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FACIL:50-323 Diablo Canyon Nuclear Power Plant, Unit 2, Pacific Ga 05000323
AUTH.NAME AUTHOR AFFILIATION
KELLY,W.J. Pacific Gas & Electric Co.
SHIFFER,J.D. Pacific Gas & Electric Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-002-01:on 881221,entry into Tech Spec 3.0.3 when both trains of auxiliary bldg ventilation shutdown.W/890320 ltr. W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 7
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

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	NRR/DEST/MTB 9H	1	1	NRR/DEST/PSB 8D	1	1
	NRR/DEST/RSB 8E	1	1	NRR/DEST/SGB 8D	1	1
	NRR/DLPQ/HFB 10	1	1	NRR/DLPQ/QAB 10	1	1
	NRR/DOEA/EAB 11	1	1	NRR/DREP/RPB 10	2	2
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	RES/DSR/PRAB	1	1	RGN5 FILE 01	1	1
EXTERNAL:	EG&G WILLIAMS,S	4	4	FORD BLDG HOY,A	1	1
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RIDS/ADDS

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
DIABLO CANYON UNIT 2	0 5 0 0 0 3 2 3	1 OF 0 9

TITLE (4) ENTRY INTO TECHNICAL SPECIFICATION 3.0.3 WHEN BOTH TRAINS OF AUXILIARY BUILDING VENTILATION SHUTDOWN

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)
1 2	2 1	8 8	8 8	0 2 2	0 1	0 3	2 0	8 9		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9): 1

POWER LEVEL (10): 1 0 0

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

[X] 10 CFR 50.73(a)(2)(i)(B)

[ ] OTHER (Specify in Abstract below and in Text, NRC Form 366A)

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER AREA CODE
WILLIAM J. KELLY, REGULATORY COMPLIANCE ENGINEER	8 0 5 5 9 5 - 4 7 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

SUPPLEMENTAL REPORT EXPECTED (14)

[ ] YES (If yes, complete EXPECTED SUBMISSION DATE).

[X] NO

EXPECTED SUBMISSION DATE (15): MONTH | DAY | YEAR

ABSTRACT (16)

On December 21, 1988 at 0856 PST, Technical Specification (TS) 3.0.3 was entered when, contrary to TS 3.7.6.1, both trains of the auxiliary building ventilation system (ABVS) shutdown. When the control air supply was restored to the inlet damper for auxiliary building exhaust fan E-2 to facilitate calibration of the controller, the inlet damper inadvertently closed. Subsequently, fan E-2 shutdown as designed on low flow, but fan E-1 also shutdown. Operators opened the damper to fan E-2 by securing the air supply to the inlet vane damper and successfully restarted fan E-2. TS 3.0.3 was exited on December 21, 1988 at 0912 PST.

On December 23, 1988, at 0726 PST, TS 3.0.3 was entered again when operators attempted to place the ABVS in safeguards only mode to shutdown auxiliary building supply fan S-34. When operators secured fan E-2 manually, fan E-1 shutdown approximately 57 seconds later due to the flow switch incorrectly sensing a low flow condition. Operators restored ABVS by restarting supply fan S-33 and exhaust fan E-1. TS 3.0.3 was exited on December 23, 1988 at 0737 PST.

These events were caused by not adequately considering system transient conditions for post modification system testing. The inlet vane controller was adjusted to correct its response characteristics. Engineering Procedure 3.6 ON was revised to ensure that requirements for component and system testing are identified by the engineer writing the design change, including requirements to provide for design verification of the system following modification.

IE22

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

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

I. Initial Conditions

Unit 2 was in Mode 1 (Power Operation) at approximately 100 percent power.

