

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

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ACCESSION NBR:8803280046 DOC.DATE: 88/03/18 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 88-005-00:on 880220,spurious Train A toxic gas isolation
 sys actuations occurred due to equipment failure.

W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

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	ID CODE/NAME		LTTR	ENCL		ID CODE/NAME		LTTR	ENCL
	PD5 LA		1	1		PD5 PD		1	1
	HICKMAN,D		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
	ARM/DCTS/DAB		1	1		DEDRO		1	1
	NRR/DEST/ADS7E4		1	0		NRR/DEST/CEB8H7		1	1
	NRR/DEST/ESB 8D		1	1		NRR/DEST/ICSB7A		1	1
	NRR/DEST/MEB9H3		1	1		NRR/DEST/MTB 9H		1	1
	NRR/DEST/PSB8D1		1	1		NRR/DEST/RSB 8E		1	1
	NRR/DEST/SGB 8D		1	1		NRR/DLPQ/HFB10D		1	1
	NRR/DLPQ/QAB10A		1	1		NRR/DOEA/EAB11E		1	1
	NRR/DREP/RAB10A		1	1		NRR/DREP/RPB10A		2	2
	NRR/DRIS/SIB9A1		1	1		NRR/PMAS/ILRB12		1	1
	<u>REG FILE</u> 02		1	1		RES TELFORD,J		1	1
	RES/DE/EIB		1	1		RES/DRPS DIR		1	1
	RGN5 FILE 01		1	1					
EXTERNAL:	EG&G GROH,M		4	4		FORD BLDG HOY,A		1	1
	H ST LOBBY WARD		1	1		LPDR		1	1
	NRC PDR		1	1		NSIC HARRIS,J		1	1
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Facility Name (1)						Docket Number (2)							Page (3)			
SAN GNOFRE NUCLEAR GENERATING STATION, UNIT 2						0 5 0 0 0 3 6 1							1 of 0 5			
Title (4) SPURIOUS TRAIN 'A' TOXIC GAS ISOLATION SYSTEM ACTUATIONS DUE TO EQUIPMENT FAILURE																
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)		
				---		---					SONGS, UNIT 3			0 5 0 0 0 3 6 2		
0 2	2 0	8 8	8 8		0 0 5		0 0							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)													
POWER LEVEL (10) 0 8 0 //////////////////////////////////// //////////////////////////////////// //////////////////////////////////// //////////////////////////////////// ////////////////////////////////////			<input type="checkbox"/> 20.402(b)		<input type="checkbox"/> 20.405(c)		<input checked="" type="checkbox"/> X		<input type="checkbox"/> 50.73(a)(2)(iv)			<input type="checkbox"/> 73.71(b)				
			<input type="checkbox"/> 20.405(a)(1)(i)		<input type="checkbox"/> 50.36(c)(1)		<input type="checkbox"/>		<input type="checkbox"/> 50.73(a)(2)(v)			<input type="checkbox"/> 73.71(c)				
			<input type="checkbox"/> 20.405(a)(1)(ii)		<input type="checkbox"/> 50.36(c)(2)		<input type="checkbox"/>		<input type="checkbox"/> 50.73(a)(2)(vii)			<input type="checkbox"/> Other (Specify in Abstract below and in text)				
			<input type="checkbox"/> 20.405(a)(1)(iii)		<input type="checkbox"/> 50.73(a)(2)(i)		<input type="checkbox"/>		<input type="checkbox"/> 50.73(a)(2)(viii)(A)							
			<input type="checkbox"/> 20.405(a)(1)(iv)		<input type="checkbox"/> 50.73(a)(2)(ii)		<input type="checkbox"/>		<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
<input type="checkbox"/> 20.405(a)(1)(v)		<input type="checkbox"/> 50.73(a)(2)(iii)		<input type="checkbox"/>		<input type="checkbox"/> 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	MANUFAC- TURER	REPORTABLE TO NPRDS	//////// //////// //////// ////////	CAUSE	SYSTEM	COMPONENT	MANUFAC- TURER	REPORTABLE TO NPRDS	//////// //////// //////// ////////					
SUPPLEMENTAL REPORT EXPECTED (14)										Expected Submission Date (15)		Month	Day	Year		
<input checked="" type="checkbox"/> Yes (If yes, complete EXPECTED SUBMISSION DATE) <input type="checkbox"/> NO												0 7	2 9	8 8		
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																

