not placed in the tripped position within the required Technical Specification allowed time. This event did not have an adverse effect on the health and safety of the public.

Licensee commitments are listed in the Corrective Actions section of the attachment. If there are any questions on this submittal, please contact either Mr. S. M. Head at (361) 972-7136 or me at (361) 972-7800.

G. L. Parkey
Plant General Manager

KJT

Attachment: LER 00-001 (South Texas, Unit 1)

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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

NRC FORM 366 (6-1998) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
South Texas Unit 1	05000 498	1 of 3

TITLE (4)

Failed Engineered Safety Feature instrument channel not placed in the tripped position within the required Technical Specification allowed time

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
										05000
02	18	2000	2000	-- 0 0 1	-- 0	03	23	2000	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1
POWER LEVEL (10)	96%

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

	20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
	20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
	20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
	20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER
	20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Scott Head - Licensing Supervisor	(361) 972-7136

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	JC	74	W120	N					

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 15 single-spaced typewritten lines) (16)

On February 18, 2000, Unit 1 was in Mode 1 at 96% power conducting plant coast down operations in preparation for a refueling outage. At 2130 hours on February 18, 2000, a "PCC PROT SET DOOR OPEN/PWR SPLY FAIL" alarm was received in the Unit 1 control room. An inspection of the Protection Set III cabinets concluded that the source of the alarm was a power supply failure. At approximately 0530 hours on February 19, 2000, a walk down of the diagnosed power supply failure was conducted. The LED for solid state protection system process comparator card PB-0204A was observed to be extinguished. It was determined that the "PCC PROT SET DOOR OPEN/PWR SPLY FAIL" alarm, received the previous day, was caused by a failure of the alarm card in the Charging Header Pressure – Low channel. This failed alarm card resulted in the Charging Header Pressure – Low instrument being declared inoperable at 0600 hours on February 19, 2000. The failed channel was placed in the tripped condition at 0615 hours and had been inoperable for a period of 8 hours and 45 minutes before the one hour Technical Specification required action was taken. The cause of this event was the use of ineffective problem solving to resolve the alarmed condition and the lack of control board indications or the annunciator response procedure identifying this failure as a one-hour Technical Specification action. Corrective actions include replacing and calibrating the failed card, revising the annunciator procedure and reinforcing station expectations for effective problem solving.

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
South Texas, Unit 1	05000 498	00	-- 001 --	00	2 of 3

TEXT *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

DESCRIPTION OF EVENT

On February 18, 2000, Unit 1 was in Mode 1 at 96% power conducting plant coast down operations in preparation for a refueling outage. At 2130 hours on February 18, 2000, a "PCC PROT SET DOOR OPEN/PWR SPLY FAIL" alarm was received in the Unit 1 control room, and the Integrated Computer System (ICS) point SPQR3726, "PCC 3 PWR SPLY/CARD", toggled from "normal" to "failure". An inspection checked the power supply voltages and currents, and noted that the power-on lamp on the standby power supply was extinguished. Based on the lack of current on the power supply with the power-on lamp extinguished, it was concluded that the source of the alarm was a power supply failure. Individual cards for the protection set were not checked. The decision was made to correct the diagnosed power supply failure during the following dayshift.

At approximately 0530 hours on February 19, 2000, a walk down of the diagnosed power supply failure was conducted. The primary power supply was observed to be reading approximately 27 VDC and current loaded, and the backup power supply was observed to be reading approximately 24 VDC with no current load. Verification of individual card power-on LED's was then performed. During this verification, the LED for solid state protection system process comparator card PB-0204A was observed to be extinguished. It was determined that the "PCC PROT SET DOOR OPEN/PWR SPLY FAIL" alarm received in the control room at 2130 hours the previous day was caused by a failure of the alarm card in the Charging Header Pressure – Low channel and was not a failed cabinet power supply. This failed alarm card resulted in the Charging Header Pressure – Low instrument being inoperable. Technical Specification 3.3.2, Table 3.3-3 Functional Unit 3.d.2 requires an inoperable Charging Header Pressure channel be placed in the tripped condition within one hour. The Charging Header Pressure instrument channel was declared inoperable at 0600 hours on February 19, 2000. Action 16 of Technical Specification 3.3.2 Functional Unit 3.d.2 was entered and the failed channel was placed in the tripped condition at 0615 hours. The failed instrument channel had been inoperable for a period of 8 hours and 45 minutes before the one-hour Technical Specification required action was taken.

The control room staff failed to systematically work through all of the potential causes as listed in the annunciator response procedure. Once the crew had some level of confidence the potential cause of the alarm was a power supply failure, efforts to fully understand the alarm condition were not pursued and were inappropriately placed on hold until the next morning.

CAUSE OF EVENT

The cause of this event was:

- Ineffective problem solving was used to determine the scope, priority, and actions for resolving the alarmed condition.
- Neither control board indications or the annunciator response procedure identified this failure as a one hour Technical Specification action statement thus limiting the awareness and pursuit of the condition by the control room staff.

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
South Texas, Unit 1	05000 498	00	-- 001 --	00	3 of 3

TEXT *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

ANALYSIS OF EVENT

A failure to meet Technical Specification requirements is reportable to the Nuclear Regulatory Commission pursuant to 10CFR50.73(a)(2)(i)(B). The failed channel is Engineered Safety Features actuation instrumentation. The Charging Header Pressure – Low channel in coincidence with a Phase "A" containment isolation signal closes motor operated isolation valves to provide containment isolation of reactor coolant pump seal water injection. The failed solid state protection system comparator card PB-0204A is configured for an alarm low, normally energized output. When charging header pressure decreases to 560 psig the output of the card goes to Logic 0 state. The card failure de-energized the output and resulted in the same Logic 0 state. On a Phase "A" containment isolation the seal injection motor operated valves would have closed regardless of charging header pressure.

There were no adverse safety or radiological consequences from this event.

CORRECTIVE ACTIONS

1. The failed 7300 comparator card PB-0204A was replaced and calibrated.

2. The annunciator procedure was revised to caution that a card failure could result in an inoperable Engineered Safety Features or reactor trip instrument.

3. The annunciator procedure will be amended by April 27, 2000 with a solid state protection system card/loop/surveillance cross-reference list of items to check for this alarm condition.

4. Station expectations for effective problem solving will be reinforced by June 30, 2000 with Operations Supervision, to include procedures, processes, and other resources available for troubleshooting emergent issues.

ADDITIONAL INFORMATION

An evaluation will be conducted to determine if a design change should be implemented to create a bistable window for the charging header pressure instrument.

There have been no other previous events reported by the South Texas Project to the Nuclear Regulatory Commission within the last three years similar to this occurrence.