II. Description of Event

A. Event:

On December 21, 1988 at 0856 PST, Technical Specification (TS) 3.0.3 was entered when both trains of the auxiliary building ventilation system (ABVS) shutdown. TS Section 3.7.6.1 requires two auxiliary building safeguards air filtration system exhaust trains with one common HEPA filter and charcoal absorber bank and at least two exhaust fans to be operable when in modes 1,2,3, and 4. Replacement of the controller for the fan inlet damper (VF)(CDMP) for auxiliary building exhaust fan E-2 (VF)(FAN) had just been completed by PG&E General Construction on December 20, 1988 in accordance with an approved design change. Restoration of the control air supply to the inlet damper for auxiliary building exhaust fan E-2 caused the inlet damper to inadvertently close. Subsequently, exhaust fan E-2 shutdown as designed on low flow, but exhaust fan E-1 also shutdown on low flow. Operators attempted to restart exhaust fan E-2. The fan shutdown on low flow as designed when the fan inlet vane damper did not open within the period required by the logic timer. Operators opened the inlet damper to fan E-2 by securing the air supply to the inlet vane damper and successfully restarted fan E-2. TS 3.0.3 was exited on December 21, 1988 at 0912 PST.

On December 23, 1988, at 0726 PST, operators attempted to place the ABVS in safeguards only mode to shutdown auxiliary building supply fan S-34 (VF)(FAN). Operators secured fan E-2, and exhaust fan E-1 shutdown approximately 57 seconds later. TS 3.0.3 was entered again when TS 3.7.6.1 could not be met due to both fans being shutdown. Operators restored auxiliary building ventilation by restarting supply fan S-33 and exhaust fan E-1. TS 3.0.3 was exited on December 23, 1988 at 0737 PST.

On January 13, 1989, during a surveillance test, exhaust fan E-2 tripped on thermal overload when exhaust fan E-1 was shutdown. An investigation concluded that this occurrence was caused by a failed thermal overload device, and was not related to the inlet vane controller problem described in this LER. The thermal overload device was replaced, and exhaust fan E-2 was returned to service.

B. Inoperable structures, components, or systems that contributed to the event:

None.

C. Dates and approximate times for major occurrences:

1. December 20, 1988: A new controller was installed.

2. December 21, 1988 at 0856 PST: Event date/discovery date TS 3.0.3 entered when the auxiliary building ventilation system shutdown.

3. December 21, 1988 at 0912 PST: TS 3.0.3 exited. Operators restored the auxiliary building ventilation system.

4. December 23, 1988, at 0726 PST: Event date/discovery date TS 3.0.3 entered when the auxiliary building ventilation system shutdown.

5. December 23, 1988 at 0737 PST: TS 3.0.3 exited. Operators restored the auxiliary building ventilation system.

D. Other systems or secondary functions affected:

None

E. Method of discovery:

The event was immediately apparent to the control room operators due to alarms and indications.

F. Operator actions:

Event 1:

On December 21, 1988, upon loss of both exhaust fans of the ABVS, operators attempted to restart exhaust fan E-2. Fan E-2 was successfully restarted after securing air to the inlet damper.

Event 2:

On December 23, 1988, upon loss of both exhaust fans of the ABVS, operators restored auxiliary building ventilation by restarting supply fan S-33 and exhaust fan E-1.

G. Safety system responses:

None.

III. Cause of event

A. Investigation:

Temporary Procedure TP TB-8852, "Auxiliary Building Logic Test for E-1 and E-2 Fans", was developed for troubleshooting of the ABVS and recreated the events which caused fan E-1 to trip. The test results indicated that when one of the exhaust fans has failed during a ventilation mode change, a flow transient lasting several minutes occurs. Prior to the transient, two parallel flow paths are in operation in a steady-state condition. When one flow path is suddenly closed-off by the securing of a fan, the inertia of the air flow creates a static pressure rise in the fan suction plenum. This pressure rise is dissipated by the running fan, which senses an increase in flow to about 150% of design flow and a decrease in the differential pressure across the fan.

This differential pressure is the sensed parameter for the low flow trip for the fan, which is actuated from a differential pressure flow switch (VF)(FSI). During the transient following securing one fan, the flow switch energizes due to the decrease in differential pressure, erroneously indicating that a low flow condition exists. A time delay was incorporated into the fan logic to prevent the fan from tripping during a transient of this nature, but following controller changeout the time that a low differential pressure was sensed by the flow switch increased.

