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 0 5

TITLE (4)
SPURIOUS CONTAINMENT VENTILATION ISOLATIONS

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)
0 7	1 0	8 6	8 6	0 0 7	0 1	1 0	0 2	8 9		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	1
POWER LEVEL (10)	7 9

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

X 50.73(a)(2)(iv)

__ 10 CFR _____

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

LICENSEE CONTACT FOR THIS LER (12)

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

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

ABSTRACT (16)

At 1220 PDT, July 10, 1986; 1645 PDT, July 15, 1986; and again at 0912, 1357 and 1452 PDT, July 30, 1986, with the unit in Mode 1 (Power Operation), an automatic isolation of the containment ventilation system (CVS) occurred. The sample line isolation valves for gaseous radiation monitors (RM) RM11 and RM12 closed as designed. All other CVS valves that receive isolation signals were already closed when the events occurred. As required by 10 CFR 50.72 (b)(2)(ii), 4-hour Significant Event Reports were made at 1310 PDT, July 10, 1986; 1837 PDT, July 15, 1986, and at 1017 and 1515 PDT, July 30, 1986.

The CVS isolations were attributed to spurious noise signals on the Instrument AC power supply lines as indicated by the absence of a valid initiation signal and by no increased radiation monitor indication and the susceptibility of the CVS isolation initiation circuitry to noise. The CVS isolation was reset at 1231 PDT, July 10, 1986; 1647 PDT, July 15, 1986; and at 0914, 1402 and 1456 PDT, July 30, 1986.

This event and the other spurious containment ventilation actuations have been studied by the Noise Reduction Task Force in an effort to determine effective corrective actions to prevent recurrence. These corrective actions are as follows: time delay circuitry has been installed; DCPP personnel have been trained on potential causes of CVIs; bypass control switches have been added on Unit 1 and will be added on Unit 2.

2594S/0072K

I. Initial Conditions

The unit was in Mode 1 (Power Operation) at 79 percent power on July 10, 1986, 73 percent power on July 15, 1986; and 63 percent power on July 30, 1986.

II. Description Of Events

A. Events:

At 1220 PDT, July 10, 1986; at 1645 PDT, July 15, 1986; and again at 0912, 1357 and 1452 PDT, July 30, 1986, with the unit in Mode 1 (Power Operation), an automatic isolation of the containment ventilation system (CVS)(TM) occurred. The sample line isolation valves for gaseous radiation monitors (IL)(MON) RM11 and RM12 closed as designed. All other CVS valves that receive isolation signals were already closed when the event occurred. As required by 10 CFR 50.72(b)(2)(ii), 4-hour Significant Event Reports were made at 1310 PDT, July 10, 1986; 1837 PDT on July 15, 1986; and at 1017 and 1515 PDT, July 30, 1986.

The CVS isolations were attributed to spurious noise signals on the Instrument AC power supply lines as indicated by the absence of a valid initiation signal and no increased radiation monitor indication. The CVS isolation was reset at 1231 PDT, July 10, 1986; 1647 PDT, July 15, 1986; and at 0914, 1402 and 1456 PDT, July 30, 1986, and then RM11 and RM12 sample line isolation valves were reopened.

The noise signal that caused the CVS isolation at 0912 on July 30, 1986, has been attributed to a voltage transient caused by an Instrument and Control technician installing a pressure switch. The installation, in accordance with approved work orders, required the lifting of two leads on the pressure switch while the circuit was energized. While performing this task, the technician noticed a small spark when the lug made contact with its terminal. An Instrument AC inverter AC distribution panel alarm was then received in the control room from the distribution panel that supplies power to both the pressure switch and the CVS isolation initiation circuitry. The noise signals that resulted in the other CVS isolations are undetermined as no other plant activities have been identified which would have caused a voltage transient.

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

None

C. Dates and approximate times for major occurrences:

First event:

1. July 10, 1986, at 1220 PDT: Event and discovery date
2. July 10, 1986, at 1231 PDT: CVS isolation reset
3. July 10, 1986, at 1310 PDT: Significant Event Report phoned to NRC

Second Event:

1. July 15, 1986, at 1645 PDT: Event and discovery date
2. July 15, 1986, at 1647 PDT: CVS isolation reset
3. July 15, 1986, at 1837 PDT: Significant Event Report phoned to NRC

Third event:

1. July 30, 1986, at 0912 PDT: Event and discovery date
2. July 30, 1986, at 0914 PDT: CVS isolation reset
3. July 30, 1986, at 1017 PDT: Significant Event Report phoned to NRC

Fourth event:

1. July 30, 1986, at 1357 PDT: Event and discovery date
2. July 30, 1986, at 1402 PDT: CVS isolation reset
3. July 30, 1986, at 1515 PDT: Significant Event Report phoned to NRC

Fifth event

1. July 30, 1986, at 1452 PDT: Event and discovery date
2. July 30, 1986, at 1456 PDT: CVS isolation reset
3. July 30, 1986, at 1515 PDT: Significant Event Report phoned to NRC

D. Other systems or secondary functions affected:

None

E. Method of discovery:

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

F. Operator actions:

None

G. Safety system responses:

None

III. Cause of Event

A. Immediate cause:

The CVS isolations were attributed to spurious noise signals on the Instrument AC power supply lines. The CVS isolation at 0912 on July 30, 1986, has been attributed to a voltage transient caused by an Instrument and Control technician installing a pressure switch. The noise signals that resulted in the other CVS isolations are undetermined as no other plant activities have been identified which would have caused a voltage transient.

B. Root cause:

Noise susceptibility problems of the CVS isolation initiation circuitry.

IV. Analysis of Event

These CVS isolation occurrences, from spurious noise signals, represent conservative actuations. Therefore, no adverse safety consequences or implications resulted from this event.

V. Corrective Actions

This event and other spurious containment ventilation actuations have been studied by the Noise Reduction Task Force in an effort to determine effective corrective actions to prevent recurrence. These corrective actions are as follows:

1. Time delay circuitry to CVI-related radiation monitors has been installed on Units 1 and 2. This circuitry prevents CVI-related radiation monitors from alarming because of short duration electrical transients, yet allows them to function fully on a valid signal.

2. DCPP maintenance and operations personnel have been trained on the potential causes of inadvertent CVIs during maintenance and calibration activities.

3. Bypass control switches have been added to the Unit 1 CVI circuitry to effectively disable the CVI actuation (without lifting leads) during testing of CVI-related radiation monitors. A similar design change will be implemented on Unit 2.

VI. Additional Information

A. Failed components:

None

B. Previous LERs on similar events:

Similar spurious CVI actuations have been reported in a number of LERs since 1985. However, recent implementation of several corrective actions, including the addition of time delay circuitry and training of plant personnel, has significantly reduced the number of CVIs. The addition of CVI bypass switches is expected to prevent spurious CVIs potentially attributed to maintenance and calibration activities on the RMS system. Due to the fast response time of the MDR relays, maintenance activities on other instruments which cause momentary dips in instrument AC power can still cause CVIs. As a long-term measure, a radiation monitoring system upgrade program has been initiated to replace existing radiation monitors with equipment that is less sensitive to electrical noise.

ENCLOSURE 3

LER 1-86-014-01,
ELECTRICAL TRANSIENT RESULTS IN CONTROL ROOM
VENTILATION SYSTEM SHIFTING TO THE PRESSURIZATION MODE