



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

December 21, 2005
NOC-AE-05001957
10CFR50.73

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

South Texas Project
Unit 2
Docket No. STN 50-499
Licensee Event Report 2005-05,
125 VDC Switchboard De-energized Without Placing
FHB HVAC in Emergency Recirculation Mode

Pursuant to 10 CFR 50.73(a)(2)(i)(B), STP Nuclear Operating Company submits the attached Unit 2 Licensee Event Report 2005-05 regarding a Technical Specification (TS) violation which occurred as a result of de-energizing Class 1E 125 VDC Switchboard E2C11 without placing the Fuel Handling Building (FHB) Heating, Ventilation, and Air Conditioning (HVAC) system in Emergency Recirculation Mode as required by TS 3.3.2 Action 30.

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 implemented in accordance with the Corrective Action Program.

If there are any questions regarding this submittal, please contact S. M. Head at (361) 972-7136 or me at (361) 972-7800.

A handwritten signature in cursive script, appearing to read "Charles L. Parkey", followed by a horizontal line.

G. L. Parkey
Vice President, Generation
and Plant General Manager

jrm/

Attachment: LER 2005-05

JE22

STI: 31969278

cc:

(paper copy)

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NRC FORM 366 (6-2004)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB: NO. 3150-0104		EXPIRES: 06/30/2007		
<h2 style="margin: 0;">LICENSEE EVENT REPORT (LER)</h2> <p style="margin: 5px 0;">(See reverse for required number of digits/characters for each block)</p>								
1. FACILITY NAME South Texas Unit 2				2. DOCKET NUMBER 05000499		3. PAGE 1 OF 5		
4. TITLE 125 VDC Switchboard De-energized Without Placing FHB HVAC in Emergency Recirculation Mode								
5. EVENT DATE			6. LER NUMBER			7. REPORT DATE		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR
10	19	2005	2005	- 005 -	00	12	21	2005
						8. OTHER FACILITIES INVOLVED		
						FACILITY NAME		DOCKET NUMBER
								05000
						FACILITY NAME		DOCKET NUMBER
								05000
9. OPERATING MODE		11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)						
6		<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(vii)						
		<input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(A)						
000		<input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(viii)(B)						
		<input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(ix)(A)						
		<input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(x)						
		<input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 73.71(a)(4)						
		<input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 73.71(a)(5)						
		<input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> OTHER						
		<input type="checkbox"/> 20.2203(a)(2)(vi) <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B) <input type="checkbox"/> 50.73(a)(2)(v)(D)						
		Specify in Abstract below or in NRC Form 366A						
12. LICENSEE CONTACT FOR THIS LER								
FACILITY NAME James Morris						TELEPHONE NUMBER (Include Area Code) (361) 972-8652		
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT								
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	
14. SUPPLEMENTAL REPORT EXPECTED					15. EXPECTED SUBMISSION DATE			
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO					<div style="display: flex; justify-content: space-between;"> <div>MONTH</div> <div>DAY</div> <div>YEAR</div> </div>			
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)								
<p>On October 19, 2005, with Unit 2 shut down for refueling, during movement of fuel assemblies in the Fuel Handling Building (FHB), Class 1E 125 VDC Switchboard E2C11 was de-energized as part of scheduled bus maintenance without placing the FHB Heating, Ventilation, and Air Conditioning (HVAC) system in the Emergency Recirculation mode as required by Technical Specification 3.3.2 Action 30. The Train C FHB HVAC actuation relays are located in Relay Rack (RR) 145C and powered from 125V DC Panel 039C; which is in turn powered from Switchboard E2C11. These relays require DC power to automatically place the FHB HVAC in the Emergency mode and would not have actuated with Switchboard E2C11 de-energized. This condition is reportable in accordance with 10 CFR 50.73(a)(2)(i)(b) as a event or condition prohibited by Technical Specifications.</p> <p>The root cause of this event is the over-reliance on highly qualified and experienced individuals to plan and schedule Electrical Bus Outages and the failure to develop and implement procedures to provide guidance for these evolutions.</p> <p>This event did not adversely affect the safety of the public or station personnel.</p>								

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South Texas Unit 2	05000499	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2	OF 5
		2005	005	00		

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 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

Unit 2 was shutdown, with core reload in progress at the time of the event.

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

As discussed below, 125 VDC Switchboard E2C11 was de-energized as part of a planned outage, which caused the Fuel Handling Building (FHB) Heating, Ventilation, and Air Conditioning (HVAC) system actuation relays to be inoperable. There were no additional structures, systems, or components that were inoperable at the start of the event that contributed to the event.