The troubleshooting efforts revealed that the new controller was overmodulating the exhaust fan inlet vanes during the transient condition. This prevented the running fan from rapidly reducing the increase in the fan suction plenum pressure, allowing the fan logic to erroneously shutdown the fan on low flow.

Upon discovery and with the concurrence of engineering, plant I&C technicians adjusted the response characteristics of the Unit 2 exhaust fan E-1 inlet vane controller. The controller response time was changed

from 5 seconds to 4 minutes which allows the inlet vane to respond in a more controlled manner. This limits the effect of the transient caused by tripping of the opposite fan, preventing the operating fan from shutting down on a sensed low flow condition. Subsequent testing verified the ventilation system operated satisfactorily with the new controller response time.

B. Immediate cause:

Event 1:

Exhaust fan E-2 shutdown due to its inlet vane closing when the air supply was restored to perform calibration of its inlet vane controller. Exhaust fan E-1 shutdown due to its flow switch sensing a low flow condition.

Event 2:

Exhaust fan E-2 was manually shutdown by operators and exhaust fan E-1 again shutdown due to its flow switch sensing a low flow condition.

C. Root cause:

Inadequate consideration was given to system transient conditions for post modification system testing.

IV. Analysis of Event

During normal operation, the loss of auxiliary building ventilation flow has no public safety implications since reduced exhaust flow would only result in increased holdup and decay of airborne activity before release from the plant. A slow rise in airborne activity in the building would only occur if a significant amount of leakage existed from equipment carrying radioactive fluids during or immediately prior to the loss of ventilation flow.

During an accident, the ABVS has the primary function of maintaining the temperature of the ESF pump motors within acceptable limits during their operation. The motors are designed for continuous operation at an ambient air temperature of 104 degrees F. This temperature can be exceeded if no air supply flow exists during a high energy line break (HELB) of the letdown line in the auxiliary building. If an ABVS exhaust fan shutdown had occurred in conjunction with a HELB, operators in the control room would have had the capability to restart the exhaust fan promptly. This would have prevented exceeding of the 104 degree F temperature limit for any appreciable time. Since the 104 degree F limit is for continuous operation, operation at temperatures in excess of this limit (but less than 134 degrees F.) for less than 8 hours would not affect the operability of the pump motors. Thus, the health and safety of the public were not adversely affected by this event.

V. Corrective Actions

A. Immediate Corrective Actions:

The response characteristics of the exhaust fan inlet vane controller were adjusted to prevent the tripping of the fan during the time period when transient flow conditions exist in one fan due to shutdown of the other fan.

B. Corrective Actions to Prevent Recurrence:

Engineering Procedure 3.6 ON was revised on March 2, 1989 to ensure that requirements for component and system testing are identified by the engineer writing the design change, including requirements to provide for design verification of the system following modification.

VI. Additional Information

A. Failed components:

None.

B. Previous LERs on similar events:

LER 2-87-020-00 concerned two entries into TS 3.0.3 when both trains of the auxiliary building ventilation system were inoperable. In these events, supply fan S-34 had been manually secured, and the flow sensor for the operating fan S-33 sensed a "no-flow" condition, tripping fan S-33.

It was determined that the most probable cause of these events was a flow path from the discharge plenum to the intake room allowed pressure to equalize enough to give an apparent "no-flow" condition. PG&E committed to continue the investigation of these events and submit a supplemental report. The investigation of this latest event has provided sufficient information to be able to determine the root cause of the 1987 event. A supplemental report to LER 2-87-020-00 will be submitted under separate cover.

C. Remarks:

The flow switch installed for each exhaust fan does not accurately sense flow conditions in the duct during transient conditions. Testing indicated that the flow switch sensed a low flow condition during an approximate 50 percent increase from nominal duct flow during a transient. PG&E will investigate the feasibility of improving the transient response characteristics of the ABVS exhaust fans with regard to the low flow fan trip feature.

