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

May 25, 2006
NOC-AE-06002019
10 CFR 50.73

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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11555 Rockville Pike
Rockville, MD 20852-2738

South Texas Project
Unit 1
Docket No. STN 50-498
Licensee Event Report 1-06-001
Standby Diesel Generator Failed Surveillance Test
Demonstrating Performance at 110% Load

Pursuant to 10 CFR 50.73, the South Texas Project (STP) submits the attached Unit 1 Licensee Event Report 1-06-001 as a result of failure of Standby Diesel Generator 13 to reach 110% of load during a 24-hour surveillance test. Although discovered in March 2006, the cause was identified as having originated in May 2005, when the fuel linkage was previously adjusted and diesel operability at 110% was not verified. Associated Technical Specification action statements were not implemented during that time. Although Standby Diesel Generator 13 was declared inoperable, it continued to be functional. This event did not have an adverse effect on the health and safety of the public.

There are no commitments contained in this Licensee Event Report. Corrective actions will be processed in accordance with the STP Corrective Action Program.

If there are any questions on this submittal, please contact either P. L. Walker at (361) 972-8392 or me at (361) 972-7849.

E. D. Halpin
Site Vice President
and Plant General Manager

PLW
Attachment: LER 1-06-001, Standby Diesel Generator Failed Surveillance Test Demonstrating Performance at 110% Load

LER 1-06-001.doc STI: 32007860 IE22

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NRC FORM 366 (7-2001) U.S. NUCLEAR REGULATORY COMMISSION

I. 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

LICENSEE EVENT REPORT (LER)

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

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4. TITLE

Standby Diesel Generator Failed Surveillance Test Demonstrating Performance at 110% Load

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
									N/A	
03	28	2006	2006	- 001	- 00	05	25	2006	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)	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©(1)(i)(A)	50.73(a)(2)(iv)(A)	73.71(a)(4)	
20.2203(a)(2)(i)	50.36©(1)(ii)(A)	50.73(a)(2)(v)(A)	73.71(a)(5)	
20.2203(a)(2)(ii)	50.36©(2)	50.73(a)(2)(v)(B)	OTHER – None	
20.2203(a)(2)(iii)	50.46(a)(3)(ii)	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)	X 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)
Philip L. Walker, Staff Licensing Engineer	361-972-8392

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
A	EK	ENG	C634	Yes					

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)

On March 25, 2006, Standby Diesel Generator (SBDG) 13 was required by Technical Specifications to have a surveillance test demonstrating performance at 110% load. The 110% level could not be reached, and SBDG 13 was declared inoperable. On March 27, 2006, the condition was corrected by adjusting the fuel linkage to provide the required fuel to achieve 110% load. SBDG 13 was declared Operable at 0304 on March 28, 2006. The linkage had previously been adjusted during a five-year overhaul in May 2005. Post-maintenance testing performed following this adjustment did not include verification that the diesel generator was capable of achieving 110% of rated load. SBDG 13 is considered to have been inoperable from May 28, 2005, until the diesel generator was declared operable on March 28, 2006. Because SBDG 13 was inoperable during this time without entering the appropriate Technical Specification action statements, this event is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B).

The root cause is insufficient barriers in place to ensure the SBDG is operable prior to returning it to service. The 5-year SBDG preventive maintenance test procedure did not require verification to ensure the linkage as-left position was correct. The work package did not specify that a 110% load test run be performed following linkage adjustment.

For corrective action, requirements for verification have been added to maintenance procedures to ensure the fuel linkage is correctly positioned. Maintenance procedures involving diesel generator fuel linkage work will include requirements for load testing to 110% of capacity.

Only SBDG 13 was affected. This event resulted in no personnel injuries, no offsite radiological releases, and no damage to other safety-related equipment.

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

I. DESCRIPTION OF EVENT

A. REPORTABLE EVENT CLASSIFICATION

This event is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B). The South Texas Project (STP) determined that Standby Diesel Generator (SBDG) 13 was inoperable and actions had not been taken as required by Technical Specifications. The requirements of Technical Specification 3.8.1.1 were not met in that one of the three separate and independent standby diesel generators was not operable, and action 3.8.1.1.b was not implemented within the required time. Consequently, STP Unit 1 was in a condition prohibited by Technical Specifications.

B. PLANT OPERATING CONDITIONS PRIOR TO EVENT

STP Unit 1 was in Mode 1 at 100% power.

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

No other inoperable structures, systems, or components contributed to the event.

D. NARRATIVE SUMMARY OF THE EVENT

At 2305 on March 25, 2006, SBDG 13 failed to reach 110% of rated load during performance of a 24-hour surveillance run. Actual performance was 103% of rated load. SBDG 13 was declared inoperable, but functional. Potential cause(s) for not reaching 110% load were initially thought to be either a defective speed controller or generator load sensor. On March 26, 2006, both of these components were replaced followed by a post-maintenance test run on March 27, 2006 at which time SBDG 13 again failed to reach 110% load. Troubleshooting performed on March 27, 2006, revealed the fuel linkage was in fact not at the required settings. The linkage was reset to the correct values and subsequent post-maintenance testing at 110% was successful. SBDG 13 was declared operable at 0304 on March 28, 2006.

