

Southern California Edison Company

SAN ONOFRE NUCLEAR GENERATING STATION

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STATION MANAGER

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April 24, 1991

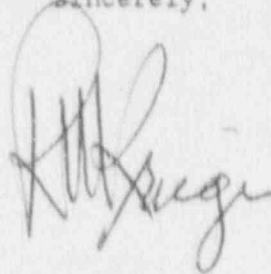
U. S. Nuclear Regulatory Commission
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Washington, D.C. 20555

Subject: Docket No. 50-361
30-Day Report
Licensee Event Report No. 91-006
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 the Toxic Gas Isolation System (TGIS). Since this occurrence involves areas common to both in Units 2 and 3, a single report for Unit 2 is being submitted in accordance with NUREG-1022. Neither the health nor the safety of plant personnel or the public was affected by this occurrence.

If you require any additional information, please so advise.

Sincerely,



Enclosure: LER No. 91-006

cc: C. W. Caldwell (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) SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2							Docket Number (2) 0 5 0 0 0 3 6 3			Page (3) of 0 4				
Title (4) INADVERTENT TOXIC GAS ISOLATION SYSTEM (TGIS) ACTUATION DURING THE PERFORMANCE OF MAINTENANCE TROUBLESHOOTING														
EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)					
Month	Day	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)					
0 3	2 5	9 1	0 0 6	0 0	0 3	2 4	9 1	SONGS, UNIT 3	0 5 0 0 0 3 6 2					
OPERATING MODE (9) 3			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)											
POWER LEVEL (10) 0 6 0		20.402(b)		20.405(c)		<input checked="" type="checkbox"/> 50.73(a)(2)(iv)		70.71(b)						
		20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		70.71(c)						
		20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		Other (Specify in						
		20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		Abstract below and						
		20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(E)		in text)						
		20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)								
LICENSEE CONTACT FOR THIS LER (12)														
Name R. W. Krieger, Station Manager							TELEPHONE NUMBER AREA CODE: 7 3 4 6 8 - 6 2 5 5							
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)														
CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NRRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NRRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NRRDS
SUPPLEMENTAL REPORT EXPECTED (14)										Expected Submission Date (15)				
Yes (If yes, complete EXPECTED SUBMISSION DATE)										Month Day Year				
<input checked="" type="checkbox"/> NO														
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)														

At 1530 on March 25, 1991, with Unit 2 at 60% power and Unit 3 at 100% power, Toxic Gas Isolation System (TGIS) Train "A" actuated on high ammonia gas level. All TGIS Train "A" components were verified to have actuated as required.

The actuation occurred while troubleshooting was being performed on the Train "A" ammonia channel, which had failed on March 24, 1991. A Maintenance technician inadvertently bumped the jumper used to bypass the TGIS actuation circuitry, resulting in the jumper being momentarily dislodged. Since the ammonia level had been increased above the actuation setpoint to perform the troubleshooting, an actuation on high ammonia occurred.

The root cause of this event is that the location of the jumper used for bypassing the TGIS actuation circuitry was adjacent to the area requiring access during maintenance activities. Therefore, a potential existed for disturbance of the jumper during these activities.

For corrective actions: 1) appropriate disciplinary action has been administered to the technician involved in this event, 2) this event has been reviewed with appropriate Maintenance personnel, and 3) the bypass jumper, when installed in the future, will be relocated to an area less likely to be affected by maintenance activities.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOPRE NUCLEAR GENERATION STATION	DOCKET NUMBER	LER NUMBER	PAGE
UNIT 2	05000361	91-006-00	2 of 4

Plant: San Onofre Nuclear Generating Station
Units: Two and Three
Reactor Vendor: Combustion Engineering
Event Date: 03-25-91

A. CONDITIONS AT TIME OF THE EVENT:

Mode: 1, Power Operation (Units 2 and 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) [VI] to protect personnel from potential outside airborne radiation or toxic gas contamination. CREACUS is started in the isolation mode when the Toxic Gas Isolation System (TGIS) [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 operability requirements.

