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ACCESSION NBR:8912070296 DOC.DATE: 89/12/01 NOTARIZED: NO DOCKET #
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GREBEL,T.L. Pacific Gas & Electric Co.
SHIFFER,J.D. Pacific Gas & Electric Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-012-00:on 891102,fuel handling bldg ventilation transfer to iodine removal mode due to personnel error. W/8 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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A04

Pacific Gas and Electric Company

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James D. Shiffer
Vice President
Nuclear Power Generation

December 1, 1989

PG&E Letter No. DCL-89-507

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

Re: Docket No. 50-275, OL-DPR-80
Diablo Canyon Unit 1
Licensee Event Report 1-89-012-00
Fuel Handling Building Ventilation System Transfer to the Iodine Removal Mode Due to Personnel Error

Gentlemen:

Pursuant to 10 CFR 50.73(a)(2)(iv), PG&E is submitting the enclosed Licensee Event Report (LER) regarding the Fuel Handling Building Ventilation System transfer from normal mode to the iodine removal mode, an Engineered Safety Feature (ESF) actuation.

This event has in no way affected the public's health and safety.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,

J. D. Shiffer

cc: A. P. Hodgdon
J. B. Martin
M. M. Mendonca
P. P. Narbut
H. Rood
CPUC
Diablo Distribution
INPO

Enclosure

DC1-89-OP-N102

2963S/0075K/DY/2246

IE22
1/1

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
DIABLO CANYON UNIT 1	0 5 0 0 0 2 7 5	1 OF 5

TITLE (4) FUEL HANDLING BUILDING VENTILATION TRANSFER TO IODINE REMOVAL MODE DUE TO PERSONNEL ERROR

EVENT DATA (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 (5)
1 1	0 2	8 9	8 9	0 1 2	0 0	1 2	0 1	8 9		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR : (11)
POWER LEVEL (10)	0 0 0	X 10 CFR 50.73(a)(2)(iv)
		OTHER (Specify in Abstract below and in text, NRC Form 366A)

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (AREA CODE)
TERENCE L. GREBEL, REGULATORY COMPLIANCE SUPERVISOR	805 595-4720

COMPLETE ONE LINE FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (16)

On November 2, 1989, at 0948 PST, an Engineered Safety Feature (ESF) actuation occurred when the Fuel Handling Building Ventilation System (FHBVS) transferred from the normal mode to the iodine removal mode of operation. A four hour non-emergency report was made at 1035 PST as required by 10 CFR 50.72.

Licensed plant operators were in the process of removing instrument inverter IY-13A from service to allow the performance of electrical preventative maintenance on the inverter. The operators placed instrument AC panel PY-13A on its back-up power source. They proceeded to remove the associated inverter IY-13A from service. However, they inadvertently opened the output breaker on IY-13 instead of IY-13A, deenergizing instrument AC panel PY-13. This action deenergized radiation monitor RM-59, causing the FHBVS to transfer from the normal mode to the iodine removal mode of operation, an ESF actuation.

The cause of this event is personnel error due to operator inattention. To prevent recurrence, the labelling on all inverters will be upgraded, operating procedure OP J-10:III, "Instrument AC System, Shutdown and Clearing," will be revised, an Operations Incident Summary has been issued, and caution signs have been installed on appropriate inverter/distribution panels.

I. Plant Conditions

Unit 1 was defueled (Refueling).

II. Descrhption of Event

A. Event:

On November 2, 1989, licensed plant operators were in the process of removing instrument inverter IY-13A (INVT) from service to allow the performance of electrical preventative maintenance on the inverter. The operators first placed instrument AC panel PY-13A on its back-up power source using operating procedure OP J-10:IV, "Instrument AC System - Transfer of Panel Power Supply". They proceeded to remove the associated inverter, IY-13A, from service, using instructions posted on the inverter panel for guidance. However, they inadvertently opened the output breaker (the first step in the sequence to remove an instrument inverter from service) on IY-13 instead of IY-13A, deenergizing instrument AC panel PY-13. This action deenergized the New Fuel Storage Area Radiation Monitor, RM-59, causing the Fuel Handling Building Ventilation System (FHBVS)(VG) to transfer from the normal mode to the iodine removal mode of operation, an Engineered Safety Feature (ESF) actuation.

