

LICENSEE EVENT REPORT (LER)

Facility Name (1) SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 1						Docket Number (2) 0 5 0 0 0 2 0 6				Page (3) 1 of 0 6		
Title (4) INADVERTENT OMISSION OF SAFETY INJECTION VENT VALVES FROM LOCAL LEAK RATE TESTING (LLRT) PROGRAM												

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)				
0 5	2 4	8 8	8 8	0 0 8	0 1	1 1	2 9	8 8	NONE		0 5 0 0 0				
OPERATING MODE (9) 5				THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)											

POWER LEVEL (10) 0 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.36(c)(2)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	<input type="checkbox"/> 50.73(a)(2)(x)	<input type="checkbox"/> 73.71(b)	<input type="checkbox"/> 73.71(c)	Other (Specify in Abstract below and in text)
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LICENSEE CONTACT FOR THIS LER (12)

Name H. E. Morgan, Station Manager	TELEPHONE NUMBER AREA CODE 7 1 4	3 6 8 - 6 2 4 1
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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

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> Yes (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	Expected Submission Date (15)	Month	Day	Year
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On 5/24/88, with Unit 1 in Mode 5, it was determined that, contrary to Technical Specification 4.3.1.III, Containment Isolation Valve Leakage Rate Tests (Type C), the containment isolation valves associated with penetration E15 (SV-702A, B, C, and D), which are used to vent Safety Injection System (SIS) Loop B and C injection lines, had been omitted from the type C Local Leakage Rate Test (LLRT) program since the valves were installed in 1974.

The individuals who initially evaluated Unit 1 for compliance with Appendix J (which is described in SCE's April 1976 submittal regarding the subject) did not adequately review all design disclosure documents to ensure that all penetrations were properly considered for leak rate testing.

Leakage tests were performed on SV-702A, B, C, and D. The measured leakage was minor and its contribution to total containment leakage was minimal. A design change will be implemented during the cycle 10 refueling outage to provide LLRT test connections for penetration E15, and the valves will be added to the LLRT program. The LLRT program will be reviewed to ensure that all penetrations which are subject to Type C testing are included.

The root cause of the above omissions cannot be definitively determined due to the 12 years that have passed since the omission occurred. SCE believes, however, that the causes for the omission are bounded by the root causes related to deficiencies in the adequacy of engineering and technical work. Corrective actions being taken for the root cause concerns are addressed in a 10/3/88 submittal to the NRC regarding SCE's assessment of engineering and technical support for San Onofre. These corrective actions include (1) a re-organization with responsibility for design functions and the design basis focused in one department, (2) augmentation of in-house engineering resources and performance of the majority of conceptual engineering in-house, and (3) the establishment of a design basis documentation program to recapture and maintain the design basis.

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Plant: San Onofre Nuclear Generating Station
 Unit: One
 Reactor Vendor: Westinghouse
 Event Date: 5/24/88

A. CONDITIONS AT TIME OF THE EVENT:

Mode: 5, Cold Shutdown

B. BACKGROUND INFORMATION:

The Safety Injection System (SIS) (EIIS System Code BQ) utilizes three injection lines to inject borated water into each of the Reactor Coolant System (EIIS System Code AB) cold legs in the event of a design basis event. As a result of SIS water hammer events in the early 1970's due to voiding in the injection lines, a design change was installed in 1974 to allow venting of the loop B and C SIS injection lines during normal plant operation. (The capability to perform periodic venting of the loop A injection line during normal plant operation already existed.) The vent lines installed include inside and outside solenoid-operated containment isolation valves (EIIS Component Code ISV) SV-702D and SV-702C, respectively, in the loop B vent line, and SV-702B and SV-702A, respectively, in the loop C vent line, and are routed through a common containment penetration, E15 (EIIS Component Code PEN). The solenoid valves, which are normally closed except to perform the venting operation, can be remotely operated and will close automatically upon receipt of a Containment Isolation Signal (CIS) (EIIS System Code JM).

Title 10, Part 50, Appendix J of the Code of Federal Regulations (CFR) contains the requirements for containment leakage testing. Type C local leakage rate tests (LLRTs) are performed to measure the leakage through applicable containment isolation valves, including those that:

- 1) provide a direct connection between the inside and outside atmospheres of containment under normal operation,
- 2) are required to close automatically upon receipt of a CIS in response to controls intended to effect containment isolation, or
- 3) are required to operate intermittently under post accident conditions.

Thus, type C LLRTs of the valves associated with the loop A vent line, which includes only the manual valves on the header outside containment, are not required to be performed by the above criteria; however, type C LLRTs are required to be performed on the solenoid valves associated with the loop B and C vent lines, since they receive a CIS and therefore meet criterion 2.

When the plant was initially evaluated for compliance with Appendix J in April 1976, penetration E15 was omitted from the list of applicable penetrations. In addition, consistent with the loop A vent line, the loop B and C vent lines were installed without the test connections which are necessary to perform LLRTs of SV-702A, B, C, and D.