The as-found installation of the fuel linkage limited the fuel flow to the engine such that an engine load of 110% could not be achieved. The fuel linkage had previously been adjusted during the SBDG 13 five-year overhaul in May 2005. The post-maintenance test (PMT) performed following this adjustment only required a test load of 100%, and did not include verification that the diesel generator was capable of achieving 110% of rated load. Neither the work documentation nor the inspection procedure required a load test at 110%.

Additional review determined that the incorrect setting of the linkage did not result from a properly set-up fuel rack becoming loose or misadjusted.

Only SBDG 13 was affected. This event resulted in no personnel injuries, no offsite radiological releases, and no damage to other safety-related equipment.

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

This condition, failure to reach 110% of load, was identified during a 24-hour surveillance test that is conducted at least every eighteen months in accordance with Technical Specifications.

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

II. EVENT-DRIVEN INFORMATION

A. SAFETY SYSTEMS THAT RESPONDED

No safety systems were required to respond during this event.

B. DURATION OF SAFETY SYSTEM INOPERABILITY

The fuel linkage had been adjusted during a five-year overhaul performed in May, 2005. The PMT performed following this adjustment did not include verification that the diesel generator was capable of achieving 110% of rated load. Consequently, SBDG 13 is considered to have been inoperable from May 28, 2005, until repairs were implemented and the diesel generator declared operable on March 28, 2006. Technical Specification action 3.8.1.1.b requires that an inoperable standby diesel generator be returned to operable status within 14 days or have the affected unit in at least hot shutdown within the next 12 hours and in cold shutdown within the following 24 hours. Inoperability in this case lasted for approximately 10 months.

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

The Onsite Standby Power Supply Systems of Units 1 and 2 each consist of three independent, physically separated, standby diesel generators supplying power to three associated load groups. Rated load capacity of each SBDG is 5500 kW. The Onsite Standby Power Supply Systems of Units 1 and 2 operate independently of each other. Each standby diesel generator and load group of a particular unit is also physically separated and electrically independent from the other two standby diesel generators and their load groups. Each train (i.e., Load Group) is independent but is not totally redundant; two trains are necessary to mitigate the consequences of a design-basis accident.

With SBDG 13 declared inoperable, Technical Specification action 3.8.1.1.b requires demonstration that the offsite AC sources are operable. This test confirmed that offsite AC power continued to be available. Similarly, Technical Specifications also require demonstration that the remaining two Unit 1 diesels are operable. Operability of SBDG 11 and SBDG 12 was confirmed at 100%.

Operability testing of SBDG 11 and SBDG 12 was initially performed at 100% of load, instead of 110%, for the following reasons:

- Meeting the Technical Specification requirements for operability did not require testing at 110% of maximum load.
- The cause of the SBDG 13 inoperability had not been identified at the time of operability tests of SBDG 11 and 12, and there was no indication of a potential common mode failure.

Following determination that the source of the problem was in the fuel linkage, SBDG 11 and SBDG 12 were tested at 110% of load. Unit 2 SBDG 21 was also tested at 110%. There was no need to test SBDG 22 and SBDG 23 at 110% because 24-hour surveillance runs had been performed on June 20, 2005, and October 20, 2005, that confirmed they could be operated at 110% of full load. There have been no fuel linkage maintenance activities on those diesels since then.

Initial tests of SBDG 13 determined it could provide output at 103% of its rated load of 5500 kW. The maximum steady-state load expected is 4000 kW. There was sufficient margin that, even with the reduced capacity of SBDG 13, the design requirements would continue to be satisfied.

Because SBDG 13 was still classified as being functional, there were no changes in core damage frequency or large early release frequency. However, in order to perform maintenance prior to surveillance testing on March 26, 2006, SBDG 13 was declared non-functional from 2245 until 0000 on March 27. This unavailability for 75 minutes contributed a Conditional Core Damage Probability of 3.03E-9, which is very small when compared to the administrative limit of 1.0E-6.

This event resulted in no personnel injuries, no offsite radiological releases, and no damage to other safety-related equipment.

III. CAUSE OF THE EVENT

The root cause is insufficient barriers in place to ensure the SBDG is operable prior to returning it to service. The five-year diesel preventive maintenance procedure did not require verification to ensure the linkage as-left values are correct. The work package did not specify a 110% load test run following fuel linkage adjustment.

IV. CORRECTIVE ACTIONS

- The maintenance procedure has been revised to add verification that the linkage is in the correct position.
- Diesel generator maintenance requirements for the five-year overhaul will be revised to ensure the fuel system set-up is properly tested.

V. PREVIOUS SIMILAR EVENTS

OE16496 - (OE15542 Update) Diesel Generator Failed to Shutdown When Overspeed Actuated

The apparent cause of this event is that the compounding effect of fuel linkage adjustments can misposition the fuel rack control shaft such that it will not sufficiently move the fuel pumps to the zero fuel position. Contributing causes are:

- Inadequate frequency of performing the overspeed trip test.
- Unclear instructions for checking overspeed trip mechanism operation.

Corrective action was to revise the diesel generator refueling frequency maintenance procedures.

Lessons from OE 16496 would not have precluded the operability concerns discussed in this Licensee Event Report.

STP has not had a similar event in which a diesel generator fuel linkage was improperly adjusted.

VI. ADDITIONAL INFORMATION

None.