SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

R. W. Krieger
Vice President
Nuclear Generation

January 14, 199

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

Subject: Docket No. 50-361
30-Day Report
Licensee Event Report No. 96-011
San Onofre Nuclear Generating Station, Unit 2

Pursuant to 10 CFR 50.73(d), this submittal provides the required 30-day written Licensee Event Report (LER) for an occurrence involving the inoperability of a containment isolation valve. Neither the health nor the safety of plant personnel or the public was affected by this occurrence or condition.

If you require any additional information, please so advise.

Sincerely,

Enclosure: LER No. 2-96-011

cc: L. J. Callan, Regional Administrator, NRC Region IV
J. E. Dyer, Director, Division of Reactor Projects, Region IV
K. E. Perkins, Jr., Director, Walnut Creek Field Office, NRC Region IV
J. A. Sloan, NRC Senior Resident Inspector, Units 2 and 3
M. B. Fields, NRC Project Manager, San Onofre Units 2 and 3
Institute of Nuclear Power Operations (INPO)

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LICENSEE EVENT REPORT (LER)

Facility Name (1)	Docket Number (2)	Page (3)
SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2	0 5 0 0 0 3 6 1	1 of 0 5

Title (4)
Air Operated Containment Isolation Valve Inoperable

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
1 2	1 6	9 6	9 6		0 1 1 1		0 0	0 1	1 4	9 7		0 5 0 0 0

OPERATING MODE (9): 6

POWER LEVEL (10): 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)

___ 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
R. W. Krieger, Vice President, Nuclear Generation	AREA CODE 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	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
D	K N	I S V	F 1 3 0	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

___ Yes (If yes, complete EXPECTED SUBMISSION DATE)

_X_ NO

Expected Submission Date (15): Month ___ Day ___ Year ___

On 12/10/96, Edison personnel, in developing a test program for air operated valves, applied test equipment to containment isolation valve 2HV0513. Preliminary results indicated it was likely that the actuator settings for valve 2HV0513 would not generate sufficient closing force to overcome internal pressure and packing drag under design basis conditions. Calculations completed on 12/16/96 confirmed the preliminary assessment. Edison concluded that compelling evidence exists that valve 2HV0513 had been inoperable when Unit 2 was in Mode 1. Because the required action of the Technical Specifications was not performed, Edison is reporting this condition in accordance with 10CFR50.73(a)(2)(i).

Edison concluded that either of two separate errors could have caused valve 2HV0513 to have insufficient closing force: (1) vendor setpoint methodology error or (2) a deficiency in the reassembly procedure.

Edison will reset and retest valve 2HV0513 prior to returning Unit 2 to Mode 4. Edison will upgrade its maintenance procedures to conform to the current vendor manual. Edison has performed an analysis on all air-operated containment isolation valves and confirmed that all other Units 2 and 3 air operated containment isolation valves have sufficient actuator closing force to remain operable.

Notwithstanding this analysis confirmation, prior to the end of the current Unit 2 refueling outage, Edison will verify actuator settings for Unit 2 air operated containment isolation valves which may not have had their actuator settings established in accordance with the vendor recommendations. Similar actions will be completed for Unit 3 during its next refueling outage.

Plant: San Onofre Nuclear Generating Station Unit 2
Reactor Vendor: Combustion Engineering
Event Date: December 16, 1996
Event Time: 1125 PST
Mode: 6, refueling
Power: 0%
Temperature: 63 degrees F
Pressure: atmospheric

Background:

As required by General Design Criterion 55(4), the Unit 2 containment penetration (0.75 inch diameter) pressurizer surge line sample [KN] line is equipped with an automatic (motor operated) isolation valve [ISV] inside containment (valve 2HV0512), and an automatic (air operated) isolation valve [ISV] outside containment (valve 2HV0513, a 1 inch Fisher Controls Type 667-DBQ diaphragm actuated control valve). These valves are required by Technical Specification Limiting Condition for Operation (LCO) 3.6.3 to be operable in Modes 1, 2, 3 and 4. The required action when valve 2HV0513 is inoperable is to isolate the affected penetration flow path within 4 hours by closing and de-activating valve 2HV0512.

