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

July 30, 2009
NOC-AE- 09002449
10 CFR 50.73

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

South Texas Project
Unit 1
Docket No. STN 50-498
Licensee Event Report 1-09-001
Oil Reservoir for Essential Chiller 12B Below Required Temperature

Pursuant to 10 CFR 50.73, the STP Nuclear Operating Company (STPNOC) submits the attached Unit 1 Licensee Event Report 1-09-001 as a result of discovery on 02/24/09 that the Essential Chiller 12B oil reservoir temperature was 108°F. The minimum required temperature is 120°F. Essential Chiller 12C was concurrently out of service for planned maintenance. This condition is reportable under 10 CFR 50.73(a)(2)(i)(B) because the two trains were inoperable for longer than the time allowed by Technical Specifications.

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 J. L. Paul at (361) 972-7344 or me at (361) 972-7158.

L. W. Peter
Plant Manager

JLP

Attachment: LER 1-09-001, Oil Reservoir for Essential Chiller 12B Below Required Temperature

STI: 32510688

IE22
NRR

Cc:
(paper copy)

Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
612 East Lamar Blvd, Suite 400
Arlington, Texas 76011-4125

Mohan C. Thadani
Senior Project Manager
U. S. Nuclear Regulatory Commission
One White Flint North (MS 7 D1)
11555 Rockville Pike
Rockville, MD 20852

Senior Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 289, Mail Code: MN116
Wadsworth, TX 77483

C. M. Canady
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, TX 78704

(electronic copy)

A. H. Gutterman, Esquire
Morgan, Lewis & Bockius LLP

Mohan Thadani
U. S. Nuclear Regulatory Commission

Kevin Howell
Catherine Callaway
Jim von Suskil
NRG South Texas LP

J. J. Nesrsta
R. K. Temple
E. Alarcon
K. Pollo
City Public Service

C. Mele
City of Austin

Jon C. Wood
Cox Smith Matthews

Richard Ratliff
Texas Department of State Health Services

Alice Rogers
Texas Department of State Health Services

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2010

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 Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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 reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
South Texas Project Unit 1	50-498	1 of 4

4. TITLE
Oil Reservoir for Essential Chiller 12B Below Required Temperature

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	05000
02	24	2009	2009	- 01 -	00	07	30	2009	FACILITY NAME: N/A	DOCKET NUMBER: 05000

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)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☒ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☐ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
South Texas Project / Jamie L. Paul, Licensing Engineer	(361) 972-7344

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
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR
07	30	09

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

On 02/24/2009 Unit 1 was in Mode 1. Essential Chiller 12C was out of service for planned maintenance. Essential Chiller 12B was running and was secured in preparation for chiller train rotation at 13:51. At 22:28, Essential Chiller 12B oil reservoir temperature was found to be 108°F which is below the required minimum temperature of 120°F. Essential Chiller 12B was found to be inoperable from the time it was secured at 13:51 due to inadequate calibration of the oil heater thermostat completed on 2/17/09. Operability of Essential Chiller 12C was restored at 2126 on 02/24/09. This condition resulted in two Essential Chillers being inoperable for 7 hours 35 minutes without initiating a unit shutdown. This event is reportable under 10CFR 50.73(a)(2)(i)(B) because the two trains were inoperable longer than allowed by Technical Specification 3.7.14 without taking appropriate action.

The root cause of the low oil temperature condition on Essential Chiller 12B was the lack of an oil heater thermostat calibration procedure that was specific to the Essential Chillers. Corrective actions include revision of the calibration procedure and planning model. This event resulted in no personnel injuries, no offsite radiological releases, and no damage to other safety related equipment.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
South Texas Project Unit 1	05000-498	2009	- 01 -	00	2 OF 4

I. DESCRIPTION OF EVENT

A. REPORTABLE EVENT CLASSIFICATION

This event is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B). The STP Nuclear Operating Company (STPNOC) determined that two Chillers, 12B and 12 C, were concurrently inoperable for 7 hours 35 minutes. Chiller 12C was inoperable for planned maintenance and Chiller 12B was inoperable due to low oil reservoir temperature. Since the unit was not in MODE 3 within the Technical Specification 3.7.14 required action time, 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

On 02/24/2009 Unit 1 was in Mode 1. Essential Chiller 12B was secured from operation at 13:51 in preparation for rotating chiller trains. At 22:28, the oil reservoir temperature was found to be 108°F which is below the minimum temperature of 120°F as specified in the system operating procedure. Essential Chiller 12B was declared inoperable at 01:45 on 02/25/2009. Separately, Essential Chiller 12C was out of service for planned maintenance and was declared inoperable from 02/23/09. Essential Chiller 12C was restored to operable status at 21:26 on 2/24/09.

