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

March 17, 2014
NOC-AE-14003102
10 CFR 50.73

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 2014-001-00
LER 2014-001-00: Standby Diesel Generator 23 Essential Cooling Water Leak Through the Wall of Aluminum-Bronze Pipe Nipple

Pursuant to 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(v), South Texas Project Nuclear Operating Company (STPNOC) submits the attached South Texas Project (STP) Unit 2 Licensee Event Report (LER) 2014-001-00 regarding a Standby Diesel Generator 23 Essential Cooling Water leak through the wall of an Aluminum-Bronze pipe nipple.

This event did not have an adverse effect on the health and safety of the public.

There are no commitments in this letter. Corrective actions will be implemented in accordance with the STP Corrective Action Program.

If there are any questions, please contact Wendy Brost at (361) 972-8516, or me at (361) 972-7566.

G. T. Powell
Site Vice President

web

Attachment: Unit 2 LER 2014-001-00

IE22
NRR

STI 33840342

cc:
(paper copy)

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NRC FORM 366 (02-2014) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 01/31/2017

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@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 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 collection.

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

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4. TITLE

Standby Diesel Generator 23 Essential Cooling Water Leak through the Wall of Aluminum-Bronze Pipe Nipple

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									N/A	N/A
12	31	2013	2014	001	00	03	17	2014	FACILITY NAME: N/A	DOCKET NUMBER: N/A

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
1	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
10. POWER LEVEL	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
099	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
	☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☒ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
Wendy Brost, Licensing Engineer	361-972-8516

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
B	EK	DG	Cooper-Bessemer	Y					

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

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

On December 31, 2013, an approximately three gallon per minute Essential Cooling Water (ECW) leak was discovered on Standby Diesel Generator (SDG) 23 at a one-half inch aluminum-bronze threaded connection. The leak was first identified as a 60 drop per minute leak on November 6, 2013. A reportability review completed on January 16, 2014 determined that SDG 23 had been inoperable since the initial leak was discovered, resulting in a safety system inoperability duration of approximately 55 days, 12 hours, and 27 minutes.

This event is reportable under 10 CFR 50.73(a)(2)(i)(B) as a prohibited by Technical Specifications and under 10 CFR 50.73(a)(2)(v) as a condition that could have prevented the fulfillment of a safety function.

The risk significance of the event is considered to be very small. The leaking aluminum-bronze tee and nipple assembly for SDG 23 was replaced on December 31, 2013 and there was no additional damage to any safety-related equipment associated with this event. The event did not have an adverse effect on the health and safety of the public.

The cause of the failure was erosion of the aluminum-bronze nipple and tee assembly that led to a through-wall ECW leak. Corrective actions include the replacement of the remaining aluminum-bronze nipple and tee assemblies on the SDGs with stainless steel components.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

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NARRATIVE

I. DESCRIPTION OF EVENT

A. REPORTABLE EVENT CLASSIFICATION

This event is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specifications. The event is also reportable pursuant to 10 CFR 50.73(a)(2)(v)(D), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

B. PLANT OPERATING CONDITIONS PRIOR TO EVENT

Unit 2 was operating in Mode 1 at 99.5% power.

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

The event resulted from the inoperability of Standby Diesel Generator (SDG) 23 due to leakage from an aluminum-bronze nipple and tee assembly. There were no other structures, systems, or components that were inoperable at the start of the event that contributed to the event.

D. NARRATIVE SUMMARY OF THE EVENT

On October 3, 2013, an approximately one gpm leak was identified on SDG 22 due to unsatisfactory thread engagement and only slight erosion was noted. This condition was immediately documented and repaired. Work orders were then scheduled to replace the aluminum-bronze tees and piping nipples on SDG 23 and SDG 11 with stainless steel components using an existing design change package (DCP). The aluminum-bronze components had already been replaced with stainless steel components for SDGs 13, 21 and 12.

On November 6, 2013, during a monthly surveillance run of SDG 23, a 60 drop per minute (dpm) leak was identified from a half-inch aluminum-bronze threaded tee connecting the intercooler continuous flowing vents to the Essential Cooling Water (ECW) return piping. This condition was evaluated by Operations and the SDG was declared Operable but Degraded.

During a monthly surveillance run of SDG 23 on December 31, 2013 at 13:46 hours, an approximately three gpm ECW leak was discovered on SDG 23 originating from the same location as the smaller leak identified on November 6, 2013. Operations subsequently declared SDG 23 inoperable and non-functional. The leaking nipple and tee assembly was replaced with stainless steel components on December 31, 2013. SDG 23 was declared operable January 1, 2014.

A Reportability Review completed on January 16, 2014 determined this condition was reportable as a condition prohibited by Technical Specifications pursuant to CFR 50.73(a)(2)(i)(B) and as a condition that could have prevented fulfillment of a safety function reportable pursuant to CFR 50.73(a)(2)(v).

E. METHOD OF DISCOVERY

Both the initial 60 dpm leak on November 6, 2013 and the three gpm leak on December 31, 2013 were discovered during monthly surveillance runs of SDG 23.

NARRATIVE

Following a reportability review completed on January 16, 2014, the event was determined to be reportable as a condition prohibited by Technical Specifications and a condition that could have prevented the fulfillment of a safety function.

II. EVENT-DRIVEN INFORMATION

A. SAFETY SYSTEMS THAT RESPONDED

The SDG leaks were discovered during surveillance activities. No safety systems were required to respond to this event.

B. DURATION OF SAFETY SYSTEM INOPERABILITY

SDG 23 was determined to be inoperable from the time of discovery of the initial leak on November 6, 2013 at approximately 1330 hours until the time SDG was declared operable following maintenance and post-maintenance testing on January 1, 2014 at 0157 hours, a time period of approximately 55 days 12 hours and 27 minutes, which exceeded the 14-day allowed outage time allowed by Technical Specification 3.8.1.1. During the time period when SDG 23 was inoperable, there were short periods when one of the other SDGs was also inoperable. Therefore, in addition to being a condition prohibited by Technical Specifications this event is also reportable as a condition that could have prevented the fulfillment of a safety function.

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

The event did not have an adverse effect on the health and safety of the public.

A risk assessment was performed for this event. The assessment concluded that, given a small leak of three gpm, SDG 23 would fail in 1.5 days due to flooding of the room; however, SDG 23 would still meet the PRA mission time of 24 hours. Credit was given for the performance of operator rounds which would give sufficient time to discover the leak and to implement mitigating strategies. In the case of a Loss of Offsite Power (LOOP), the assessment concludes that the LOOP non-recovery probability is low and recovery is likely to occur before the SDG fails. The calculated incremental core damage probability and incremental large early release probability are very small for this event.

III. CAUSE OF THE EVENT

The cause of the event is erosion of the aluminum-bronze nipple and tee assembly that led to a through-wall ECW leak.

IV. CORRECTIVE ACTIONS

The aluminum-bronze tee and piping nipple for SDG 23 were replaced with stainless steel components on December 31, 2013 using a previously approved design change. On January 8, 2014 the aluminum-bronze tee and piping nipple for SDG 11 were also replaced, completing the replacement of the aluminum-bronze tee assemblies with stainless steel components for the six SDGs at STPEGS.

V. PREVIOUS SIMILAR EVENTS

There have been no similar reportable events at STP related to erosion based degradation within the last three years that have occurred for the same reason as this event.

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NARRATIVE

VI. ADDITIONAL INFORMATION

None