Similar to the Motor Operated Valve program Edison implemented to comply with Generic Letter 89-10, Edison recently began development of a program for Air Operated Valves (AOVs) and began field testing AOVs during the current Unit 2, cycle 9 refueling outage. The first valves to be tested were selected from the total AOV population based on valve maintenance history and past performance. The first valve to be tested was 2HV0513.

Description of the Event:

On December 10, 1996, Edison personnel applied a Fisher Flowscanner (which measures valve actuator pressure and valve position) to valve 2HV0513. Preliminary test results indicated it was likely that the actuator settings for valve 2HV0513 would not generate sufficient closing force to overcome the internal pressure of the sample line and the packing drag under design basis conditions. Calculations completed on December 16, 1996, confirmed the preliminary assessment. Edison therefore concluded that compelling evidence exists that valve 2HV0513 had been inoperable when Unit 2 was in Mode 1. Because the required action of LCO 3.6.3 was not performed, Edison is reporting this condition in accordance with 10CFR50.73(a)(2)(i).

Cause of the Event:

Edison concluded that either of the following two separate errors could have caused valve 2HV0513 to have insufficient closing force: (1) vendor setpoint methodology error or (2) a deficiency in the reassembly procedure.

Vendor Setpoint Methodology:

Four air operated valves (two at each Unit - see below) have a different design than other air operated valves at Units 2 and 3. Most valves have a port flow area that is larger than the stem cross section area. Valves 2HV0513, 2HV0511, 3HV0513, and 3HV0511 have stem cross section areas that are larger than the port area (see attached figure). The greater of these two areas should be used in calculating the required actuator setting. For valves 2HV0513, 2HV0511, 3HV0513, and 3HV0511, the vendor incorrectly used the smaller (port) area instead of the larger stem area. Had the stem area been used, the vendor-supplied setting criteria would have specified a closing force sufficient to close the valve against sample line internal pressure.

2HV0513 - Pressurizer Surge Line Outside Containment Sample Isolation Valve - Unit 2

2HV0511 - Pressurizer Steam Space Outside Containment Sample Isolation Valve - Unit 2

3HV0513 - Pressurizer Surge Line Outside Containment Sample Isolation Valve - Unit 3

3HV0511 - Pressurizer Steam Space Outside Containment Sample Isolation Valve - Unit 3

By reviewing valve stroke tests, Edison confirmed actuator closing force settings for 2HV0511, 3HV0513, and 3HV0511 are sufficient to overcome both internal line pressure and valve packing drag. Consequently, these valves remain capable of performing their containment isolation function and are operable.

Reassembly Procedure:

In July 1993, corrective maintenance was performed on 2HV0513 to repair a packing leak. As part of the reassembly sequence and in accordance with the reassembly procedure, the spring tension on 2HV0513 was bench set with the valve packing installed and the actuator stem coupled to the valve stem. The vendor manual (that was current in 1993) specified: (1) valve spring tension be adjusted with the actuator stem coupled to the valve stem; and (2) when bench setting the actuator, the packing was to be loosely inserted in the bonnet (packing nuts not tightened). The procedure used in 1993 specified requirement (1) but not requirement (2). In the resulting configuration, spring tension adjustment during bench setting would not properly account for the valve packing drag, thus reducing the available actuator closing force.

The procedure used in July 1993 was based on a vendor manual issued in July 1973 that did not contain the requirement to perform the bench set with the packing loosely inserted. In 1980, a vendor manual change added this requirement; however, it was not incorporated into the reassembly procedure. Due to the passage of time, the cause of that omission is unknown.