At 1905 on February 20, 1988, with Unit 2 in Mode 1 at 80% reactor power and Unit 3 in Mode 3, Train 'A' of the Toxic Gas Isolation System (TGIS) initiated both trains of the Control Room Emergency Air Cleanup System (CREACUS) on a spurious high ammonia gas level. Similarly, at 2348 on February 21, 1988, with Unit 2 in Mode 1 at 100% reactor power and Unit 3 in Mode 2 and at 0241 on February 22, 1988, with Units 2 and 3 in Mode 1 at 100% and 6% reactor power, respectively, Train 'A' of TGIS initiated both trains of CREACUS on a spurious high ammonia gas level. CREACUS operated in the isolation mode as designed following each of the actuations, while it was determined that no ammonia was present. There is no safety significance to this event since all TGIS and CREACUS components operated as designed.

Intermittent spiking of the ammonia analyzer has been determined to be the cause of the actuations. The deficient ammonia analyzer was replaced. Following successful testing and monitoring of the analyzer, TGIS Train 'A' was returned to service at 0130 on February 29, 1988.

An evaluation of the current state of technology in regard to TGIS monitor reliability will be performed to determine if a superior design is available. Appropriate action will be taken based upon this evaluation. In addition, a program will be established to replace the analyzers on an annual to biannual basis. Investigation into the root cause of the intermittent spiking of the ammonia analyzer will be performed during repair of the deficient analyzer and a supplemental LER will be submitted.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION UNIT 2	DOCKET NUMBER 05000361	LER NUMBER 88-005-00	PAGE 2 OF 5
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Plant: San Onofre Nuclear Generating Station (SONGS)
 Units: 2 and 3
 Reactor Vendor: Combustion Engineering
 Event Dates: February 20, 21 and 22, 1988

A. PLANT CONDITIONS AT THE TIME OF THE EVENT:

Modes: 1, Power Operation - Unit 2
 3, Hot Standby - Unit 3

B. BACKGROUND INFORMATION:

The common Unit 2 and 3 control room is designed to be automatically isolated by the Control Room Emergency Air Cleanup System (CREACUS) (EIIS System Code VI) to protect personnel from potential outside airborne contamination. CREACUS is started in the isolation mode when the Toxic Gas Isolation System (TGIS) (EIIS System Code VI) detects chlorine, ammonia or butane (hydrocarbon) gas in the outside air intake. Technical Specification Limiting Condition for Operation (LCO) 3.3.2, "Engineered Safety Features Actuation System," establishes TGIS set point limits for each of these gases.

There are two independent trains of both CREACUS and TGIS. In the event that either TGIS train detects a gas concentration above the LCO limits, TGIS starts CREACUS in the isolation mode. Each CREACUS train then closes all control room air intake and exhaust pathways, and recirculates the air inside the control room spaces through HEPA filters and charcoal adsorbers.

C. DESCRIPTION OF THE EVENT:

1. Event:

At 1905 on February 20, 1988, with Unit 2 in Mode 1 at 80% reactor power and Unit 3 in Mode 3, Train 'A' of the Toxic Gas Isolation System (TGIS) initiated both trains of the Control Room Emergency Air Cleanup System (CREACUS) on a spurious high ammonia gas level. Similarly, at 2348 on February 21, 1988, with Unit 2 in Mode 1 at 100% reactor power and Unit 3 in Mode 2 and at 0241 on February 22, 1988, with Units 2 and 3 in Mode 1 at 100% and 6% reactor power, respectively, Train 'A' of TGIS initiated both trains of CREACUS on a spurious high ammonia gas level. CREACUS operated in the isolation mode as designed following each of the actuations, while it was determined that no ammonia was present.

