

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8710080399 DOC. DATE: 87/09/29 NOTARIZED: NO DOCKET #
 FACIL: 50-362 San Onofre Nuclear Station, Unit 3, Southern California 05000362
 AUTH. NAME AUTHOR AFFILIATION
 MORGAN, H. E. Southern California Edison Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-015-00: on 870830, containment purge isolation sys
 actuated on instrument failure signal from containment
 airborne monitor. Caused by photomultiplier (PM) tube
 failure. PM tube replaced & tested satisfactory. W/B ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: ELD Chandler 1cy. 05000362

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD5 LA	1 1	PD5 PD	1 1
	ROOD, H	1 1		
INTERNAL:	ACRS MICHELSON	1 1	ACRS MOELLER	2 2
	AEOD/DOA	1 1	AEOD/DSP/NAS	1 1
	AEOD/DSP/ROAB	2 2	AEOD/DSP/TPAB	1 1
	DEDRO	1 1	NRR/DEST/ADS	1 0
	NRR/DEST/CEB	1 1	NRR/DEST/ELB	1 1
	NRR/DEST/ICSB	1 1	NRR/DEST/MEB	1 1
	NRR/DEST/MTB	1 1	NRR/DEST/PSB	1 1
	NRR/DEST/RSB	1 1	NRR/DEST/SGB	1 1
	NRR/DLPQ/HFB	1 1	NRR/DLPQ/QAB	1 1
	NRR/DOEA/EAB	1 1	NRR/DREP/RAB	1 1
	NRR/DREP/RPB	2 2	NRR/DRIS/SIB	1 1
	NRR/PMAS/ILRB	1 1	<u>REG FILE</u> 02	1 1
	RES DEPY GI	1 1	RES TELFORD, J	1 1
	RES/DE/EIB	1 1	RGN5 FILE 01	1 1
EXTERNAL:	EG&G GROH, M	5 5	H ST LOBBY WARD	1 1
	LPDR	1 1	NRC PDR	1 1
	NSIC HARRIS, J	1 1	NSIC MAYS, G	1 1
NOTES:		1 1		

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 3	DOCKET NUMBER (2) 0 5 0 0 0 3 6 2	PAGE (3) 1 OF 0 4
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TITLE (4)
CONTAINMENT PURGE ISOLATION SYSTEM ACTUATION DUE TO FAILURE OF AIRBORNE MONITOR 3RT-7807

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)
0 8	3 0	8 7	8 7	0 1 5	0 0	0 9	2 9	8 7			0 5 0 0 0
DOCKET NUMBER(S) 0 5 0 0 0											

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)											
POWER LEVEL (10) 1 0 0	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, 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 - 6 2 4 1

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
X	V A	R I T	N 3 0 5	YES					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

On 8/30/87, at 0636, Containment Purge Isolation System (CPIS) Train "B" actuated on an instrument failure signal from Containment Airborne Monitor 3RT-7807 (Iodine Channel). There was no purge in progress; therefore, CPIS components did not actuate. At 1051, the failed monitor was removed from service, and CPIS was reset.

It was determined that the detector failed due to a failure of the photomultiplier (PM) tube. CPIS Train "B" was returned to operable status on 9/8/87, following completion of PM tube replacement and satisfactory functional testing of the monitor.

A calculation of the failure rate of the PM tubes at San Onofre and a review of vendor and industry data determined that the experienced failure rate is well within the expected failure rate typical for this equipment. Therefore, additional corrective action is not warranted at this time.

There was no safety significance to this event since, had a containment purge been in progress, the instrument failure would have resulted in CPIS performing its safety function, as designed.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION UNIT 3	DOCKET NUMBER 05000362	LER NUMBER 87-015-00	PAGE 2 OF 4
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Plant: San Onofre Nuclear Generating Station (SONGS)
Unit: 3
Reactor Vendor: Combustion Engineering
Event Date: 08-30-87
Time: 0636

A. Plant Conditions at Time of the Event:

Unit 3 was operating at 100% power. All containment purge valves were closed.

