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Daniel P. Breig, P.E.
Station Manager
San Onofre

May 30, 2006

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

Subject: **Docket No 50-362**
Licensee Event Report No. 2006-002
San Onofre Nuclear Generating Station, Unit 3

Dear Sir or Madam:

Southern California Edison (SCE) initiated a plant shutdown on SONGS Unit 3 to inspect the Safety Injection Tank (SIT) manway gaskets on March 29, 2006. At that time, SCE also notified the NRC (Event Log No. 42451) of the initiation of the shutdown in accordance with 10 CFR 50.72(b)(2)(i).

SCE subsequently determined that although the Unit 3 SIT gaskets were degraded, the Emergency Core Cooling System remained capable of performing its required safety function. As a result, on May 30, 2006, SCE retracted the March 29, 2006 event notification.

SCE is providing this voluntary LER to document this condition. This event did not affect the health and safety of either plant personnel or the public.

If you require any additional information, please contact me.

Sincerely,

Daniel P Breig

Units 3 LER No. 2006-002

cc: B.S. Mallett, Regional Administrator, NRC Region IV
C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 & 3

P.O. Box 128
San Clemente, CA 92674-0128
949-368-9263/PAX 89263
Fax 949-368-6183
breigdp@songs.sce.com

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

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 06/30/2007

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 bjs@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 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
San Onofre Nuclear Generating Station (SONGS) Unit 3	05000-362	1 OF 4

4. TITLE

Unit 3 Shutdown to Inspect Safety Injection Tank Spiral Wound Gaskets

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									SONGS Unit 2	05000-361
03	29	2006	2006	002	00	5	30	2006	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE	1
10. POWER LEVEL	99.88

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(c)(1)(i)(A)	50.73(a)(2)(iv)(A)	73.71(a)(4)
20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)	50.73(a)(2)(v)(A)	73.71(a)(5)
20.2203(a)(2)(ii)	50.36(c)(2)	50.73(a)(2)(v)(B)	X OTHER
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)	Voluntary
20.2203(a)(2)(v)	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)
D. P. Breig, Station Manager, Nuclear Generation	949-368-9263

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					

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 29, 2006 at 0001 PST, Southern California Edison (SCE) declared both trains of the Unit 3 Emergency Core Cooling System (ECCS) inoperable, placing Unit 3 in a TS 3.0.3 shutdown action statement for not meeting TS 3.5.2. SCE took this action after discovering SIT manway gaskets degraded at Unit 2.

On March 29, 2006, plant operators initiated a shutdown of Unit 3 at 0050 PST and entered Mode 4 at 1141 PST. Plant equipment performed as designed. SCE reported the initiation of the shutdown to the NRC Operations Center (Event Log No. 42451) in accordance with 10 CFR 50.72(b)(2)(i) at 0334 PST on March 29, 2005.

After shutdown, Unit 3 SIT manway gaskets were found degraded but not interfering with ECCS operation. SCE replaced all SIT manway gaskets in both Unit 2 and Unit 3 with a different design.

Subsequent evaluations determined that the gaskets would not have prevented the ECCS from performing its required safety function. Therefore, on May 30, 2006, SCE retracted the phone report to the NRC (Event Log No. 42451) and is submitting this voluntary LER to document this condition.

Plant: San Onofre Nuclear Generating Station (SONGS) Unit 3
Discovery Date: March 29, 2006
Reactor Vendor: Combustion Engineering
Mode: Mode 1
Power: 99.88 percent

Event Description

At 0001 PST on March 29, 2006, Southern California Edison (SCE) declared both trains of the Unit 3 Emergency Core Cooling System (ECCS) [BQ] inoperable placing Unit 3 in a TS 3.0.3 shutdown action statement for not meeting TS 3.5.2. SCE took this action in response to conditions discovered at Unit 2.

On March 27, 2006, while starting up from its Cycle 14 refueling outage, SCE discovered the manway gasket for Unit 2 Safety Injection Tank (SIT) [TK] 2T008 had partially uncoiled into the SIT discharge piping and interfered with the ability of SIT outlet check valve MU040 to fully seat. This gasket is a spiral wound gasket, consisting of a crushable coiled metal ribbon and graphite that is compressed between the manway cover and the SIT flange. Late on March 28, 2006, SCE inspected the remaining three Unit 2 SITs and found the gaskets degraded (buckled) but not uncoiled into their SITs.

