



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

May 9, 2000
NOC-AE-00000834
File No.: G26
10CFR50.73
STI: 31091636

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

South Texas Project
Unit 2
Docket No. STN 50-499
Licensee Event Report 00-002
Reactor Overpower Event

Pursuant to 10CFR50.73, South Texas Project submits the attached Unit 2 Licensee Event Report 00-002 regarding a reactor overpower event. License Condition 2.G requires 24-hour notification and a follow-up written report within 30 days for a violation of the requirements contained in Section 2.C of the license. This event did not have an adverse effect on the health and safety of the public.

Licensee commitments are listed in the Corrective Action 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.

A handwritten signature in cursive script, appearing to read "G. L. Parkey".

G. L. Parkey
Plant General Manager

kaw

Attachment: LER 00-002 (South Texas, Unit 2)

IE22

cc:

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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
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)		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	

FACILITY NAME (1) South Texas Unit 2	DOCKET NUMBER (2) 05000 499	PAGE (3) 1 of 3
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TITLE (4)

 Reactor Overpower Event

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
04	07	2000	2000	0002	00	05	09	2000	FACILITY NAME	DOCKET NUMBER
OPERATING MODE (9)		1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)						
POWER LEVEL (10)		100%		20.2201(b)		20.2203(a)(2)(v)		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)		<input checked="" type="checkbox"/> 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 Scott Head - Licensing Supervisor	TELEPHONE NUMBER (Include Area Code) (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

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
YES	x		NO					
(If yes, complete EXPECTED SUBMISSION DATE).								

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On Friday April 7, 2000 at 1014, with Unit 2 at 100% power, a Nuclear Mixing Amplifier card was removed from the 7300 Solid State Protection System instrument racks during performance of a preventive maintenance activity in order to calibrate the deaerator storage tank 2A level channel. With the Nuclear Mixing Amplifier card removed the main steam to deaerator valves began to modulate open, drawing additional steam from the steam generators into the deaerator. The increase in steam flow from the steam generators caused a decrease in Reactor Coolant System average temperature and an increase in reactor power to a peak of 103.7% by average Reactor Coolant System Delta-T indication. The duration of the excursion was approximately four minutes. Exceeding rated thermal power limits is reportable to the Nuclear Regulatory Commission in accordance with Operating License Condition 2.G for a violation of the requirements contained in Section 2.C of the license. The root cause for this event is that management expectations for pre-job preparation on tasks that are perceived as low risk are not well defined and have not been adequately reinforced to ensure consistent, successful task performance. Corrective actions include defining management expectations for pre-job preparation in station procedures and developing a plan for reinforcing the expectations by periodic measurement of job preparation work practices.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
South Texas Unit 2	05000 499	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 3
		2000	-- 002	-- 00	

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

DESCRIPTION OF EVENT

On Friday April 7, 2000 at 1014 hours, with Unit 2 at 100% power, a Nuclear Mixing Amplifier card was removed from the 7300 Solid State Protection System instrument racks during the performance of a preventive maintenance activity to calibrate the deaerator storage tank 2A level channel. With the Nuclear Mixing Amplifier card removed, the main steam to deaerator valves began to modulate open, drawing additional steam from the steam generators into the deaerator. The increase in steam flow from the steam generators caused a decrease in Reactor Coolant System average temperature and an increase in reactor power to a peak of 103.7% by average Reactor Coolant System Delta-T indication.

Prior to performing the preventive maintenance activity, pre-job briefings were held in which it was determined that the work to be performed on the deaerator storage tank 2A level channel would affect indications only. Removal of the Nuclear Mixing Amplifier card is a conditional step whose effects were not discussed.

The Plant Maintenance Instructions for the work activity did not identify in the preparation steps that any control loops were affected. Two other instrument loops are wired through the same Nuclear Mixing Amplifier card that was removed to make adjustments for the calibration. One of the instrument loops is the deaerator pressure control loop that controls the main steam to deaerator valve, and the other instrument loop is the level control for the deaerator storage tank 2B. The work instructions did not identify that removing the Nuclear Mixing Amplifier card would affect the deaerator pressure and deaerator level control loops.

During work performance, based on the as-found calibration data, maintenance technicians determined that the Nuclear Mixing Amplifier card required adjustment. The Nuclear Mixing Amplifier card was briefly removed and reinstalled on two occasions in order to adjust the Nuclear Mixing Amplifier card. As a result of removing the Nuclear Mixing Amplifier card, the deaerator pressure channel went to zero and main steam to deaerator valve modulated open causing Reactor Coolant System average temperature to decrease and reactor power to increase.

The control room staff noticed the control rods stepping out in automatic control in response to the decreasing Reactor Coolant System average temperature and observed reactor power exceeding 100%. The control room staff monitored other pertinent indications and closed the main steam to deaerator valves, reduced main turbine output and inserted control rods to reduce reactor power to less than 100%. Due to the loss of control of deaerator storage tank 2B level control loop, the level increased slightly before returning to normal, but did not adversely affect operations due to the short duration. The control room staff also noted that Reactor Coolant System pressure was below the minimum Technical Specification pressure for departure from nucleate boiling parameters and entered the appropriate Limiting Condition for Operations action. Operators inserted control rods, thus inserting negative reactivity, and reduced turbine load to stabilize reactor power within license limits. The duration of the excursion was approximately four minutes.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
South Texas Unit 2	05000 499	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 of 3
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

CAUSE OF EVENT

The root cause for this event is that management expectations for pre-job preparation on tasks that are perceived as low risk are not well defined and have not been adequately reinforced to ensure consistent, successful task performance. This resulted in a condition where the workers were not adequately prepared to perform a task that adversely affected unit operation.

ANALYSIS OF EVENT

This event is reportable based on the power excursion of 103.7%, as specified in License Condition 2.G which requires a 24-hour notification and a follow-up written report within 30 days for a violation of the requirements contained in Section 2.C of the operating license. The event was reported to the NRC at 1807 Eastern Daylight Time on April 7, 2000.

This event did not involve any personnel injury, radiation exposure, offsite dose release, or damage to equipment important to safety.

This event is significant because of the unexpected increase in reactor power above the South Texas Project's operating license basis. The control room operators and the I&C technicians were not aware of the potential effects of removing the Nuclear Mixing Amplifier card; therefore, the consequences were not anticipated. There was potential for a more significant event because removing Nuclear Mixing Amplifier cards can affect multiple loops and initiate plant transients.

CORRECTIVE ACTIONS

The following corrective actions were taken or will be taken as a result of this event:

1. Management expectations for pre-job preparation will be defined in station procedures by May 15, 2000. As a compensatory measure these expectations have been provided via shop briefings.
2. Management expectations for pre-job preparation will be reinforced by periodic measurement of job preparation work practices. A plan for these periodic assessments will be developed by June 15, 2000.

ADDITIONAL INFORMATION

This event is the second overpower event with an unexpected secondary plant transient involving the main steam to deaerator valves. On September 25, 1999, Unit 1 experienced an overpower transient due to the main steam to deaerator valves modulating open during installation of a temporary modification and reactor power reached 101.7%.

There were two events identified involving a material deficiency where the main steam to deaerator valve drifted open resulting in power increases. One event, on August 12, 1998, resulted in a power excursion of 0.25% (reactor power reached 100.25%) and the other, on May 13, 1998, caused a slow power increase that was compensated for by the control room operators before exceeding 100%.