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ACCESSION NBR:8907200373 DOC.DATE: 89/07/17 NOTARIZED: NO DOCKET #
 FACIL:50-361 San Onofre Nuclear Station, Unit 2, Southern Californ 05000361
 AUTH.NAME AUTHOR AFFILIATION
 MORGAN,H.E. Southern California Edison Co.
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER-87-028-01: on 871206, CPIS actuation due to noise spike. .
 W/8 ltr.

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Southern California Edison Company

SAN ONOFRE NUCLEAR GENERATING STATION

P. O. BOX 128

SAN CLEMENTE, CALIFORNIA 92672

H. E. MORGAN
STATION MANAGER

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July 17, 1989

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

Subject: Docket No. 50-361
30-Day Report
Licensee Event Report No. 87-028, Revision 1
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 a spurious actuation of the Containment Purge Isolation System. This submittal provides revised information concerning the root 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,

H E Morgan

Enclosure: LER No. 87-028, 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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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 4			
Title (4)															

CONTAINMENT PURGE ISOLATION SYSTEM (CPIS) ACTUATION DUE TO NOISE SPIKE

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)	
1 2	0 6	8 7	8 7	---	0 2 8	---	0 1	0 7	1 7	8 9	NONE		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)													
3		<div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <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) </div> <div style="width: 50%;"> <input type="checkbox"/> 20.405(c) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(iii) </div> <div style="width: 50%;"> <input checked="" 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) </div> <div style="width: 50%;"> <input type="checkbox"/> 73.71(b) <input type="checkbox"/> 73.71(c) <input type="checkbox"/> Other (Specify in Abstract below and in text) </div> </div>													

LICENSEE CONTACT FOR THIS LER (12)															
Name										TELEPHONE NUMBER					
H. E. Morgan, Station Manager										AREA CODE 7 1 4 3 6 8 - 6 2 4 1					

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

At 0019 on 12/06/87, with Unit 2 in Mode 3, a spurious actuation of Train "B" CPIS was initiated from Containment Area Radiation Monitor 2RT-7857. The containment purge was not in operation at the time of the actuation. At 0055 on 12/06/87, following verification that containment radiation levels were below the actuation setpoint, CPIS was reset. There was no safety significance to this event since all CPIS components operated in accordance with design.

The actuation was caused by a noise spike in the CPIS actuation circuitry. This was apparent from reviewing the strip chart recorder trace which revealed a series of irregular signal spikes beginning at the time of the actuation.

The irregular signal output observed is indicative of a high impedance most likely due to a poor electrical connection. Removal/reinstallation of the module assembly was the first action taken during troubleshooting. This action immediately eliminated the irregular signal output. It is possible that a poor module-to-cable connection was the source of the high impedance, however, the root cause investigation was unable to definitively determine that such a poor electrical connection had existed. The high impedance signal could not be duplicated during subsequent testing. Inspection of all internal printed circuit connections, calibration of the module, and troubleshooting of power supplies and module-to-detector cabling did not reveal any discrepancies.

At 1040 on 12/23/87, 2RT-7857 was returned to service after further observation, evaluation, and satisfactory completion of a channel functional test.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION UNIT 2	DOCKET NUMBER 05000361	LER NUMBER 87-028-01	PAGE 2 OF 4
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Plant: San Onofre Nuclear Generating Station (SONGS)
Unit: 2
Reactor Vendor: Combustion Engineering
Event Date: 12-06-87
Time: 0019

A. PLANT CONDITIONS AT TIME OF THE EVENT:

Mode: 3, Hot Standby

B. BACKGROUND INFORMATION:

There are two independent Containment Purge Isolation System (CPIS) [VA] trains. Each train is comprised of a containment airborne radiation monitor [RIT], an area radiation monitor and a set of purge isolation valves [ISV]. Each train is actuated by either a remote manual push button, or by one of the monitors sensing high radiation, monitor failure or loss of power.

C. DESCRIPTION OF THE EVENT:

1. Event:

At 0019 on 12/06/87, with Unit 2 in Mode 3, a spurious actuation of Train "B" CPIS was initiated by Containment Area Radiation Monitor 2RT-7857. The containment purge was not in operation at the time of the actuation. At 0055 on 12/06/87, following verification that containment radiation levels were below the actuation setpoint, CPIS was reset.

At 0330 on 12/06/87, 2RT-7857 was declared inoperable because the monitor continued to display an irregular signal output (noise) which had begun with the 0019 actuation.

At approximately 2030 on 12/07/87, following removal/reinstallation of the 2RT-7857 module assembly during troubleshooting, the previously observed irregular signal was no longer present.

At 1040 on 12/23/87, 2RT-7857 was returned to service after further observation, evaluation, and satisfactory completion of a channel functional test.

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

None.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION UNIT 2	DOCKET NUMBER 05000361	LER NUMBER 87-028-01	PAGE 3 OF 4
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3. Sequence of Events:

DATE	TIME	ACTION
12/06/87	0019	CPIS Train "B" actuated from radiation monitor 2RT-7857.
12/06/87	0055	CPIS Train "B" reset.
12/06/87	0330	2RT-7857 declared inoperable.
12/07/87	2030	2RT-7857 module assembly removed/reinstalled during troubleshooting. Previously observed irregular output signal no longer present.
12/23/87	1040	2RT-7857 returned to service.

4. Method of Discovery:

Control Room annunciation of the CPIS actuation.

5. Personnel Actions and Analysis of Actions:

The operators responded properly to the CPIS actuation by verifying proper system operation and verifying that radiation levels inside containment were normal prior to resetting CPIS.

6. Safety System Responses:

All CPIS components functioned as designed.

D. CAUSE OF THE EVENT:

1. Immediate Cause:

The actuation was caused by a noise spike in the CPIS actuation circuitry. This was apparent from reviewing the strip chart recorder trace which revealed a series of irregular signal spikes beginning at the time of the actuation.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION UNIT 2	DOCKET NUMBER 05000361	LER NUMBER 87-028-01	PAGE 4 OF 4
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2. Root Cause:

The irregular signal output observed is indicative of a high impedance most likely due to a poor electrical connection. Removal/reinstallation of the module assembly was the first action taken during troubleshooting. This action immediately eliminated the irregular signal output. It is possible that a poor module-to-cable connection was the source of the high impedance; however, the root cause investigation was unable to definitively determine that such a poor electrical connection had existed. The high impedance signal could not be duplicated during subsequent testing. Inspection of all internal printed circuit connections, calibration of the module, and troubleshooting of power supplies and module-to-detector cabling did not reveal any discrepancies.

E. CORRECTIVE ACTIONS:

The irregular signal output was eliminated when the 2RT-7857 module assembly was removed and subsequently reinstalled during troubleshooting. Since this action was taken, the previously observed electronic noise has not recurred.

F. SAFETY SIGNIFICANCE OF THE EVENT:

There was no safety significance to this event since all CPIS components operated as designed.

G. ADDITIONAL INFORMATION:

1. Component Failure Information:

Not applicable.

2. Previous LERs on Similar Events:

Similar CPIS actuations which were attributed to random electrical noise spikes have occurred previously and were most recently reported in LER 87-024 (Docket No. 50-361).

3. Results of NPRDS Search:

Not applicable.