Southern California Edison Company

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

Subject: Docket No. 50-362
30-Day Report
Licensee Event Report No. 93-003
San Onofre Nuclear Generating Station, Unit 3

Pursuant to 10 CFR 50.73(d), this submittal provides the required 30-day written Licensee Event Report (LER) for an occurrence involving three motor-operated containment isolation valves. These valves are being considered inoperable due to motor-operator switch settings which have been determined to be less than adequate based on new information and enhanced testing technology. Neither the health nor the safety of plant personnel or the public was affected by this occurrence.

If you require any additional information, please so advise.

Sincerely,

RWKrieger

Enclosure: LER No. 93-003

cc: C. W. Caldwell (USNRC Senior Resident Inspector, Units 1, 2 and 3)
B. H. Faulkenberry, (Regional Administrator, USNRC Region V)
Institute of Nuclear Power Operations (INPO)

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LICENSEE EVENT REPORT (LER)

Facility Name (1)	Docket Number (2)	Page (3)
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Title (4)

INOPERABLE CONTAINMENT ISOLATION VALVES DUE TO INADEQUATE MOTOR-OPERATOR SWITCH SETTINGS

EVENT DATE (5)			LER NUMBER (6)					REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
Month	Day	Year	Year	///	Sequential Number	///	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)
											NONE	0 5 0 0 0
0 5	2 7	9 3	9 3	---	0 0 3	---	0 0	0 6	2 8	9 3		0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)							
POWER LEVEL (10)	1 0 0	___ 20.402(b)	___ 20.405(c)	___ 50.73(a)(2)(iv)	___ 73.71(b)
//////////////////////////		___ 20.405(a)(1)(i)	___ 50.36(c)(1)	___ 50.73(a)(2)(v)	___ 73.71(c)
//////////////////////////		___ 20.405(a)(1)(ii)	___ 50.36(c)(2)	___ 50.73(a)(2)(vii)	___ Other (Specify in Abstract below and in text)
//////////////////////////		___ 20.405(a)(1)(iii)	X 50.73(a)(2)(i)	___ 50.73(a)(2)(viii)(A)	
//////////////////////////		___ 20.405(a)(1)(iv)	___ 50.73(a)(2)(ii)	___ 50.73(a)(2)(viii)(B)	
//////////////////////////		___ 20.405(a)(1)(v)	___ 50.73(a)(2)(iii)	___ 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

Name	TELEPHONE NUMBER
	AREA CODE
R. W. Krieger, Vice President Nuclear Generation	7 1 4 3 6 8 - 6 2 5 5

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	///////	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	///////
					///////						///////
					///////						///////

SUPPLEMENTAL REPORT EXPECTED (14)		Expected Submission Date (15)	Month	Day	Year
___	Yes (If yes, complete EXPECTED SUBMISSION DATE)	___ XX NO			

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

As the result of ongoing analysis and testing in accordance with Generic Letter (GL) 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance," SCE identified three containment isolation valves which had motor-operator switch settings that were non-conservative compared to those established by our GL 89-10 Motor-Operated Valve (MOV) program. Corrective action was taken to lock these valves in their OPERABLE position as required by the Technical Specifications. SCE will revise the MOV switch settings of these valves in accordance with SCE's MOV switch setting calculation program.

Plant: San Onofre Nuclear Generating Station
Unit: Three
Reactor Vendor: Combustion Engineering
Event Date: 05-27-93

A. CONDITIONS AT TIME OF THE EVENT:

Mode 1, Power Operation

B. BACKGROUND INFORMATION:

1. Systems:

Component Cooling Water System (CCW) [CC]:

The CCW System has two redundant trains (critical loops) that supply cooling water to safety equipment needed for plant shutdown and emergency cooldown subsequent to a design basis event. The CCW System supports mitigation of accident conditions requiring heat removal from various plant systems, including the Containment Emergency Coolers [BK]. Following receipt of a Containment Cooling Actuation Signal (CCAS) [JE], the Containment Emergency Cooling Unit [CLR] supply and return valves [HCV] open.

Nuclear Plant Sampling System:

The Nuclear Plant Sampling System allows fluids used in the reactor coolant system [AB] to be monitored during normal operation for required chemical conditions. Pressurizer [PZR] Steam Sample Isolation Valve [ISV], 3HV-0510 automatically closes on a Containment Isolation Action Signal (CIAS) [JM].

2. Technical Specifications (TS):

TS 3.6.3.1, "Containment Isolation Valves," requires certain isolation valves to be demonstrated operable in Modes 1 through 4 in accordance with TS 4.6.3.1, TS 4.6.3.5, and Sections A and D, respectively, of Table 3.6-1.

For these specifications, valves secured in their actuated position are considered OPERABLE.

3. NRC Requirements:

When San Onofre Units 2 and 3 were originally designed and constructed, motor-operated valve (MOV) switch settings were calculated consistent with the valve manufacturer's recommendations to ensure the MOVs would operate during anticipated design basis events. SCE and the NRC considered the MOVs operable with these set-points. The MOVs were demonstrated to be operable per the applicable TS surveillance testing.

Following the original MOV switch set-point calculations, the NRC issued Bulletin 85-03, "Motor-Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Settings," which requested licensees to include additional conservatisms in the calculations. In response, SCE modified the MOV switch set-point calculation program to incorporate these added conservatisms. New MOV switch set-points were calculated, and MOVs requiring switch set-point adjustment were corrected; surveillance testing demonstrated operability.