The operators at the inverter immediately recognized their error, notified the control room, and returned IY-13 to service, restoring power to instrument AC panel PY-13.

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

None.

C. Dates and approximate times for major occurrences:

1.	Nov. 2, 1989, at 0945 PST:	Instrument AC panel PY-13A is placed on back-up power source.
2.	Nov. 2, 1989, at 0948 PST:	Output breaker for IY-13 is opened inadvertently instead of the intended breaker on IY-13A.
3.	Nov. 2, 1989, at 0948 PST:	Event date: The FHBVS transfers to iodine removal mode as designed when RM-59 is deenergized.

4. Nov. 2, 1989, at 0950 PST: Instrument AC Inverter IY-13 is returned to service, FHBVS is returned to normal mode.

5. Nov. 2, 1989, at 1035 PST: The 4-hour non-emergency report was made as required by 10 CFR 50.72.

D. Other systems of secondary functions affected:

None.

E. Method of discovery:

The incorrect inverter being removed from service was detected by the licensed operators performing this work almost immediately after the incorrect output breaker was opened.

F. Operator actions:

The operators returned IY-13 to service and returned the FHBVS to the normal operating mode.

G. Safety system responses:

1. RM-59 initiated a fail-safe failure alarm on loss of instrument power.

2. The FHBVS shifted to the iodine removal mode by starting one of the charcoal filter exhaust fans and shutting down the normal exhaust fan.

III. Cause of the Event

A. Immediate Cause:

The immediate cause of this event is personnel error in that the licensed operators inadvertently opened the output circuit breaker on IY-13 instead of the output circuit breaker on IY-13A.

B. Root Cause:

The root cause of this event is personnel error due to inattention. The inverters are clearly labelled, including PY-13. The operator performing the switching operation and the second operator acting as concurrent verifier overlooked the fact that they were opening the output breaker on IY-13 instead of IY-13A.

2963S/0075K

C. Contributory Cause

1. Human Factors: IY-13A and PY-13A were added to the plant as a backfit design change. In the normal design, the Instrument AC distribution panel (PY) is located in the same room as its associated inverter (IY). In this case, PY-13A is not in the same room as its associated inverter, IY-13A, but is located in a different room immediately adjacent to IY-13. This is the only one of the six instrument panels on each Unit which is not located in the same room as its associated inverter.

2. Inadequate Procedural Guidance: The operators relied on posted instructions for shutting down an inverter. Although the information was correct and properly controlled, it provided no protection against being on the incorrect inverter since the specific circuit breaker numbers naturally match the posted instruction for each panel. The operating procedure for removing an inverter from service, OP J-10:III, "Instrument AC System-Shutdown and Cleaning," did not provide specific guidance i.e., breaker numbers.

IV. Analysis of the Event

The transfer of the FHBVS from normal mode to iodine removal mode of operation is an analyzed condition and results in a conservative response to all affected systems. Therefore, no adverse safety consequences or implications resulted from this event and at no time was the health and safety of the public affected.

V. Corrective Actions

A. Immediate Corrective Actions:

IY-13 was returned to service to repower PY-13. The FHBVS was returned to normal mode.

B. Corrective Actions to Prevent Recurrence:

1. The labelling on all instrument inverters will be upgraded to ensure that the inverter number is clearly stated near each switch or circuit breaker on the inverter.

2. Caution signs have been installed on PY-13A, PY-23A, IY-13A, and IY-23A to warn plant workers that the associated inverter distribution panel is located in a different room than normally expected.

3. Operating Procedure OP J-10:III, "Instrument AC System - Shutdown and Clearing," will be revised to provide specific instructions for removing each inverter from service. Following this procedure revision, the posted instructions will be removed.

