Southern California Edison Company

SAN ONOFRE NUCLEAR GENERATING STATION

P. O. BOX 128

SAN CLEMENTE, CALIFORNIA 92674-0128

R. W. KRIEGER
STATION MANAGER

TELEPHONE
(714) 368-6255

March 8, 1993

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

Subject: Docket No. 50-361
30-Day Report
Licensee Event Report No. 93-001
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 condition involving an inoperable Main Steam Safety Valve for Unit 2. Neither the health nor the safety of plant personnel or the public was affected by this condition.

If you require any additional information, please so advise.

Sincerely,

Enclosure: LER No. 93-001

cc: C. W. Caldwell (USNRC Senior Resident Inspector, Units 1, 2 and 3)

J. B. Martin (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)
SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2	0 5 0 0 0 3 6 1	1 of 0 6

Title (4)

MAIN STEAM SAFETY 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
0 2	0 4	9 3	9 3		0 0 1		0 0	0 3	0 8	9 3		0 5 0 0 0

OPERATING MODE (9)		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)
	1	___ 20.405(a)(1)(i)	___ 50.36(c)(1)	___ 50.73(a)(2)(v)	___ 73.71(c)
POWER LEVEL (10)		___ 20.405(a)(1)(ii)	___ 50.36(c)(2)	___ 50.73(a)(2)(vii)	___ Other (Specify in Abstract below and in text)
	1 0 0	___ 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, Station Manager	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	///////
					///////						///////
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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)

At 1434 on February 8, 1993, an engineer notified the Operations Shift Superintendent that Main Steam Safety Valve (MSSV) 2PSV 8411 was inoperable due to the insulation having been removed from the valve body. Since the removal of the insulation may cause the setpoint to shift, the MSSV was conservatively considered inoperable. Action was immediately initiated to restore the insulation. The action statement for an inoperable MSSV was entered which required a reduction in the Linear Power Level-High Setpoint to 98.6% within four hours as required by Technical Specification (TS) 3.7.1.1. The MSSV insulation was reinstalled at approximately 1500 and the MSSV was declared operable at 1632 after the valve body temperature had stabilized.

Subsequent investigation determined that the insulation had been removed on February 4, 1993, at approximately 1400 to provide access for investigation of a leak on the discharge flange of the MSSV.

As a corrective action, a warning will be added to the computerized San Onofre Maintenance Management System (SOMMS) concerning the need to declare the MSSV inoperable if the insulation is removed. A formal root cause evaluation will also be performed which may result in additional corrective actions.

This event had no safety significance since sufficient steam pressure relieving capacity existed to prevent exceeding 110% of the design pressure.

Plant: San Onofre Nuclear Generating Station
Unit: Two
Reactor Vendor: Combustion Engineering
Event Date: February 4, 1993
Time: 1400

A. CONDITIONS AT THE TIME OF THE EVENT:

Mode: 1, Power Operation
Power Level: 100%

B. BACKGROUND INFORMATION:

The Main Steam Safety Valves (MSSV) provide overpressure protection for the secondary side of the Steam Generators (SG) and the main steam piping. Safety valve operability ensures that the secondary system pressure is limited to not more than 110% of design pressure for the most severe transient.

Unit 2 has eighteen MSSV's, nine on each of two main steam lines. The Technical Specifications (TS) specify a lift setpoint for each valve with a 1% tolerance. The MSSVs have staggered setpoints such that not all valves relieve at the same pressure. The valve on each steam line with the lowest pressure setting is set to relieve at 1100 psia (SG design pressure). The valve with the highest pressure setting is set to relieve at 1155 psia (105% of SG design pressure). The valve that was discovered to have missing insulation, 2PSV-8411, is set to relieve at 1107 psia.

The MSSVs are lagged (insulated) in order to minimize heat loss in the MSSV header. The insulation consists of thermal insulation installed around the valve body, discharge flange and adjacent inlet piping. Insulation of the MSSVs increases the valve body temperature during operations. The MSSVs are calibrated with the insulation installed. If the valve operating temperature is lower than the calibration temperature, the pressure at which the valve will lift may be different from that established during calibration testing.

TS 3.7.1.1, "Safety Valves," requires that all MSSVs be operable with lift settings within a specified pressure range per TS Table 3.7-1. If one or more of the valves are not operable, the Power Level-High reactor trip setpoint must be reduced per TS Table 3.7-2 within 4 hours; otherwise, the unit must be shutdown.

C. DESCRIPTION OF EVENT:

1. Event:

At 1434 on Monday, February 8, 1993, an engineer notified the Operations Shift Superintendent (SS) [utility, licensed] that MSSV 2PSV-8411 should be considered inoperable due to the insulation having been removed from the valve body. Experience on similar valves has indicated that the setpoint

could drift sufficiently to cause the valve to become inoperable if the insulation was removed. Since the effect of the insulation removal on the setpoint of this valve could not be determined, the action statement was entered. Subsequent investigation determined that the valve insulation had been removed shortly after 1400 on February 4, 1993. Operation with an MSSV setpoint possibly out of calibration for more than four hours without reducing power is contrary to the operability and action requirements of TS 3.7.1.1.