B. Background Information:

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

C. Description of the Event:

1. Event:

On 8/30/87, at 0636, Containment Purge Isolation System (CPIS) Train "B" actuated on an instrument failure signal from Containment Airborne Monitor 3RT-7807 (Iodine Channel). Because there was no purge in progress, only the logic circuit actuated, and there was no actuation of CPIS components. At 1051, the failed monitor was removed from service, and CPIS was reset.

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

None.

3. Sequence of Events:

<u>TIME</u>	<u>ACTION</u>
8/30/87 at 0636	CPIS Train "B" actuated.
8/30/87 at 1051	Monitor 3RT-7807 removed from service and CPIS reset.
9/8/87 at 0836	Returned CPIS Train "B" to operable status following repair and testing of 3RT-7807.

4. Method of Discovery:

The failure of 3RT-7807 was indicated by Control Room annunciation of the CPIS actuation.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION	DOCKET NUMBER	LER NUMBER	PAGE
UNIT 3	05000362	87-015-00	3 OF 4

5. Personnel Actions and Analysis of Actions:

In accordance with established procedures, licensed operators verified that radiation levels inside containment were normal prior to resetting CPIS.

6. Safety System Responses:

The containment purge valves were closed at the time of the actuation. Therefore, no safety system components actuated.

D. Cause of the Event:

1. Immediate Cause:

The iodine channel to monitor 3RT-7807 failed low resulting in a CPIS Train "B" actuation on an instrument failure signal.

2. Intermediate Cause:

Troubleshooting of 3RT-7807 revealed a failed detector photomultiplier (PM) tube. This has been determined to be a random failure.

3. Root Cause:

The failure rate for the PM tube, based on experience at SONGS Units 2 and 3, was calculated to be 7.8 failures per 10E+6 hours of service. A review of the failure rate of scintillation monitors established in IEEE Std. 500, Reliability Data, indicates a range from 20 to 33 failures per 10E+6 hours of service is typical for this equipment. The manufacturer of the PM tube has indicated that it has experienced a failure rate equivalent to approximately 38 failures per 10E+6 hours. Since the current failure rate of this type of equipment at SONGS is significantly less than the expected rate of failure, additional root cause evaluation is not required at this time.

We will continue to monitor this equipment in accordance with our root cause program.

E. Corrective Actions:

1. Corrective Actions Taken:

The monitor was repaired and a functional test was satisfactorily performed.

2. Planned Corrective Actions:

Additional corrective action is not warranted at this time.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION UNIT 3	DOCKET NUMBER 05000362	LER NUMBER 87-015-00	PAGE 4 OF 4
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F. Safety Significance of the Event:

There was no safety significance to this event since, had a containment purge been in progress, the instrument failure would have resulted in CPIS performing its safety function, as designed.

G. Additional Information:

1. Component Failure Information:

Monitor 3RT-7807 is supplied by Nuclear Measurements Corp. The PM tube is manufactured by EMI Electron Tubes, model number 9896B.

2. Previous LERs on Similar Events:

The following LERs reported CPIS actuations caused by instrument failures. None of these LERs involved detector PM tube failures.

Docket No. 50-361

LER 85-036
LER 84-011
LER 84-062

Docket No. 50-362

LER 87-006
LER 86-008
LER 85-005
LER 85-011
LER 85-014

Southern California Edison Company

SAN ONOFRE NUCLEAR GENERATING STATION

P. O. BOX 128

SAN CLEMENTE, CALIFORNIA 92672

H. E. MORGAN
STATION MANAGER

TELEPHONE
(714) 368-6241

September 29, 1987

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

Subject: Docket No. 50-362
30-Day Report
Licensee Event Report No. 87-015
San Onofre Nuclear Generating Station, Unit 3

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 the actuation of the Containment Purge Isolation System. Neither the health and safety of plant personnel nor the health and safety of the public was affected by this event.

If you require any additional information, please so advise.

Sincerely,

H. E. Morgan

Enclosure: LER No. 87-015

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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