Pacific Gas and Electric Company

77 Beale Street
San Francisco, CA 94106
415/972-7000
TWX 910-372-6587

James D. Shiffer
Vice President
Nuclear Power Generation

March 20, 1989

PG&E Letter No. DCL-89-068

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

Re: Docket No. 50-323, OL-DPR-82
Diablo Canyon Unit 2
Licensee Event Report 2-88-022-01
Entry Into Technical Specification 3.0.3 When Both Trains of Auxiliary Building Ventilation Shutdown

Gentlemen:

PG&E is submitting the enclosed Licensee Event Report (LER) revision concerning the entry into Technical Specification 3.0.3. when both trains of auxiliary building ventilation shutdown.

This revision is submitted to provide further information concerning the root cause and corrective actions for this event.

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: J. B. Martin
M. M. Mendonca
P. P. Narbut
B. Norton
H. Rood
B. H. Vogler
CPUC
Diablo Distribution
INPO

Enclosure

DC2-88-TN-N145

2582S/0067K/DY/2230

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1/1

Pacific Gas and Electric Company

77 Beale Street
San Francisco, CA 94106
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James D. Shiffer
Vice President
Nuclear Power Generation

March 3, 1989

PG&E Letter No. DCL-89-053

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

Re: Docket No. 50-323, OL-DPR-82
Diablo Canyon Unit 2
Licensee Event Report 2-88-025-00
Seismic Bracing Missing From Instrument Panel Due to Inadequate Configuration Control

Gentlemen:

Pursuant to 10 CFR 50.73 (a)(2)(i)(B), PG&E is submitting the enclosed Licensee Event Report regarding missing seismic bracing from the rear of instrument panel RRM. It was determined that this event caused the containment wide range level channels to be inoperable.

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: J. B. Martin
M. M. Mendonca
P. P. Narbut
B. Norton
H. Rood
B. H. Vogler
CPUC
Diablo Distribution
INPO

Enclosure

DC2-89-TI-N016

2556S/0067K/DY/2246

IE22
1/1

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1): DIABLO CANYON UNIT 2

DOCKET NUMBER (2): 0 5 0 0 0 3 2 3

PAGE (3): 1 OF 0 6

TITLE (4): SEISMIC BRACING MISSING FROM INSTRUMENT PANEL DUE TO INADEQUATE CONFIGURATION CONTROL

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)
1 2	0 1	8 8	8 8	0 2 5	0 0	0 3	0 3	8 9		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9): 1

POWER LEVEL (10): 1 0 0

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

[X] 10 CFR 50.73 (a)(2)(1)(B)

[ ] OTHER (Specify in Abstract below and in Text, NRC Form 366A)

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER AREA CODE
TERRENCE GREBEL, REGULATORY COMPLIANCE SUPERVISOR	8 0 5 5 9 5 - 4 7 2 0

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 February 3, 1989, at 0900 PST I&C technicians discovered that seismic bracing on panel RRM was not installed as required by design. Containment Wide Range Level Channels 942A and 943A were declared inoperable at 1450 PST and Action Statement b of Technical Specification 3.3.3.6 was entered. At 2000 PST, on February 3, 1989, the seismic bracing was reinstalled and on February 4, at 0026 the wide range channels were declared operable and the Action Statement was exited. An investigation was conducted but it could not be determined when the bracing was removed. Therefore it was conservatively determined that the channels were inoperable from the time the Unit entered Mode 3 on November 29, 1988

The root cause was determined to be inadequate configuration control since the removal of seismic bracing was not properly documented.

Actions to prevent recurrence include issuance of a Maintenance Bulletin addressing configuration control during maintenance activities, revisions to applicable procedures to include configuration control and incorporate its policies into Nuclear Power Generation, Nuclear Engineering and Construction Services, and General Construction training syllabis.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
DIABLO CANYON UNIT 2	0 5 0 0 0 3 2 3	8 8	— 0 2 5	— 0 1	0 2 OF 0 6

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

I. Plant Conditions

Unit 2 operated at all power levels up to and including 100%.