Action was immediately initiated to restore the insulation. Action was also initiated to reduce the Linear Power Level-High Setpoint to 98.6% as required by the TS 3.7.1.1 action statement. The MSSV insulation was reinstalled at approximately 1500 on February 8th, and the MSSV was declared operable at 1632 after the valve body temperature had stabilized. MSSV 2PSV-8411 was restored to operability prior to reduction of the Linear Power Level-High Setpoint as required by TS 3.7.1.1.

2. Inoperable Structures, Systems, or Components that Contributed to the Event:

Not applicable.

3. Sequence of Events:

Date/Time	Description
2/4/93:	
~1400	Insulation is removed from the MSSV discharge flange and the valve body.
2/8/93:	
1434	Operations is notified that MSSV 2PSV-8411 is possibly inoperable. Operations conservatively initiates actions to comply with the TS 3.7.1.1 action requirements.
~1500	Reinstallation of valve insulation is complete.
1632	MSSV 2PSV-8411 is declared operable after temperatures had stabilized.

4. Method of Discovery:

At about 1400 on February 8th, a Maintenance foreman (utility, non-licensed) phoned the MSSV Systems Engineer to discuss the work plan on 2PSV-8411. As a result of the discussion, the engineer became concerned that there was a possibility that the insulation had been removed from the MSSV body. The engineer went to inspect the valve and observed that the insulation had been removed, thereby bringing into question the valve setpoint. The engineer promptly informed the Shift Superintendent that 2PSV-8411 should be considered inoperable.

5. Personnel Actions and Analysis of Actions:

Not applicable.

6. Safety System Responses:

Not applicable:

D. CAUSE OF THE EVENT:

1. Immediate Cause:

A MO was initiated to identify and correct the cause of water leaking through the insulation near the discharge flange on MSSV 2PSV-8411. The planner recognized that to fully inspect and tighten the MSSV discharge flange, it would be necessary to remove the MSSV body insulation in addition to the discharge flange insulation. The planner provided approval to the contractors to remove the valve body insulation although the original work plan only contemplated removal of the flange insulation.

2. Root Cause:

A preliminary root cause evaluation of this event concluded that sufficient information was not available in the San Onofre Maintenance Management System for work planners to identify that removing the insulation from the MSSVs would render them inoperable. A formal root cause evaluation for this event will be performed to determine the final root cause.

E. CORRECTIVE ACTIONS:

1. Corrective Actions Taken:

a. The MSSV, 2PSV-8411, insulation was promptly reinstalled.

2. Planned Corrective Actions:

a. A warning will be added to the computerized San Onofre Maintenance Management System (SOMMS) to alert personnel that a MSSV must be declared inoperable if the valve body insulation is removed.

b. SCE is performing a formal root cause evaluation of this event to determine additional corrective actions.

F. SAFETY SIGNIFICANCE OF THE EVENT:

A Combustion Engineering (CE) study titled, "Expanded Setpoint Tolerance Limits for the Pressurizer and Main Steam Safety Valves for SONGS 2 and 3," dated February 27, 1991 shows that the maximum tolerance limits for MSSV's can be expanded from 1% to 2% with one MSSV inoperable and still satisfy peak secondary pressure limitations. For the worst case scenario from 100% power with one MSSV inoperable (i.e., not capable of opening) and a 2% tolerance on all other MSSVs, peak pressure would not exceed the 1210 psia limit for the limiting design basis event.

The CE study is conservative with respect to this event since although the MSSV valve body temperature reduction resulting from removal of the valve body insulation could have caused the setpoint to change in the non-conservative direction (i.e., increase), MSSV 2PSV-8411 would still have been capable of opening in the event of an overpressure condition although possibly at an incorrect (higher) pressure. Additionally, during the time that the insulation was removed from 2PSV-8411, all other MSSVs were operable, and their setpoint tolerances were within the 1% TS limits which is more conservative than assumed in the CE study.

Therefore, sufficient overpressure protection existed in the event of a limiting pressure transient to prevent exceeding the 1210 psia limit. As a consequence, there is no safety significance to this event.

G. ADDITIONAL INFORMATION:

1. Component Failure Information:

Not applicable.

2. Previous LERs for Similar Events:

LER 90-008 (Docket Number 50-361), "Main Steam Safety Valve Setpoints Outside Technical Specification Limits," reported incorrect MSSV setpoints. The incorrect MSSV setpoints were due to the valves being calibrated at a different temperature than the temperature experienced during operation. One of the proposed corrective actions identified in that LER was to require an engineering evaluation any time the insulation was to be removed from the MSSVs to ensure that their operability was properly addressed prior to removal of insulation.

This action was implemented on September 13, 1990, when the general MO for insulation removal was changed to include the following statement: "excludes insulation removal from the Main Steam Safety Valves." In addition, a note was placed in the MO that stated "Insulation on the Main Steam Safety Valves 'may not' be removed on any blanket (general) MO's. These equipments ID's are: PSV-8401 thru PSV-8418."

3. Other Additional Information:

During the course of the investigation into this event, it was discovered that the computerized Plant Equipment Data Management System (PEDMS), did not identify this component as a TS required component. This discrepancy was brought to the attention of the systems engineer and has been corrected. In addition, all of the other MSSVs were updated to identify them as TS required components in PEDMS.