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Dwight E. Nunn
Vice President

November 19, 2002

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

Subject: **Docket Nos. 50-361 and 50-362**
Licensee Event Report No. 3-2002-002
San Onofre Nuclear Generating Station, Units 2 and 3

Gentlemen:

This submittal provides a Licensee Event Report (LER) for a containment emergency cooler being out of service for longer than allowed by the Technical Specifications. While this LER is applicable to both Units 2 and 3, a single report is being submitted in accordance with Section 5.2.7(8) of NUREG-1022, Revision 2.

Any actions listed are intended to ensure continued compliance with existing commitments as discussed in applicable licensing documents; this LER contains no new commitments. If you require any additional information, please so advise.

Sincerely,

LER No. 3-2002-002

cc: E. W. Merschoff, Regional Administrator, NRC Region IV
C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 & 3

IE 22

NRC FORM 366 (7-2001)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104			EXPIRES 7-31-2004		
LICENSEE EVENT REPORT (LER) <small>(See reverse for required number of digits/characters for each block)</small>					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.					
1. FACILITY NAME				2. DOCKET NUMBER			3. PAGE			
San Onofre Nuclear Generation Station (SONGS) Units 2 and 3				05000-362			1 of 4			
4. TITLE										
Breaker Failure to Close renders Containment Emergency Fan Inoperable for Longer than Allowed by Technical Specifications										
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
09	09	2002	2002	002-00		11	19	2002	SONGS Unit 2	05000-361
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(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)		OTHER Specify in Abstract below or in NRC Form 366A	
			20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)			
			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)(vii)(B)			
12. LICENSEE CONTACT FOR THIS LER										
NAME						TELEPHONE NUMBER (Include Area Code)				
R. W. Waldo, Station Manager, Nuclear Generation						949-368-8725				
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	
B	BK	BKR	B470	N						
14. SUPPLEMENTAL REPORT EXPECTED							15. EXPECTED SUBMISSION DATE			
YES (If yes, complete EXPECTED SUBMISSION DATE)					X	NO	MONTH	DAY	YEAR	
16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)										
<p>On September 9, 2002, the Unit 3 Containment Emergency Fan Unit 3ME402 failed to start. This failure was traced to the breaker installed in position 3B0611 (that powers 3ME402) and testing verified that the breaker would not close when given a close signal. On September 24, 2002 (discovery date), SCE concluded that the breaker had failed immediately after its last close operation on August 24, 2002. A similar period of inoperability of this breaker may have existed from June 1, 2002 to June 29, 2002.</p> <p>This event was caused by an inability of the closing springs for this breaker to fully charge through the end of the charge cycle. Asea Brown Boveri (ABB) addressed this failure mode in a 10CFR21 report sent to the Nuclear Regulatory Commission (NRC) on May 6, 2002.</p> <p>SCE replaced the operating mechanism for the failed breaker with a mechanism that is not susceptible to the failure mode discussed in the Part 21 notification. There are 23 breakers of this type installed in safety-related applications in Units 2 and 3. SCE has replaced 5 of these breakers and the remaining breakers are planned for either replacement of the operating mechanism or change out with a breaker not susceptible to this failure mode.</p> <p>This event was of low safety significance.</p>										

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Plant: San Onofre Nuclear Generating Station, Unit 3
 Event Date: September 9, 2002
 Discovery Date: September 24, 2002

	<u>Unit 2</u>	<u>Unit 3</u>
Reactor Vendor	Combustion Engineering	Combustion Engineering
Power (on 9/9/02)	100 percent	100 percent
Power (on 9/24/02)	100 percent	100 percent

Description of the Event.

On September 9, 2002 (event date), the Unit 3 Containment Emergency Fan Unit [BK] 3ME402 failed to start. The failure to start was traced to the breaker [BKR] installed in position 3B0611 (that powers 3ME402). The breaker was removed for evaluation and subsequent testing verified that the breaker would not close when given a close signal. On September 24, 2002, (discovery date) SCE concluded that the breaker had failed immediately after its last close operation on August 24, 2002.