II. Description of Event

A. Event:

On February 3, 1989, at 0900 PST during Seismically Induced Systems Interaction Program (SISIP) housekeeping inspections in the Unit 2 cable spreading room, I&C technicians discovered that the seismic bracing at the rear of panel RRM was not installed as required by design. Because this seismic bracing was not installed as required, Containment Reactor Cavity Sump Level Wide Range channels 942A and 943A (IP) were declared inoperable at 1450 PST on February 3 and Action Statement b of Technical Specification (TS) 3.3.3.6 "Accident Monitoring Instrumentation" which is applicable in Modes 1, 2 and 3 was entered. At 2000 PST, on February 3, 1989, reinstallation of seismic bracing was completed. On February 4, at 0026 PST containment wide range level channels 942A and 943A were declared operable and TS 3.3.3.6 Action Statement b was exited.

An investigation was conducted to determine when the seismic bracing was removed. The documentation indicated that the only work performed on panel RRM was on October 26, 1988 when I&C technicians performed STP I-89 "Calibration of Containment Wide Range Level Channels 942A and 943A". STP I-89 does not require the removal of the seismic bracing. The technician, who performed STP I-89, did not remove the seismic bracing but recalled that it impeded access to panel RRM. Therefore, they remembered the bracing was installed, as required, at that time. Since the actual time of removal could not be established, the Technical Review Group conservatively assumed that channels 942A and 943A were inoperable from the time Unit 2 entered a mode in which TS 3.3.3.6 was applicable. Unit 2 entered mode 3 on November 29, 1988. TS 3.3.3.6 is applicable in modes 1, 2, and 3 and action statement b is a forty-eight hour action statement. Thus the channels were considered to have been inoperable from November 29, 1988 until the braces were replaced on February 3, 1989 and that TS 3.3.3.6 action b was exceeded on December 1, 1988 at 1156PST.

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

None.

C. Dates and Approximate Times for Major Occurrences:

1. October 26, 1988: During performance of STP I-89 seismic bracing was observed to be installed as required.

2. November 29, 1988 at 1156 PST: Unit 2 entered Mode 3.

3. December 1, 1988 at 1156 PST: Event date - TS 3.3.3.6 Action Statement b exceeded.

4. February 3, 1989 at 0900 PST: Discovery Date - Seismic bracing discovered to be missing.

5. February 3, 1989 at 1450 PST: Declared Containment Wide Range Level channels 942A and 943A inoperable and entered Action Statement b for TS 3.3.3.6.

6. February 3, 1989 at 2000 PST: Reinstallation of seismic bracing was completed.

7. February 4, 1989 at 0026 PST: Containment Wide Range Level Channels 942A/943A declared operable and TS 3.3.3.6 Action Statement b exited.

D. Other Systems or Secondary Functions Affected:

None.

E. Method of Discovery:

The missing seismic bracing in panel RRM was discovered during the performance of SISIP housekeeping inspection by I&C technicians in the Unit 2 cable spreading room.

F. Operator Actions:

None

G. Safety system responses:

None

III. Cause of Event

A. Immediate Cause:

Seismic bracing was removed and not reinstalled.

B. Root Cause:

Inadequate configuration control since the removal of seismic bracing was not properly documented.

IV. Analysis of Event

A. Safety Analysis:

Containment wide range level channels are post accident instrumentation required by Regulatory Guide 1.97 to provide quantitative data of the containment sump level from the 64' elevation to the 98' elevation. This data is used to verify a Loss of Coolant Accident (LOCA) and for post accident monitoring and mitigation.

Various annunciators and indicators are available for identifying a LOCA. The first annunciator to warn operators of excessive containment pressure, shield wall temperature or humidity is the containment environment on the plant process computer. Indicators used to identify a LOCA are: Wide range pressure recorders PR-938 and PR-939 which record containment pressure; wide range temperature indicators TI-940 and TI-941 used to monitor containment temperature; and TR-26 which displays containment temperature and containment humidity in the form of dew point. These indicators and annunciators are used by operators as a primary indication of RCS integrity and were available during the assumed time of containment wide range channel inoperability. There are also four ESFAS containment pressure protection channels (PT-934, PT-935, PT-936, PT-937) that would initiate a safety injection in the event of a LOCA.