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C. DESCRIPTION OF THE EVENT:

1. Event:

On 5/24/88, with Unit 1 in Mode 5, it was determined that, contrary to Technical Specification 4.3.1.III, "Containment Isolation Valve Leakage Rate Tests (Type C)", the containment isolation valves associated with penetration E15 (SV-702A, B, C, and D) had been omitted from the type C LLRT program since the valves were installed in 1974.

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

Not Applicable

3. Sequence of Events:

Not Applicable

4. Method of Discovery:

A design change installation led to a review of the Containment Penetration Leakage Rate Testing procedure. The discrepancy was discovered during this review.

5. Personnel Actions and Analysis of Actions:

Not Applicable

6. Safety System Responses:

Not Applicable

D. CAUSE OF THE EVENT:

1. Immediate Cause:

During the initial evaluation for compliance with 10 CFR 50 Appendix J, the valves associated with penetration E15 were omitted from the LLRT program.

2. Intermediate Cause:

a. The original design for penetration E15 did not include provisions for local leakage rate testing.

b. The individuals who initially evaluated Unit 1 for compliance with 10 CFR 50 Appendix J (which is described in SCE's April 1976 submittal regarding the subject) did not adequately review all design disclosure documents to ensure that all penetrations were properly considered for leakage rate testing. A contributing factor to this causal element is that the addition of the penetration was not incorporated into the P&ID until February 10, 1976.

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3. Root Cause:

More than 12 years have elapsed since development of SCE's April 1976 submittal to the NRC concerning compliance with 10 CFR 50, Appendix J. At this late date, it is not possible to definitively ascertain the root causes for the omission of these four valves from the LLRT program.

SCE believes, however, that the root causes for the omission are bounded by the findings of SCE's investigation of the adequacy of engineering and technical support for San Onofre which were identified in an October 3, 1988 submittal to the NRC. The primary causes appear to relate to (1) inadequate engineering resources; (2) the complexity of the organization and the attendant communication difficulties, (3) heavy reliance on engineering contractors, and (4) less than adequate review of SCE's April 1976 submittal regarding 10 CFR 50 Appendix J.

E. CORRECTIVE ACTIONS:

1. Corrective Actions Taken:

- a. LLRTs were performed on SV-702A, B, C, and D. The measured leakage was minor and its contribution to total containment leakage was minimal.
- b. A training program for supervisory personnel performing review of technical and engineering work, has been initiated 1/. This program addresses, in part, the responsibilities of technical reviewers and emphasizes the need to foster a questioning attitude to ensure technical and engineering reviews are properly conducted by cognizant personnel.

2. Planned Corrective Actions:

- a. Penetration E15 will be added to the LLRT program.
- b. The LLRT program will be reviewed to ensure that all penetrations which are subject to Type C testing are included.
- c. A design change will be implemented during the cycle 10 refueling outage to provide LLRT test connections for penetration E15.

1/ As discussed in a letter from K. P. Baskin (SCE) to J. B. Martin (Region V), dated October 8, 1987, this corrective action was initiated in response to an NRC inspection finding concerning weaknesses in the performance of technical work.

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- d. As described in the above root cause discussion, the principle conclusions and recommendations are identified in SCE's October 3, 1988 submittal to the NRC. Corrective actions to address these conclusions include (1) a re-organization with responsibility for design functions and the design basis focused in one department, (2) augmentation of in-house engineering resources and performance of the majority of conceptual engineering in-house, and (3) the establishment of a design basis documentation program to recapture and maintain the design basis.

F. SAFETY SIGNIFICANCE OF THE EVENT:

Although the valves have not been subjected to leakage rate testing, SCE has determined that there is no safety significance to this event because two additional valves (one motor operated valve and one check valve) upstream of the penetration would provide added protection. In addition, the probability of the scenario which would expose these valves to containment atmosphere (i.e., concurrent LOCA and single failure) is very low.

G. ADDITIONAL INFORMATION:

- 1. Component Failure Information:
Not Applicable
- 2. Previous LERs on similar events:
None
- 3. Results of NPRDS Search:
Not Applicable

Southern California Edison Company

SAN ONOFRE NUCLEAR GENERATING STATION

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H. E. MORGAN
STATION MANAGER

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November 29, 1988

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

Subject: Docket No. 50-206
Supplemental Report
Licensee Event Report No. 88-008, Revision 1
San Onofre Nuclear Generating Station, Unit 1

Reference: Letter, H. E. Morgan (SCE) to USNRC Document Control Desk, dated
June 23, 1988

The referenced letter provided a 30-day written Licensee Event Report (LER) involving a condition prohibited by Technical Specifications. In accordance with NUREG 1022, this submittal provides a supplemental LER which includes additional information concerning the cause and corrective actions. Neither the health and safety of plant personnel or the public was affected by this occurrence.

If you require any additional information, please so advise.

Sincerely,

RW Krueger for HE Morgan

Enclosure: LER No. 88-008, Revision 1

cc: F. R. Huey (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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