At 0325 on February 22, 1988, TGIS Train 'A' was declared inoperable and an investigation into the cause of the actuations was initiated.

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2. Inoperable Structures, Systems or Components that Contributed to the Event:
None.

3. Sequence of Events:

DATE	TIME	ACTION
2/20	1905	TGIS Train 'A' actuates CREACUS on spurious high ammonia gas level.
	1950	TGIS Train 'A' reset after determining that no ammonia is present.
	2005	Ventilation lineup returned to normal.
2/21	2348	TGIS Train 'A' actuates CREACUS on spurious high ammonia gas level.
	2351	TGIS Train 'A' reset after determining that no ammonia is present.
2/22	0003	Ventilation lineup returned to normal.
	0241	TGIS Train 'A' actuates CREACUS on spurious high ammonia gas level.
	0325	TGIS Train 'A' declared inoperable.
2/29	0130	TGIS Train 'A' declared operable.

4. Method of Discovery:

Control room annunciation of TGIS actuation and CREACUS operation in the isolation mode.

5. Personnel Actions and Analysis of Actions:

The operators responded properly to each actuation by 1) verifying proper operation of both CREACUS trains, and 2) verifying control room ammonia gas levels were normal prior to resetting the TGIS and returning the ventilation lineup to normal.

6. Safety System Responses:

Both trains of CREACUS started and operated as designed.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION
UNIT 2

DOCKET NUMBER
05000361

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D. CAUSE OF THE EVENT:

1. Immediate Cause:

Intermittent spiking of the ammonia analyzer (EIIS Component Code 45) has been determined to be the cause of the TGIS Train 'A' actuations.

2. Root Cause:

An investigation into the root cause of the intermittent spiking of the ammonia analyzer will be performed during repair of the deficient analyzer and a supplemental LER will be submitted.

E. CORRECTIVE ACTIONS:

1. Corrective Actions Completed:

- a. A recorder was connected to the output of the deficient ammonia analyzer output for approximately two days. Periodic spiking was observed prompting the replacement of the analyzer. Following successful testing and monitoring of the newly installed analyzer output, TGIS Train 'A' was returned to service. Additionally, in the two week period since returning the analyzer to service, no spiking has been observed.

2. Planned Corrective Actions:

- a. An evaluation of the current state of technology in regard to TGIS monitor reliability will be performed to determine if a superior design is available. Appropriate action will be taken based upon this evaluation.
- b. A program will be established to replace the ammonia analyzers for each TGIS channel on an annual to biannual basis.
- c. A supplemental LER will be submitted describing the results of the root cause investigation.

F. SAFETY SIGNIFICANCE OF THE EVENT:

There is no safety significance to this event since all TGIS and CREACUS components operated as designed.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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G. ADDITIONAL INFORMATION:

1. Previous LER on Similar Event:

LER 85-043 (Docket No. 50-361) reported a Train 'A' TGIS actuation on high ammonia level resulting from the failure of the ammonia analyzer. As corrective action, the power supply, a potentiometer, and a motor source assembly were replaced and the analyzer was successfully tested and returned to service.

Southern California Edison Company

SAN ONOFRE NUCLEAR GENERATING STATION

P. O. BOX 128

SAN CLEMENTE, CALIFORNIA 92672

H. E. MORGAN
STATION MANAGER

March 18, 1988

TELEPHONE
(714) 368-6241

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

Subject: Docket No. 50-361
30-Day Report
Licensee Event Report No. 88-005
San Onofre Nuclear Generating Station, Units 2 and 3

Pursuant to 10 CFR 50.73(a)(2)(iv), this submittal provides the required 30-day written Licensee Event Report (LER) for occurrences involving spurious actuations of the Toxic Gas Isolation System. Since these events involved systems shared between Units 2 and 3, a single report is being submitted in accordance with NUREG-1022. Neither the health and safety of plant personnel nor the health and safety of the public was affected by these occurrences.

If you require any additional information, please so advise.

Sincerely,

HE Morgan

Enclosure: LER No. 88-005

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)

*IE22
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