Indications other than the containment wide range level channels which provide containment level indication and are used for post accident monitoring and mitigation include the Reactor Cavity Sump Level narrow range channel (LI-62) which monitors the reactor cavity sump and the RHR recirculating sump level channels (LI-940/941) which are used primarily to measure Net Positive Suction Head (NPSH) for the RHR pumps. The function of the reactor cavity sump level narrow range channel is to provide data indicating a small leak in the incore detector penetrations and/or leaks in reactor coolant drain tank and associated valves and piping. The narrow range channel measures sump level from the 60'4" elevation to the 63'3" elevation. The RHR recirculation sump indicators (LI-940 and 941) provide sump level data between the 88' and 96'6" elevation. During the period the containment wide range level channels 942A and 943A were assumed inoperable due to missing seismic restraints, reactor cavity sump and the RHR recirculation sump indicators were operable.

Alternate indication of the RCS inventory lost is provided by monitoring pressurizer level and RCS coolant make-up. Pressurizer level is monitored by LI-459, 460, and 461. Coolant added to the system is monitored by accumulator level channels (LI-950 thru 957) and refueling water storage tank level channels (LI-920/921/922). All indicators were operable during the time the wide range channel indicators were inoperable.

The wide range level channel indicators and the data provided are not referenced in the Emergency Operating Procedures for LOCA or steam line break and thus are not relied upon for direct operator intervention for post accident monitoring or mitigation.

During the assumed time of the containment wide range channel inoperability, if indication of the amount of RCS inventory in the reactor vessel was continuously monitored and displayed by the Reactor Vessel Level Indication System (RVLIS). If a LOCA had occurred, this system would be used by operators to determine whether the core was sufficiently cooled.

Panel RRM also houses Emergency Response Facility Data System Multiplexer 11 which processes signals for the Safety Parameter Display System (SPDS). NUREG 0737 Supplement 1 states that SPDS need not be seismically qualified. Thus, this system was not adversely affected by the missing seismic braces.

Because of the above monitoring of containment level and RCS inventory the health and safety of the public were not adversely affected by this event.

V. Corrective Actions

A. Immediate Corrective Actions:

1. The affected channels were declared inoperable for Unit 2.

2. The seismic bracing was reinstalled.

B. Corrective Actions to Prevent Recurrence:

1. A Maintenance Bulletin will be issued addressing configuration control during maintenance activities.

2. Administrative Procedure C-40S3 "Administrative Procedure use of PIMS Corrective Maintenance Work Order Module" will be revised to provide increased awareness of configuration control.

3. Configuration control policies will be incorporated into the General Construction training syllabus for contractors and regular employees.

4. Configuration control policies will be incorporated into the Nuclear Power Generation training syllabus for contractors and regular employees.

5. Tailboards will be conducted with all work planners on the Maintenance Bulletin and plant policies with regard to configuration control.

VI. Additional Information

A. Failed Components:

None.

B. Previous LERs on Similar events:

LER 1-87-022-00, "Reactor Coolant System Control Room Temperature Recorders Declared Inoperable due to Inadvertent Failure to Reinstall Seismic Restraints"

This LER reported an event in which I&C technicians found missing seismic restraints from the control room reactor coolant system wide range temperature recorders. The restraints were installed in 1985 but discovered missing in November 1987. The cause of the event was determined to be personnel error. Training was conducted for Operations and I&C personnel emphasizing seismic restraints for equipment and adhering to procedures. However the information was not proceduralized or incorporated in training modules and thus did not prevent this event from occurring.

C. Configuration Control Task Force

PG&E has established a Configuration Management Task Force as referenced in DCL-88-236. The task force has performed initial review of the overall adequacy of PG&Es program and has made recommendations for improvement. PG&E is implementing these recommendations.