The Essential Chillers have oil heaters that are used when the chiller is in standby. When the chiller is running, the heaters are off. When the chiller is in standby, a thermostat controls the heater to maintain the oil temperature in the oil reservoir hot enough to minimize the refrigerant from absorbing into the oil which can cause oil foaming. Excessive oil foaming can prevent the chiller from starting on demand.

The cause of the low oil temperature condition on Essential Chiller 12B was determined to be inadequate calibration of the oil heater thermostat completed on 02/17/09. The calibration procedure applied was not specific to the Essential Chillers. Several factors not addressed by the procedure can affect the calibration through temperature and pressure changes. These factors include other concurrent work, ambient changes, and other system interactions that can influence the calibration results if not properly controlled. Consequently, the lack of a

calibration procedure specific to the essential chillers adversely affected the results of the calibration and subsequent adjustments.

Since the inadequate calibration caused the thermostat to not properly maintain temperature, Essential Chiller 12B was inoperable from the time it was secured at 13:51 on 02/24/09. Essential Chiller 12C was inoperable for planned maintenance from 0400 on 02/23/09 until its restoration at 21:26 on 02/24/09 at which time Technical Specification 3.7.14 action b was no longer applicable.

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

The low oil temperature condition on Essential Chiller 12B was discovered during plant operator rounds.

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

Essential Chiller 12B was secured at 13:51 on 02/24/09. Chiller 12C was declared inoperable for planned maintenance from 02/23/09 at 04:00 to 02/24/09 at 21:26. Since Chiller 12B is considered inoperable starting from 13:51 on 02/24/09, both chillers were considered inoperable concurrently for 7 hours 35 minutes.

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

There are three essential chilled water trains. The Essential Chilled Water System is designed to provide chilled water to certain supply air handling units (AHUs) under any normal or emergency conditions.

Essential Chiller 12B was declared inoperable but is considered to have remained functional. The Essential Chiller oil heaters function to minimize refrigerant absorption in the oil. The amount of time the Essential Chiller 12B low oil temperature condition existed was insufficient to have prevented it from starting. Additionally, because the essential chiller is a required support system for ECCS operability, two trains of ECCS were concurrently inoperable but functional for a time in excess of Technical Specification 3.5.2.

There was no impact on incremental core damage frequency. This event did not have an adverse effect on the health and safety of the public. This event resulted in no personnel injuries, no offsite radiological releases, and no damage to other safety-related equipment.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
South Texas Project Unit 1	05000-498	2009	- 01 -	00	4 OF 4

III. CAUSE OF THE EVENT

The root cause of the low oil temperature condition on Essential Chiller 12B was the lack of an oil heater thermostat calibration procedure that was specific to the Essential Chillers.

IV. CORRECTIVE ACTIONS

- Create procedural calibration instructions within 0PMP05-CH-0003 that specifically address factors that can affect calibration of the Essential Chiller oil heater thermostat.
- Change the associated PM planning model to reflect no concurrent chiller maintenance activities during calibration activities.
- Add scheduling comments to PMs for oil heater thermostat calibration that the PM is to be done with no other scheduled activities to avoid potential influences of other work.

V. PREVIOUS SIMILAR EVENTS

Review of condition reports did not identify any previous similar events at STP. However, operating history was reviewed for both the oil heater thermostat and the whole heater assembly which includes the oil heater thermostat. The review indicated there have been two replacements due to drift, and one replacement due to erratic behavior following preventive maintenance.

There is no history of thermostat problems until after the oil heater thermostats were changed out in 2006 as a chiller reliability improvement measure.

Because of a recent significant change to the vendor supplied oil heater thermostat, past material history will not be germane to the new part.

VI. ADDITIONAL INFORMATION

None.