NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), 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.

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 5

TITLE (4) Technical Specification Violation due to Control Room Envelope HVAC not Operated in Correct Mode

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	23	93	93	014	00	05	21	93		05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	5
POWER LEVEL (10)	0

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

	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)		50.73(a)(2)(vii)		OTHER
	20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)
	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 (Include Area Code)
Jairo Pinzon - Senior Engineer	(512) 972 - 8027

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

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 April 23, 1993, Unit 1 was in Mode 5 at 0% power. Plant personnel completed a reportability review which determined that on two separate occasions in May, 1990, the Control Room Envelope (CRE) Heating, Ventilating and Air Conditioning (HVAC) system was not operated in the correct mode. This constituted a violation of Technical Specifications 3.7.7 and 3.3.3.7. Since this event occurred approximately three years ago the root cause of this event cannot be determined, but is speculated to be inadequate tracking and implementation of the Technical Specification Limiting Conditions for Operation (LCOs) and Actions regarding CRE HVAC, Essential Chill Water System and the Chemical Detection System while in Mode 5. The ability to track and implement Technical Specification LCOs and Actions as well as reduce administrative burden of the on-shift Senior Reactor Operators has been significantly improved since May, 1990.

DESCRIPTION OF EVENT:

On April 23, 1993, Unit 1 was in Mode 5 at 0% power. Plant personnel completed a reportability review which determined that on two separate occasions in May, 1990, the Control Room Envelope (CRE) Heating, Ventilating and Air Conditioning (HVAC) system was not operated in the correct mode contrary to Technical Specifications 3.7.7 and 3.3.3.7.

On May 11, 1990, at 2020 hours, one of the two Chemical Detection Systems (XE-9326) was declared inoperable. This monitor remained in that condition until May 23, 1990 at 2030 hours (a total of 12 days, 10 minutes). If not restored to OPERABLE within seven days, and if no other conflicting LCO actions were entered, the CRE HVAC would have to be placed in the recirculation mode within the following six hours (by May 19, 1990 at 0220 hours) per Technical Specification 3.3.3.7.a.

On May 12, 1990, at 0547 hours, the Train "C" Essential Chillers were declared inoperable for various maintenance work activities and remained in that condition until May 22, 1990, at 2204 hours (a total of 10 days, 16 hours, 17 minutes). If not restored to OPERABLE within seven days, and if no conflicting LCO actions were entered, the remaining OPERABLE CRE HVAC trains would be required to be placed in the recirculation and makeup air filtration mode (by May 19, 1990, at 0547 hours) per Technical Specification 3.7.7.a. However, given the applicability of Technical Specification 3.3.3.7 while in Modes 5 and 6 with a Chemical Detection system inoperable, the correct action would be to place the CRE HVAC in the filtered recirculation mode only after the seven day period.

On May 14, 1990, at 1304 hours, the Train C CRE HVAC actuation circuitry was declared inoperable for maintenance on an upstream power supply fuse block and remained in that condition until May 24, 1990 at 1325 hours (a total of 10 days 21 minutes). Since the Train "C" CRE HVAC was already inoperable (since May 12, 1990, at 0547 hours), and one of two Chemical Detection systems was already inoperable (since May 11, 1990, at 2020 hours), the CRE HVAC system should have been placed in the filtered recirculation mode on May 19, 1990, at 0547 hours.

On May 22, 1990, at 2204 hours, the Train "C" Essential Chillers were declared OPERABLE after completion of all work and post-maintenance test (PMT) activities. At 2224 hours, the CRE HVAC was shifted from the filtered recirculation lineup to the recirculation lineup. This action violated the requirements of Technical Specification Actions 3.7.7.b (Modes 5 and 6) and 3.3.3.7.b which remained in effect due to the Train "C" CRE HVAC system and one of the two Chemical Detection systems (XE-9326) still being inoperable. The total duration of this Technical Specification violation was 22 hours, 6 minutes.

DESCRIPTION OF EVENT: (Cont'd)

On May 23, 1990, at 2030 hours, XE-9326 was declared OPERABLE after completion of all work and PMT activities. Since the Train "C" CRE HVAC system was still inoperable, and had been for greater than seven days, Technical Specification Action 3.7.7.a (Modes 5 and 6) applied. However, the CRE HVAC system was not placed in the makeup and filtration mode as required. Technical Specification 3.7.7.a was violated from May 23, 1990, at 2030 hours, to May 24, 1990 at 1325 hours when the Train "C" CRE HVAC system was declared OPERABLE (a total duration of 16 hours, 55 minutes).