4. An Operations Incident Summary has been issued to review the event with all shift operations personnel. The Operations Incident Summary included a discussion of the event and stated that it was caused by personnel error due to inattention and inadequate concurrent verification by two individuals.

VI. Additional Information

A. Failed Components:

None.

B. Previous LERs on similar events:

LER 2-86-002-00 describes an event where an operator caused an ESF actuation when the incorrect instrument AC panel was transferred to a back-up supply. The root cause was personnel error due to inadequate self-verification. Corrective actions to strengthen the self-verification process were not effective in preventing the event described in LER 1-89-012 because proper self-verification could not be performed due to procedural inadequacies.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
DIABLO CANYON UNIT 1	0 5 0 0 0 2 7 5	1 OF 5

TITLE (4) FUEL HANDLING BUILDING VENTILATION TRANSFER TO IODINE REMOVAL MODE DUE TO PERSONNEL ERROR

EVENT DATA (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 1	0 2	8 9	8 9	0 1 2	0 0	1 2	0 1	8 9		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9): N

POWER LEVEL (10): 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR : (11)

X 10 CFR 50.73(a)(2)(iv)

OTHER (Specify in Abstract below and in text, NRC Form 366A)

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (AREA CODE)
TERENCE L. GREBEL, REGULATORY COMPLIANCE SUPERVISOR	805 595-4720

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	

SUPPLEMENTAL REPORT EXPECTED (14)

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

ABSTRACT (16)

On November 2, 1989, at 0948 PST, an Engineered Safety Feature (ESF) actuation occurred when the Fuel Handling Building Ventilation System (FHBVS) transferred from the normal mode to the iodine removal mode of operation. A four hour non-emergency report was made at 1035 PST as required by 10 CFR 50.72.

Licensed plant operators were in the process of removing instrument inverter IY-13A from service to allow the performance of electrical preventative maintenance on the inverter. The operators placed instrument AC panel PY-13A on its back-up power source. They proceeded to remove the associated inverter IY-13A from service. However, they inadvertently opened the output breaker on IY-13 instead of IY-13A, deenergizing instrument AC panel PY-13. This action deenergized radiation monitor RM-59, causing the FHBVS to transfer from the normal mode to the iodine removal mode of operation, an ESF actuation.

The cause of this event is personnel error due to operator inattention. To prevent recurrence, the labelling on all inverters will be upgraded, operating procedure OP J-10:III, "Instrument AC System, Shutdown and Clearing," will be revised, an Operations Incident Summary has been issued, and caution signs have been installed on appropriate inverter/distribution panels.

2963S/0075K

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6) YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	PAGE (3)
DIABLO CANYON UNIT 1	0 5 0 0 0 2 7 5	8 9	— 0 1 2	— 0 0	0 2 OF 0 4

TEXT (If more space is required, use additional NRC Form 366A's) (17)

I. Plant Conditions

Unit 1 was defueled (Refueling).

II. Descrhption of Event

A. Event:

On November 2, 1989, licensed plant operators were in the process of removing instrument inverter IY-13A (INVT) from service to allow the performance of electrical preventative maintenance on the inverter. The operators first placed instrument AC panel PY-13A on its back-up power source using operating procedure OP J-10:IV, "Instrument AC System - Transfer of Panel Power Supply". They proceeded to remove the associated inverter, IY-13A, from service, using instructions posted on the inverter panel for guidance. However, they inadvertently opened the output breaker (the first step in the sequence to remove an instrument inverter from service) on IY-13 instead of IY-13A, deenergizing instrument AC panel PY-13. This action deenergized the New Fuel Storage Area Radiation Monitor, RM-59, causing the Fuel Handling Building Ventilation System (FHBVS)(VG) to transfer from the normal mode to the iodine removal mode of operation, an Engineered Safety Feature (ESF) actuation.

The operators at the inverter immediately recognized their error, notified the control room, and returned IY-13 to service, restoring power to instrument AC panel PY-13.

