Nuclear Operating Company

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

May 17, 2004
NOC-AE-04001728
10CFR50.73

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498 and STN 50-499
Licensee Event Report 1-04-003
An Unanalyzed Condition That Significantly Degraded Plant Safety
Due to a Valve Out of Position

Pursuant to 10CFR50.73(a)(2)(ii)(B) and 10CFR50.73(a)(2)(v)(C), the South Texas Project submits the attached Licensee Event Report 1-04-003 regarding an unanalyzed condition in Unit 1 that significantly degraded plant safety due to a valve out of position.

This event did not have an adverse effect on the health and safety of the public. There are no commitments contained in this event report. Resulting corrective actions will be handled in accordance with the STP Corrective Action Program.

If there are any questions on this submittal, please contact S. M. Head at (361) 972-7136 or me at (361) 972-7849.

E. D. Halpin
Plant General Manager

kjt/

Attachment: LER 1-04-003 (South Texas, Unit 1)

IE22

STI: 31745747

cc: (paper copy)

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NRC FORM 366 (7-2001) | U.S. NUCLEAR REGULATORY COMMISSION | APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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 collection.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
South Texas Unit 1	05000 498	1 OF 4

4. TITLE

An unanalyzed condition that significantly degraded plant safety due to a valve out of position

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER 05000
03	26	04	04	003	00	05	17	04	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE	1
10. POWER LEVEL	100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

	20.2201(b)		20.2203(a)(3)(ii)	x	50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)
	20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)
	20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)
	20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)
	20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER
	20.2203(a)(2)(iii)		50.46(a)(3)(ii)	x	50.73(a)(2)(v)(C)		Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)		
	20.2203(a)(2)(v)		50.73(a)(2)(i)(B)		50.73(a)(2)(vii)		
	20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)		
	20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)		

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
Ken Taplett	(361) 972-8416

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

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

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

The South Texas Project determined that the Train B high head safety injection pump flushing line isolation valve was partially open. A partially opened flushing line isolation valve provides a containment bypass leak path during a design-basis loss of coolant accident (LOCA) after the safety injection system switches to re-circulation. This resulted in a condition where the radiological control room dose limits of General Design Criterion (GDC) 19, Appendix A of 10CFR50 and the offsite dose limits of 10CFR100 would have been exceeded in the event of a design-basis accident. The cause of the flushing line isolation valve being out of position is indeterminate. The most likely cause is someone using the valve handle as an aid in exiting the ladder located next to it. The valve handles from the flushing line isolation valve found open and the two valves adjacent to it will be removed. The corresponding valve handles in Unit 2 will also be removed. These actions are expected to prevent recurrence of accidental misalignment of any of these valves.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	OF
South Texas Unit 1	05000498	2004	003	00	2 4

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

I. DESCRIPTION OF REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

This event is reportable pursuant to 10CFR50.73(a)(2)(ii)(B). The South Texas Project determined that the Train B high head safety injection pump flushing line isolation valve was partially open. This resulted in a condition where the radiological control room dose limits of General Design Criterion (GDC) 19, Appendix A of 10CFR50 and the offsite dose limits of 10CFR100 would have been exceeded in the event of a design-basis accident.

This event is also reportable pursuant to 10CFR50.73(a)(2)(v)(C). The partially open isolation valve would have prevented the control room emergency filtration and cleanup system from fulfilling its safety function to control the release of radioactive material within the radiological control room dose limits in accordance with General Design Criterion (GDC) 19.

B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

South Texas Project Unit 1 was in Mode 1 operating at 100% power.

C. STATUS OF STRUCTURES, SYSTEMS, OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

There were no inoperable structures, systems or components that contributed to the event.

D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES

On March 26, 2004, Train B high head safety injection pump was started for surveillance testing. During the surveillance, the pump room sump alarm actuated. Upon investigation, the sump was discovered to be full. After the sump level was pumped down, the Train B high head safety injection pump flushing line was found at about the same temperature as the rest of the line with flow to the sump. The flushing line isolation valve was found approximately 1/8 turn open and was subsequently closed. A short time later, with the Train B high head safety injection pump still running, the flow into the sump from the flushing line had completely stopped.