CAUSE OF EVENT:

It is noted that this event comprised two Technical Specification violations (3.3.3.7.b and 3.7.7.a). However, since this event occurred three years ago, the real root cause of this event cannot be determined. The cause of this event is speculated to be inadequate tracking and implementation of the LCOs and Actions regarding CRE HVAC, Essential Chill Water system and the Chemical Detection system while in Mode 5 and 6.

Contributing causes to this event are speculated to be as follows:

There was an increased administrative burden on the Shift and Unit Supervisor during an outage. This hindered the on-shift Senior Reactor Operators (SROs) from providing effective oversight as to operation of the unit. This burden included the screening and approving of:

- All work documents (work start/stop, PMT start/stop, package closure),
- all Equipment Clearance Orders (ECO) (placing, releasing, modifying, etc.). At this time, the ECOs were hand written and required substantial review and verification, and
- all Operability Tracking Logs (OTLs). At this time, the OTLs were hand written. This required time for the SRO to perform a review of the Technical Specifications and handwrite an OTL.

The Technical Specification Action statements for Technical Specification 3.7.7. (Control Room Makeup and Cleanup Filtration System) and/or 3.3.2 (Table 3.3-3, Item 10) conflict with Technical Specification 3.3.3.7 (Chemical Detection Systems) while in Modes 5 and 6. Due to the complexity of an extensive outage where the three systems stated above are being worked concurrently, tracking the conflicting Technical Specification Actions contributes to the SRO's administrative work load.

ANALYSIS OF EVENT:

Technical Specification violations are reportable pursuant to 10CFR50.73(a)(2)(i)(B). The CRE HVAC system operating in the recirculation mode as described in the Updated Final Safety Analysis Report (UFSAR) section 9.4 does not allow outside air to be admitted into the control room envelope. There were no fires or toxic gas conditions during the times when the CRE HVAC System should have been operating in the recirculation mode and then later in the filtered recirculation mode. Therefore, this event did not pose a safety concern for the control room operating personnel. There were no adverse radiological or safety consequences as a result of this event.

CORRECTIVE ACTIONS:

The ability to track and implement Technical Specification LCOs and Actions as well as reduce administrative burden of the on-shift SROs has been significantly improved through the incorporation of the following:

- The OTL is now comprised of pre-printed pages which apply to the various equipment and conditions requiring entry into Technical Specification Action statements. These pre-printed pages have been validated by the Plant Operations Department and therefore, minimize the research required by the on-shift SRO each time a Technical Specification Action is entered. Additionally, the time required to prepare an OTL is drastically reduced since the SRO does not have to generate (write by hand) an OTL. There are still conditions where the SRO must generate a customized OTL, but this occurs infrequently. Prior to use, these pre-printed OTL pages are verified and signed by the on-shift SRO.

- The ECO program is now accomplished by the use of a computer program. Pre-determined ECOs can be recalled and re-printed thereby reducing research time for similar work activities. Additionally, the ECO tags are computer generated saving time and eliminating transposition errors.

- During outages, STP now utilizes an additional SRO in the control room to assist the Shift and Unit Supervisor with the administrative work responsibilities (i.e., ECOs, work starts, etc.). Additionally, dedicated personnel are assigned to implement the ECO program (generate, release, modify, etc.) and perform completed work package review and PMTs.

CORRECTIVE ACTIONS: (Cont'd)

To address the conflicting Technical Specifications, HL&P will perform a feasibility study to eliminate Technical Specifications that are determined to be conflicting. This feasibility study will be completed by November 18, 1993.

Since May, 1990, STP has been through five refueling outages without an OTL tracking problem that resulted in a reportable condition. Recently, two events have occurred during the current unit outages, that were the result of OTL tracking deficiencies. (See Additional Information for description.) Corrective actions that have been taken or will be taken as a result of these events are as follows:

- Using a manually updated index for the OTL to be maintained within the controls area.
- Providing training to licensed operators to reinforce the different modes of operation for the CRE HVAC system including the Technical Specification requirements for each mode.
- Placing temporary labels on the main control board to remind personnel of important Technical Specification equipment status.
- Placing an information board in the control room highlighting key Technical Specification action times and dates (trial basis).
- Further enhancing the OTL system by developing additional actions to improve the OTL process.

ADDITIONAL INFORMATION:

Although this event occurred three years ago, there have been recent similar events involving OTL tracking deficiencies. These LERs are as follows:

- Unit 2 LER 93-007 involving failure to place the CRE HVAC system into a required mode was previously submitted to the NRC. The cause of the event in Unit 2 LER 93-007 was the use of an inaccurate computer program for the control of safety related equipment without the formality of procedural reviews and approval.
- Unit 1 LER 93-013 involving a Technical Specification violation due to using a functional but inoperable centrifugal charging pump to satisfy the boration flow path while in Mode 5. The cause of this event was the use of a less than effective system for tracking inoperable Technical Specification equipment and actions during an outage.