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

On October 17, 2005 at 0819 hours, Train C FHB HVAC was declared inoperable as part of a planned C Train AC electrical bus outage, and Technical Specification 3.9.12 Action a. (inoperable FHB HVAC train) was entered. On October 19, 2005 at 0821 hours, Unit 2 recommenced Core Alterations after being stopped for Refueling Machine repairs. At the time Core Alterations resumed, all Technical Specifications (TS) in Section 9 "Refueling" and the applicable portion of Section 3, "Instrumentation" were being met. At approximately 0950 hours, Class 1E 125 VDC Switchboard E2C11 was removed from service as part of planned outage maintenance in conjunction with irradiated fuel being moved in the Unit 2 Fuel Handling Building (FHB). The Train C FHB HVAC actuation relays are located in Relay Rack (RR) 145C and are powered from 125V DC Panel 039C, which is in turn powered from Switchboard E2C11. These relays require DC power to automatically place the FHB HVAC in the Emergency mode and would not have actuated with Switchboard E2C11 de-energized. Additionally, although Train C FHB HVAC was already inoperable per TS 3.9.12, the FHB HVAC system was not placed in Emergency Recirculation mode as required by TS 3.3.2. At approximately 1259 hours, Switchboard E2C11 was returned to service.

On October 22, 2005 at approximately 2055 hours, the night shift Atypical Condition Evaluator (a licensed Senior Reactor Operator assigned to evaluate outage activities for atypical plant conditions) identified that TS 3.3.2 Items 11a and 11b (FHB HVAC actuation relays) Actions 29 and 30 were not entered when E2C11 was de-energized on

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October 19, 2005. These actions would have required the C Train of FHB HVAC to be declared inoperable (which had already been done on October 17, 2005 as a result of the Train C AC electrical outage) and placing the FHB HVAC system in the Emergency Recirculation mode of operation. Also, the Atypical Condition Evaluator reviewed the outage work associated with Switchboards E2A11 and E2B11, which had been removed from service during two previous Electrical Bus Outages. When E2A11 was removed from service between 1402 and 1610 hours on October 5, 2005, there were no Spent Fuel Pool (SFP) activities in progress. Switchboard E2B11 was removed from service on October 9, 2005 at 0800 hours and returned to service October 10, 2005 at 1350 hours. During the period of time E2B11 was out of service, all Technical Specification actions were being met.

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

There were no failed components. As stated above, the TS non-compliance was discovered during a review of outage work.

II. COMPONENT OR SYSTEM FAILURES

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

There were no failed components.

B. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

There were no failed components.

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

There were no failed components.

D. FAILED COMPONENT INFORMATION

There were no failed components.

III. ANALYSIS OF THE EVENT

A. SAFETY SYSTEM RESPONSES THAT OCCURRED

Not applicable; this Licensee Event Report documents a TS non-compliance.

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B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY

As described above, the Train C FHB actuation relays were inoperable for approximately 3 hours, however the A and B Trains remained operable and capable of providing the required FHB HVAC emergency recirculation function.

C. SAFETY CONSEQUENCES AND IMPLICATIONS

This event is considered significant because a TS violation occurred. However, because the A and B Trains of FHB HVAC (including actuation logic capability) remained operable, the ability of the FHB HVAC system to automatically respond to a fuel handling accident was not impaired during a time period when fuel movement was in progress.

This event did not adversely affect the safety of the public or station personnel. There were no radiological consequences as a result of this event.

IV. CAUSE OF THE EVENT

The root cause of this event is the over-reliance on highly qualified and experienced individuals to plan and schedule Electrical Bus Outages and the failure to develop and implement procedures to provide guidance for these evolutions. The development of detailed guidance for these activities has not been considered a station priority because the number and significance of events during Electrical Bus Outages have been very low. In the past, Electrical Bus Outage activities have been successfully performed using the knowledge, planning, and scheduling of the Work Window Manager, Electrical (WWME). A contributing cause to the event is that the Senior Reactor Operators (SROs) responsible to ensure TS compliance did not identify that removing E2C11 from service would result in a Technical Specification 3.3.2 entry. The WWME's coworkers and peers reviewed the Electrical Bus Outage plans provided by the WWME, however, they did not scrutinize the details against the requirements of TS 3.3.2 or the Technical Requirements Manual.

V. CORRECTIVE ACTIONS

1. STP will develop a program procedure to control the development of procedures for de-energizing each individual electrical bus, to be used when removing a bus from service to support maintenance.
2. A review of TS 3.3.2 will be included in Licensed Operator Requalification Training prior to the next refueling outage regarding DC-powered actuation relay circuits and their TS applicability during Modes 5 and 6.

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VI. PREVIOUS SIMILAR EVENTS

There have been no previous similar Licensee Event Reports.

X. ADDITIONAL INFORMATION

STP plans to submit a License Amendment Request which better clarifies the Mode 5 and 6 requirements for the FHB actuation relays.