Based on the specific failure mode (see the Additional Information section), SCE reviewed the performance history of the breaker installed in position 3B0611 and recognized that a similar period of inoperability of 3B0611 and 3ME402 may have existed from June 1, 2002, to June 29, 2002. As described in the Additional Information section, this breaker had functioned correctly on several occasions between May 7, 2002 and August 24, 2002.

TS 3.6.6.1 requires two trains of containment cooling to be operable when the plant is in Modes 1 through 3. With one containment cooling train inoperable, action "C" of TS 3.6.6.1 requires the inoperable train to be restored to operability within 7 days. Because containment emergency fan 3ME402 had been inoperable for longer than 7 days on a least one occasion, SCE is submitting this report in accordance with 10CFR50.73(a)(2)(i)(B) for a condition prohibited by the plant's Technical Specifications.

Cause of the Event:

The inoperability of 3ME402 was caused by the inability of the closing springs for breaker installed in position 3B0611 to fully charge through the end of the charge cycle. Asea Brown Boveri (ABB) addressed this failure mode in a 10CFR21 report sent to the Nuclear Regulatory Commission (NRC) on May 6, 2002.

Corrective Actions:

1. SCE replaced the operating mechanism for the failed breaker with a mechanism that is not susceptible to the failure mode discussed in the Part 21 notification. On September 11, 2002, the breaker was reinstalled in position 3B0611 and 3ME402 was returned to service.
2. Additional actions planned in response to the Part 21 notification are described in the Additional Information section.

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Safety Significance:

San Onofre has two trains of emergency containment cooling systems. Each train has one containment spray header (CS)[BE] and two loops of containment emergency coolers. Thus, there are six individual components between Train A and Train B that can provide post accident containment cooling as follows:

Train A

- 1) Containment Spray Pump P012
- 2) Emergency Cooler E399
- 3) Emergency Cooler E401

Train B

- 4) Containment Spray Pump P013
- 5) Emergency Cooler E400
- 6) Emergency Cooler E402

Best estimate calculations completed for Edison's Individual Plant Examination (IPE) concluded that any one of the above six components is sufficient to ensure containment pressure and temperature limits can be maintained. The increased core damage and large, early release risk due to 3ME402's inoperability was calculated to be 4.8E-7 and 2.6E-8, respectively. This calculation was based on actual component unavailability and plant operations when 3ME402 was inoperable (between August 24, 2002 and September 9, 2002), and when 3ME402 may have been inoperable (between June 1, 2002 and June 29, 2002). Therefore, SCE concludes that this event was of low safety significance.

Additional Information:

- In the last two years, there have been no previous events involving the same underlying cause as this event.
- ABB Part 21 Notification:

On May 06, 2002, ABB provided to the NRC a Part 21 Notification for K-Line mechanism failures to charge and close on demand. ABB indicated that this failure mode may exist in K-Line circuit breakers manufactured or having undergone mechanism repair, refurbishment or replacement between January 1, 1988 and December 31, 1998 and recommended utilities address this issue at the next available maintenance interval.

In response to the Part 21 report, SCE reviewed plant records and following verification by ABB, determined that there are 23 breakers of this type installed in safety-related applications in Units 2 and 3. SCE has replaced 5 of these breakers and the remaining breakers are planned for either replacement of the operating mechanism or change out with a breaker not susceptible to this failure mode.

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- Evaluation of 3B0611

The breaker installed in position 3B0611 was overhauled on December 7, 2001 and installed in position 3B0611 on May 7, 2002. On June 29, 2002, 3B0611 failed to close during surveillance testing for 3ME402. Investigation revealed a secondary contact wire was pinched. Following the wire replacement, the breaker was successfully cycled three times. Because SCE considered that the cause of the failure had been identified and corrected, the breaker was not removed for analysis. 3ME402 was started successfully on June 1, 2002, July 28, 2002 and August 24, 2002.