A partially opened Train B high head safety injection pump flushing line isolation valve provides a containment bypass leak path during a design-basis loss of coolant accident (LOCA) after the safety injection system switches to re-circulation. Engineering analysis had previously concluded that any essential safety feature system leakage in excess of 436 gallons per day, based on current local leak rate tests (LLRT) and integrated leak rate tests (ILRT) containment boundary leakage, during a design basis LOCA would result in unacceptable onsite and offsite dose consequences. When the flushing line isolation valve was partially open, the valve was leaking in excess of 436 gallons per day. This condition was determined to be reportable at 2230 on March 26, 2004 and an eight-hour notification of this unanalyzed condition that significantly degraded plant safety was made to the Nuclear Regulatory Commission Operations Center at 0108 hours on March 27, 2004.

E. THE METHOD OF DISCOVERY OF EACH COMPONENT OR SYSTEM FAILURE, OR PROCEDURAL OR PERSONNEL ERROR

The Train B high head safety injection pump flushing line isolation valve was discovered partially open while responding to the pump room high level sump alarm.

II. COMPONENT OR SYSTEM FAILURES

A. FAILURE MODE, MECHANISM, AND EFFECTS OF EACH FAILED COMPONENT

None. The flushing line isolation valve was shut and leakage stopped.

B. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

None

C. SYSTEMS OR SECONDARY FUNCTIONS THAT WERE AFFECTED BY FAILURE OF COMPONENTS WITH MULTIPLE FUNCTIONS

None

D. FAILED COMPONENT INFORMATION

None

III. ANALYSIS OF THE EVENT

A. SAFETY SYSTEM RESPONSES THAT OCCURRED

None

B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY

None

C. SAFETY CONSEQUENCES AND IMPLICATIONS

This event is significant because of the potential to have overexposed the plant operating staff to radioactive contamination if a design basis LOCA occurred while this valve was out of position. Local radiation rates in the safety injection pump rooms would have been significantly higher due to the untreated reactor coolant being pumped to the open floor sump. This would have limited access to the area by personnel following such an event. If this valve were to be open during a postulated LOCA, the resulting release from the safety injection system would cause the GDC 19 control room operator dose limits and the 10CFR100 offsite dose limits to

be exceeded.

The partially open isolation valve would have prevented the control room emergency filtration and cleanup system from fulfilling its safety function to control the release of radioactive material within the radiological control room dose limits in accordance with General Design Criterion (GDC) 19. This event represents a safety system functional failure.

The estimated leakage from the safety injection system would not have significantly degraded the B train high head safety injection Probabilistic Risk Analysis (PRA) function to provide injection flow to the core given a LOCA event. Also, the water inventory loss for a postulated LOCA event would not have significantly degraded the safety injection re-circulation core cooling PRA function, assuming a 24-hour mission time. The reported safety injection leakage to the fuel handling building sump would provide a containment bypass radioactive release path during the re-circulation phase of a LOCA event, but the amount would not be categorized as a Large Early Release. Based on the aforementioned statements, the impact to core damage frequency (CDF) and large early release frequency (LERF) is considered very small.

There was no radiological release from this event.

IV. CAUSE OF THE EVENT

The cause of the Train B high head safety injection pump flushing line isolation valve being out of position is indeterminate.

The most likely cause of this valve being out of position is someone using the valve handle as an aid in exiting the ladder located next to it. This ladder goes down approximately 7 feet to the sump level below. The ladder is seldom used.

V. CORRECTIVE ACTIONS

A. The valve handles from this flushing line isolation valve and the two valves adjacent to it will be removed in both units. This action is expected to prevent recurrence of accidental misalignment of any of these valves.

B. Site-wide communication and lessons learned will be implemented for personnel to exercise caution around plant equipment to avoid accidental manipulations.

VI. PREVIOUS SIMILAR EVENTS

Within the last three years, there have been no other events at the South Texas Project of valves out of position that would have resulted in exceeding offsite or onsite radiological dose limits during a design-basis accident.