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ACCESSION NBR:8801190123 DOC.DATE: 88/01/11 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 87-029-00:on 871212,fuel handling isolation sys Train B
 actuation occurred.

W/8 ltr.

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RES/DE/EIB	1 1	RES/DRPS DIR	1 1
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2										DOCKET NUMBER (2) 0 5 0 0 0 3 6 1				PAGE (3) 1 OF 0 4		
TITLE (4) FUEL HANDLING ISOLATION SYSTEM (FHIS) TRAIN "B" ACTUATION																
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)						
MONTH	DAY	YEAR	YEAR	SEQ. NUMBER	REV. NUMBER	MONTH	DAY	YEAR	FACILITY NAMES				DOCKET NUMBER(S)			
1	2	8	7	0	2	9	0	1	1	1	8	8	0 5 0 0 0			
OPERATING MODE (9) 2			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)													
POWER LEVEL (10) 0 0 1			20.402(b)				20.405(c)				<input checked="" type="checkbox"/> 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, NRC Form 366A)	
			20.405(a)(1)(iii)				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 H. E. MORGAN, STATION MANAGER										TELEPHONE NUMBER AREA CODE 7 1 4 3 6 8 1 - 1 6 2 4 1 1						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NFRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NFRDS						
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO				

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

On December 12, 1987, at 0043, with Unit 2 in Mode 2 and the reactor at 1% power, a spurious actuation of Train "B" of the Fuel Handling Isolation System (FHIS) occurred. There was no indication of increased radiation levels in the Fuel Handling Building (FHB). After the FHB airborne activity levels were confirmed to be normal, the FHIS was reset and FHB ventilation was returned to normal. All FHIS train "B" components functioned as designed.

At the time of the FHIS actuation, the Containment Purge Isolation System (CPIS) Train "B" Monitor was actuated as a part of the monthly channel functional surveillance test. The FHIS actuation has been attributed to an induced voltage spike which can occur when the Train "B" CPIS monitor actuates. As previously reported, the CPIS and FHIS wiring is routed in common wire bundles. It is believed that actuation of the CPIS circuit, which causes de-energization of relay operating coils, is sufficient to induce a voltage spike in the other circuit's wiring.

The cabinet housing the CPIS and FHIS will be modified to separate the wiring currently routed in common bundles.

There was no safety significance to this event as all FHIS Train "B" components operated in accordance with design.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION UNIT 2	DOCKET NUMBER 05000361	LER NUMBER 87-029-00	PAGE 2 OF 4
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Plant: San Onofre Nuclear Generating Station (SONGS)
Unit: 2
Reactor Vendor: Combustion Engineering
Event Date: 12/12/87
Time: 0043

A. PLANT CONDITIONS AT THE TIME OF THE EVENT:

Mode: 2, Startup

B. BACKGROUND INFORMATION:

The Fuel Handling Isolation System (FHIS) (EIIS system Code VG) consists of two independent "trains" of radiation monitors (2RT-7822 and 2RT-7823) (EIIS Component Code RIT), associated dampers and recirculation filtration units. Each train is actuated by either a remote manual push button or by one of the monitors sensing high radiation, instrument failure, or loss of power.

C. DESCRIPTION OF THE EVENT:

1. Event:

On December 12, 1987, at 0043, with Unit 2 in Mode 2 and the reactor at 1% power, a spurious actuation of Train "B" of the Fuel Handling Isolation System (FHIS) occurred. There was no indication of increased radiation levels in the Fuel Handling Building (FHB). After the FHB airborne activity levels were confirmed to be normal, the FHIS was reset and FHB ventilation was returned to normal. All FHIS train "B" components functioned as designed.

At the time of the actuation, the Containment Purge Isolation System (CPIS) Train "B" Monitor was actuated as a part of the monthly channel functional surveillance test. The circuitry for the CPIS monitor shares a cabinet with the FHIS monitor circuitry.

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

None.

3. Sequence of Events:

<u>TIME</u>	<u>ACTION</u>
0043	FHIS Train "B" actuates when Train "B" CPIS is actuated for testing.
0105	After verifying that FHB airborne activity levels are normal, FHIS is reset and ventilation is returned to normal in the FHB.

4. Method of Discovery:

Control Room indications and alarms alerted the operators of the FHIS actuation.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION UNIT 2	DOCKET NUMBER 05000361	LER NUMBER 87-029-00	PAGE 3 OF 4
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5. Personnel Actions and Analysis of Actions:

The operators responded properly to the FHIS actuation by verifying proper system operation and ensuring FHB airborne activity levels were below the actuation set point prior to resetting FHIS and returning the FHB ventilation to normal.

6. Safety System Responses:

All Train "B" FHIS components functioned as designed.

D. CAUSE OF THE EVENT:

1. Immediate Cause:

De-energization of the CPIS relays.

2. Root Cause:

FHIS and CPIS wiring of the same train are routed in common wire bundles. Due to the close proximity of the wiring, it is believed that an actuation signal can be induced in the FHIS circuitry as a result of a voltage spike in the CPIS circuitry upon a CPIS actuation, or in the CPIS circuitry upon a FHIS actuation. These voltage spikes are generated by certain relays when the relay operating coil is de-energized.

E. CORRECTIVE ACTIONS:

1. Corrective Actions Taken:

In order to minimize the recurrence of spurious FHIS actuations until the following planned corrective actions are completed, the appropriate train of FHIS or CPIS will be bypassed, when appropriate, during CPIS or FHIS testing or other activity having a potential to cause a spurious actuation.

2. Planned Corrective Actions:

The cabinet housing the CPIS and FHIS will be modified to separate the wiring currently routed in common bundles.

F. SAFETY SIGNIFICANCE OF THE EVENT:

There is no safety significance to this event as all FHIS Train "B" components operated in accordance with design.

G. ADDITIONAL INFORMATION:

1. Component Failure Information:

Not Applicable

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION UNIT 2	DOCKET NUMBER 05000361	LER NUMBER 87-029-00	PAGE 4 OF 4
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2. Previous LERs on Similar Events:

a. LER 87-021 (Docket No. 50-361)

De-energization of a Unit 2 CPIS Train "B" alarm relay during implementation of a design change is believed to have induced an actuation signal in the Unit 2 FHIS Train "B" circuitry.

b. LER 87-010 (Docket No. 50-362)

De-energization of a Unit 3 CPIS Train "B" alarm relay during implementation of a design change is believed to have induced an actuation signal in the Unit 3 FHIS Train "B" circuitry.

c. LER 87-003 (Docket No. 50-361)

A spurious actuation of FHIS Train "B" occurred when the CPIS Train "B" reset button was depressed, resetting the CPIS relays and inducing a FHIS actuation signal. The wiring associated with the CPIS reset button was rerouted so that it is no longer adjacent to the FHIS relay wiring.

Southern California Edison Company

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January 11, 1988

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

Subject: Docket No. 50-361
30-Day Report
Licensee Event Report No. 87-029
San Onofre Nuclear Generating Station, Unit 2

Pursuant to 10 CFR 50.73(a)(2)(iv), this submittal provides the required 30-day written licensee Event Report (LER) for an occurrence involving a spurious actuation of the Fuel Handling Building Isolation System. 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. 87-029

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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