There are two independent trains of both CREACUS and TGIS. Each train is actuated by either a remote manual push button switch (PB) [HS], a gas concentration sensed by any of the gas detectors [DET] which is above the actuation setpoint, or a loss of power. Each CREACUS train closes all control room air intake and exhaust pathways [DMP], and recirculates the air inside the control room spaces through HEPA filters [FLT] and charcoal adsorbers [ADS].

C. DESCRIPTION OF THE EVENT:

1. Event:

At 1530 on March 25, 1991, with Unit 2 at 60% power and Unit 3 at 100% power, TGIS Train "A" actuated on high ammonia gas level. All TGIS Train "A" components were verified to have actuated as required.

At the time of the actuation, troubleshooting was being performed on the Train "A" ammonia channel, which had failed low on March 24, 1991. Specifically, a Maintenance technician (utility, non-licensed) was disconnecting the Digital Multimeter (DMM) used during troubleshooting from its connection locations internal to the TGIS cabinet. During this process, the technician inadvertently bumped one of the connections of the jumper used to bypass the TGIS actuation circuitry. This resulted in the jumper becoming momentarily dislodged. The technician quickly re-connected the jumper; however, since the ammonia level had been increased above

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION UNIT 2	DOCKET NUMBER 05000361	LER NUMBER 91-006-00	PAGE 3 of 4
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the actuation setpoint to perform the troubleshooting, an actuation on high ammonia occurred.

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

Not applicable.

3. Sequence of Events:

<u>DATE</u>	<u>TIME</u>	<u>ACTION</u>
3/24/91	0800	TGIS Train "A" ammonia channel fails low.
3/25/91	1530	TGIS Train "A" actuation on high ammonia level during troubleshooting.
3/25/91	1600	Control room ventilation lineup returned to normal.
3/26/91	0330	TGIS Train "A" returned to service.

4. Method of Discovery:

Control room alarms and indications alerted the operators of the TGIS actuation.

5. Personnel Actions and Analysis of Actions:

The operators responded properly to the TGIS actuation by 1) verifying proper system operation and 2) determining that the ammonia level was normal prior to returning TGIS to the "standby" mode and restoring normal control room ventilation.

6. Safety System Responses:

The TGIS and CREACUS systems functioned in accordance with their design.

D. CAUSE OF THE EVENT:

1. Immediate Cause:

During troubleshooting of the TGIS Train "A" ammonia channel, the Maintenance technician inadvertently bumped one of the connections of the jumper used to bypass the actuation circuitry. This resulted in the jumper being momentarily dislodged. Since the ammonia level had been increased above the actuation setpoint to perform the troubleshooting, an actuation on high ammonia occurred.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

SAN ONOFRE NUCLEAR GENERATION STATION	DOCKET NUMBER	LER NUMBER	PAGE
UNIT 2	05000361	91-006-00	4 of 4

2. Root Cause:

The location of the jumper used for bypassing the TGIS actuation circuitry was adjacent to the area requiring access during maintenance activities. Therefore, a potential existed for disturbance of the jumper during these activities.

E. CORRECTIVE ACTIONS:

1. Corrective Actions Taken:

- a. Appropriate disciplinary action has been administered to the technician involved in this event.
- b. This event has been reviewed with appropriate Maintenance personnel.

2. Planned Corrective Action:

The bypass jumper, when installed in the future, will be relocated to an area less likely to be affected by maintenance activities. Specifically, the inputs on the terminal strip to which the bypass jumper is connected will be relocated to the opposite side of the strip. When this is completed, all the terminal strip inputs used for connecting test equipment will be on one side of the terminal strip and the bypass jumper will be on the other. Therefore, installation and removal of the test equipment (such as a DMK) should not interfere with the bypass jumper.

F. SAFETY SIGNIFICANCE OF THE EVENT:

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

G. ADDITIONAL INFORMATION:

1. Component Failure Information:

Not applicable.

2. Previous LERs for Similar Events:

LER 86-034 (Docket No. 50-361) reported two TGIS actuations caused by the bypass jumper being dislodged during the performance of maintenance activities. As a result of these actuations, the design of the bypass jumper was changed and the location of the jumper was moved to minimize recurrence. The event being reported in this LER is the first TGIS actuation caused by the bypass jumper since these corrective actions.