In 1989, the NRC issued Generic (GL) Letter 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance," which again requested licensees to modify their MOV switch set-point calculations. Factors which could potentially affect MOV operation such as orientation, internal friction, aging, and normal wear, were to be addressed. SCE again revised the MOV switch set-point calculation program to incorporate these new added conservatisms.

In response to the GL 89-10 requirements, SCE has been:

1) validating the design basis MOV operating conditions;

2) re-calculating the required torque switch settings; and

3) testing the valves under actual design bases flow and pressure conditions, where possible, using the MOV Analysis and Test System (MOVATS) to verify operability.

C. DESCRIPTION OF THE EVENT:

As the result of ongoing analysis and testing established by GL 89-10, the following discrepancies were identified:

CCW SYSTEM:

On May 14, 1993, a preliminary evaluation of design bases test data indicated the current motor-operator switch setting for MOVs 3HV-6366 and 3HV-6368 (CCW supply valves) were non-conservative compared to those calculated under our MOV program. At approximately 1920, with Unit 3 in Mode 1 at 100% power, MOVs 3HV-6366 and 3HV-6368 were conservatively declared inoperable.

On May 15, 1993, at approximately 0215, SCE conservatively secured these valves in their ESFAS actuated position (open) and declared them OPERABLE in accordance with TS 4.6.3.5, pending completion of the design bases test data evaluation.

On May 27, 1993, the design bases test data evaluation was completed. The evaluation concluded the as-found data was non-conservative in the closing direction, but was acceptable in the opening direction.

Nuclear Plant Sampling System:

On June 7, 1993, a preliminary evaluation of design bases test data indicated the current as-left motor-operator switch setting for MOV 3HV-0510 may have prevented valve closure. At approximately 1120, with Unit 3 in Mode 1 at 100% power, MOV 3HV-0510 (Pressurizer Steam Sample Isolation Valve) was conservatively declared inoperable.

At approximately 1245, on June 7, 1993, MOV 3HV-0510 was declared OPERABLE by securing the valve in the closed position in accordance with TS 4.6.3.1.

Summary:

The valve motor-operator switch settings for the above MOVs were last changed during the 1992, Unit 3 Cycle 6 refueling outage. Since that time, although these valves were in their correct position, they were not secured in that position. As a result, the valves were conservatively considered inoperable since they were not secured in their ESFAS actuated position, and may not have been able to perform their safety function under certain postulated design basis conditions. This is a condition prohibited by TSs.

D. CAUSE OF THE EVENT:

The CCW and Pressurizer Steam Sample Isolation MOVs had previously been configured to the generally accepted methodology and regulatory criteria existing at each stage of MOV set-point evolution from initial construction, through GL 85-03, and the initial testing and setup in accordance with GL 89-10. The changes to settings during this period occurred as new information resulting from NRC and industry testing quantified a number of factors which have since been determined to significantly affect MOV thrust requirements such as orientation, aging, test equipment accuracy, and test methodology. Subsequent evaluation and testing of these valves to GL 89-10 criteria determined that the actuators were not configured (i.e., torque switch settings and gear drive sets) such that proper valve operation could be assured.

E. CORRECTIVE ACTIONS:

1. These valves were secured in their OPERABLE position as required by the TSs.

2. The Units 2 and 3 Cycle 6 MOV motor-operator set-point calculations will be revised and will be compared with MOV test data when complete [estimated for August 21, 1993, but no later than the end of Cycle 7 Refueling Outage 1993]. To date, there have been no similar set-point deficiencies identified for Units 2 or 3 which affected MOV operability other than those described here in or in LER 92-006 (Docket No. 50-361), described in Section G below.

3. SCE will complete the calculations necessary to establish the new set-point for 3HV-0510, 3HV-6366, and 3HV-6368 by the start of Unit 3 Cycle 7 (estimated for October 1, 1993).

4. SCE will reset and retest (MOVATS) 3HV-0510, 3HV-6366, and 3HV-6368 to the new set-points by the end of Unit 3 Cycle 7 Refueling Outage (estimated for December 30, 1993).

F. SAFETY SIGNIFICANCE OF THE EVENT:

CCW SYSTEM:

SCE has evaluated the valves associated with maintaining certain ESFAS valves in their ESFAS actuated position. The containment emergency cooler CCW supply valves were included in this evaluation. This evaluation concluded that there was no significant increase in either the core damage frequency or a significant offsite release frequency with the valves secured in open (ESFAS actuated) position. During normal operation, these valves are normally maintained in the open position. This evaluation would be applicable for the period when the valves may not have been capable of closing under design conditions.

Nuclear Plant Sampling System:

The containment isolation valve for the Pressurizer Steam Space sample line is normally closed and is briefly opened only when sampling the pressurizer steam space. The Nuclear Plant Sampling System is not used post-accident; therefore, it is unlikely that the valve would be open and required to close under the limiting design basis conditions.

Summary:

It is concluded that the as-found MOV set-points are of minimal safety significance.

G. ADDITIONAL INFORMATION:

Previous LERs for Similar Events:

LER 92-006 (Docket No. 50-361) reported that the Emergency Core Cooling System (ECCS) and Containment Spray (CS) minimum flow isolation MOVs may not have been capable of full closure at design basis operating conditions. The planned corrective action stated in part, "The evaluation, testing and modification of all remaining applicable MOVs pursuant to GL 89-10 will continue in accordance with SCE's program."

This new LER is a direct result of the LER 92-006 planned corrective action.