Corrective Actions:

Edison will reset and retest valve 2HV0513 prior to returning Unit 2 to Mode 4. Edison will upgrade its maintenance procedures to conform to the current vendor manual which recommends uncoupling the actuator from the valve when bench setting the actuator. Edison has performed an analysis on all air-operated containment isolation valves and confirmed that all other Units 2 and 3 air operated containment isolation valves have sufficient actuator closing force to remain operable.

Notwithstanding this analysis confirmation, prior to the end of the current Unit 2 refueling outage, Edison will verify actuator settings for Unit 2 air operated containment isolation valves which may not have had their actuator settings established in accordance with the vendor recommendations. Similar actions will be completed for Unit 3 during its upcoming cycle 9 refueling outage.

Since 1980, Edison has implemented program enhancements for the control of vendor information, including our responses to NRC Generic Letters 83-28 and 90-03, described in Edison to NRC letters dated 5/31/84, 9/25/90, 9/30/91 and 11/15/91. When developing the vendor information program, Edison reviewed historical vendor information to ensure it had been captured in plant documents and procedures. Edison further enhanced the vendor information program in 1994 and believes it will correctly capture revised vendor information.

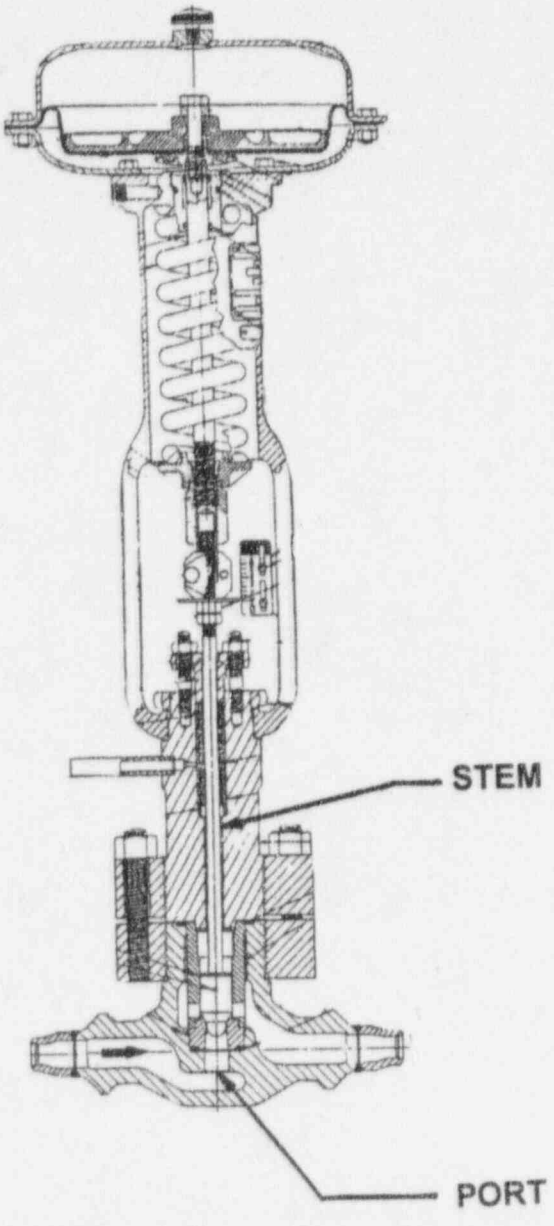
Safety Significance:

Based on testing and maintenance history data, the other containment isolation valve in the affected sample line (motor operated isolation valve 2HV0512) remained operable, and would have been able to close to provide containment isolation. Therefore, the safety significance of this occurrence is minimal.

Additional Information:

Edison reported similar inoperabilities of motor operated containment isolation valves in Unit 3 LER's 93-003 and 93-005. These inoperabilities were discovered via the motor operated valve testing program. Edison was pursuing a comparable testing program for air operated valves when the condition reported herein was detected.

Valve 2HV0513 is a 1 inch Fisher Controls Type 667-DBQ diaphragm actuated control valve.


STEM
PORT