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

None.

C. Dates and approximate times for major occurrences:

1. Nov. 2, 1989, at 0945 PST: Instrument AC panel PY-13A is placed on back-up power source.

2. Nov. 2, 1989, at 0948 PST: Output breaker for IY-13 is opened inadvertently instead of the intended breaker on IY-13A.

3. Nov. 2, 1989, at 0948 PST: Event date: The FHBVS transfers to iodine removal mode as designed when RM-59 is deenergized.

2963S/0075K

4. Nov. 2, 1989, at 0950 PST: Instrument AC Inverter IY-13 is returned to service, FHBVS is returned to normal mode.

5. Nov. 2, 1989, at 1035 PST: The 4-hour non-emergency report was made as required by 10 CFR 50.72.

D. Other systems of secondary functions affected:

None.

E. Method of discovery:

The incorrect inverter being removed from service was detected by the licensed operators performing this work almost immediately after the incorrect output breaker was opened.

F. Operator actions:

The operators returned IY-13 to service and returned the FHBVS to the normal operating mode.

G. Safety system responses:

1. RM-59 initiated a fail-safe failure alarm on loss of instrument power.

2. The FHBVS shifted to the iodine removal mode by starting one of the charcoal filter exhaust fans and shutting down the normal exhaust fan.

III. Cause of the Event

A. Immediate Cause:

The immediate cause of this event is personnel error in that the licensed operators inadvertently opened the output circuit breaker on IY-13 instead of the output circuit breaker on IY-13A.

B. Root Cause:

The root cause of this event is personnel error due to inattention. The inverters are clearly labelled, including PY-13. The operator performing the switching operation and the second operator acting as concurrent verifier overlooked the fact that they were opening the output breaker on IY-13 instead of IY-13A.

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C. Contributory Cause

1. Human Factors: IY-13A and PY-13A were added to the plant as a backfit design change. In the normal design, the Instrument AC distribution panel (PY) is located in the same room as its associated inverter (IY). In this case, PY-13A is not in the same room as its associated inverter, IY-13A, but is located in a different room immediately adjacent to IY-13. This is the only one of the six instrument panels on each Unit which is not located in the same room as its associated inverter.

2. Inadequate Procedural Guidance: The operators relied on posted instructions for shutting down an inverter. Although the information was correct and properly controlled, it provided no protection against being on the incorrect inverter since the specific circuit breaker numbers naturally match the posted instruction for each panel. The operating procedure for removing an inverter from service, OP J-10:III, "Instrument AC System-Shutdown and Cleaning," did not provide specific guidance i.e., breaker numbers.

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V. Corrective Actions

A. Immediate Corrective Actions:

IY-13 was returned to service to repower PY-13. The FHBVS was returned to normal mode.

B. Corrective Actions to Prevent Recurrence:

1. The labelling on all instrument inverters will be upgraded to ensure that the inverter number is clearly stated near each switch or circuit breaker on the inverter.

2. Caution signs have been installed on PY-13A, PY-23A, IY-13A, and IY-23A to warn plant workers that the associated inverter distribution panel is located in a different room than normally expected.

2963S/0075K

3. Operating Procedure OP J-10:III, "Instrument AC System - Shutdown and Clearing," will be revised to provide specific instructions for removing each inverter from service. Following this procedure revision, the posted instructions will be removed.

4. An Operations Incident Summary has been issued to review the event with all shift operations personnel. The Operations Incident Summary included a discussion of the event and stated that it was caused by personnel error due to inattention and inadequate concurrent verification by two individuals.

VI. Additional Information

A. Failed Components:

None.

B. Previous LERs on similar events:

LER 2-86-002-00 describes an event where an operator caused an ESF actuation when the incorrect instrument AC panel was transferred to a back-up supply. The root cause was personnel error due to inadequate self-verification. Corrective actions to strengthen the self-verification process were not effective in preventing the event described in LER 1-89-012 because proper self-verification could not be performed due to procedural inadequacies.

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