When this condition was discovered, Unit 3 was operating at approximately 100 percent power and the same spiral wound gaskets had been installed on each Unit 3 SIT manway. Therefore, on March 29, 2006, both trains of the Unit 3 ECCS were conservatively declared inoperable and plant operators (utility, licensed) initiated a shutdown of Unit 3 at 0050 PST. Unit 3 entered Mode 4 at 1141 PST. Plant equipment performed as designed. SCE reported the initiation of the shutdown to the NRC Operations Center (Event Log No. 42451) in accordance with 10 CFR 50.72(b)(2)(i) at 0334 PST on March 29, 2005.

SCE began inspecting the Unit 3 SIT manway gaskets on March 31, 2006 (earliest opportunity). Each gasket was found degraded but not uncoiled into their SITs.

SCE was initially concerned that the uncoiled gaskets might interfere with the closing of the check valves and that the open check valve could interfere with operation of the ECCS. Subsequently, the SONGS' Nuclear Steam System Supplier Combustion Engineering (now Westinghouse) evaluated this condition and determined that even if the SIT outlet check valves were open, it would not have prevented the ECCS from performing its required safety function. (See Safety Significance section).

As a result of the "as found" condition of the gaskets and the subsequent evaluation, SCE retracted the phone report to the NRC (Event Log No. 42451) on May 30, 2006, and is submitting this voluntary LER to document this condition.

Cause of Event:

In 2004 during the Cycle 13 outages, all of the SIT manway gaskets in Units 2 and 3 were replaced with a gasket of a different design because the original design gaskets with asbestos filler were no longer commercially available. The gaskets installed at that time were Flexitalic Style CG gaskets with Graphoil filler.

Preliminary assessment of the cause of this event is Radial Inward Buckling (RIB) of the spiral wound gaskets. SCE believes that three factors may have contributed to this occurrence:

- Flange design – The SIT manway flanges were designed to facilitate access and have an inner diameter of 16 inches rather than the 15.25 inches for a standard 16-inch pipe flange. The SIT flange, therefore, provides a narrower surface for the gaskets and places the inner gasket coil closer to the inner edge of the flange.

- Flange surface finish – Spiral wound gaskets rely, in part, on flange friction to remain in position. SCE observed the manway flange surface of SIT 2T008 to be 60-80 micro-inches rms, where the gasket and flange were in contact. American National Standards Institute Standard B16.5, "Pipe Flanges and Flange Fittings" recommends this type of flange surface to be 125-250 micro-inches rms. The other SIT flanges appeared similar.

- Gasket filler material friction – the gaskets installed during the Cycle 13 refueling outages use a graphoil filler material rather than asbestos used in the original design. This also reduced friction between the flange and the gasket material.

Corrective Actions

- SCE replaced all SIT manway gaskets in both Unit 2 and Unit 3 with solid metal core (Kammprofile) gaskets.

- SCE reviewed other safety related equipment (e.g., tanks and heat exchangers) where spiral wound gaskets are used in locations with non-standard flange designs. In all identified locations, either the flange design included a feature (e.g., a lip) to retain the gasket in place or the location continues to use the originally installed spiral wound gaskets with asbestos filler.

SCE's cause evaluation is ongoing (AR 060301594-26). Additional corrective actions may be implemented if necessary.

Safety Significance:

The safety significance of this event is minimal. At Unit 3, all four SIT manway gaskets were found degraded but intact and not interfering with SIT outlet check valves. This condition did not affect the safe operation of Unit 3.

At Unit 2, three gaskets were found degraded but intact, and one gasket interfered with one check valve. SCE requested the SONGS' Nuclear Steam System Supplier, Combustion Engineering (now Westinghouse) to evaluate if the ECCS would be capable of performing its safety function if ECCS flow was diverted away from the RCS through one or more stuck open SIT outlet check valves. Westinghouse concluded that the ECCS performance would remain bounded by the UFSAR Chapter 15 analysis even if all four SIT outlet check valves were prevented from fully closing.

Additional Information:

During the past three years, SCE has not reported any occurrence of a spiral wound gasket failure interfering with downstream components at Unit 2 or Unit 3.