NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Callaway Plant Unit 1	0 5 0 0 0 4 8 3	1 OF 0 3

TITLE (4)

Spurious Control Room Ventilation Isolation Signals

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)
												0 5 0 0 0
0 1	1 5	8 5	8 5	–	0 0 3	–	0 0	0 2	1 4	8 5		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
1		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
0 4 8		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Charles D. Naslund - Superintendent, I&C	AREA CODE 3 1 1 4 6 7 6 – 8 5 0 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)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

Between the dates of 1/15/85 and 1/24/85 three incidents of spurious spikes received from Control Building radiation monitor GK-RE-4 resulted in Control Room Ventilation Isolation Signals. The incidents occurred on 1/15/85 at 0450 CST, 1/20/85 at 0944, and 1/24/85 at 0228 with the plant operating in Mode 1 at 48% power, 100% power, and 89% power respectively.

The cause of these incidents and previously reported incidents, reference LERs 84-004-01, 84-025-00, 84-036-00, and 84-063-00, has been determined to be an incompatability between the software and hardware in the RM-80 microprocessing unit for the radiation monitor.

There was no damage to plant equipment or release of radioactivity as a result of these incidents. These incidents were not the result of actual radiation levels but of spurious electronic signals, therefore the public health and safety was not endangered.

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Between the dates of 1/15/85 and 1/24/85 three incidents of inadvertent Engineered Safety Feature (ESF) actuations occurred due to spurious spikes received from Control Building radiation monitor GK-RE-4. Similar incidents have been previously reported in LERs 84-004-01, 84-025-00, 84-036-00, and 84-063-00.

The first incident occurred on 1/15/85 at 0450 CST with the plant operating in Mode 1 at 48% power. A Control Room Ventilation Isolation Signal (CRVIS) was received from GK-RE-4 when a spurious spike was generated on the gaseous channel of the radiation monitor. The radiation alarm cleared within 10 seconds and by 0527 the ventilation system was returned to normal.

The second incident occurred on 1/20/85 at 0944 with the plant operating in Mode 1 at 100% power. A CRVIS was received from GK-RE-4 when another spurious spike was generated on the gaseous channel of the radiation monitor. The radiation alarm cleared within 10 seconds and by 1030 the ventilation system was returned to normal.

The third incident occurred on 1/24/85 at 0228 with the plant operating in Mode 1 at 89% power. Again a CRVIS was received from GK-RE-4 when a spurious spike was generated on the gaseous channel of the radiation monitor. The radiation alarm cleared within 11 seconds and by 0348 the ventilation system was returned to normal.

The resultant investigations into the cause for the spurious alarms, reference LER 84-004-01, have revealed that there is an incompatability between the software and hardware in the RM-80 microprocessing unit for the radiation monitor. Through discussions with the vendor, General Atomics Technologies Inc., it was discovered that the RM-80 is presently designed to utilize "100 times overrun" software to accommodate scintillator pulse counter overflow. However, the Callaway Plant does not require the use of this type of software and therefore does not have the supporting hardware installed. General Atomics Technologies Inc. has indicated that if this software is actuated without the supporting hardware the radiation monitor would "lock up" for approximately 6 seconds at a fixed high radiation value. A review of past events has confirmed that for each of the spurious alarms received on GK-RE-4 resulting in a CRVIS the same radiation value was indicated on the alarm printout.

Before this incompatability between the software and hardware in the RM-80 was identified, the corrective actions were to replace the CPU and/or I/O circuit boards in the RM-80. The present course of corrective action is to temporarily install the necessary hardware in the RM-80 to support the "100 times overrun" software. As a permanent solution a Callaway Modification Package is being developed which will

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

replace the present "100 times overrun" software with software appropriate for use at the Callaway Plant. This is expected to be complete by 8/31/85.

There was no damage to plant equipment or release of radioactivity as a result of these incidents. These incidents were not the result of actual radiation levels but of spurious electronic signals, therefore the public health and safety was not endangered.

Previous occurrences: LERs 84-004-01, 84-025-00, 84-036-00, 84-063-00

UNION ELECTRIC COMPANY
CALLAWAY PLANT

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February 14, 1985

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

ULNRC-1040

Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 85-003-00
SPURIOUS CONTROL ROOM VENTILATION ISOLATION SIGNALS

The enclosed Licensee Event Report is submitted pursuant to 10 CFR 50.73(a)(2)(iv) concerning inadvertent Engineered Safety Features actuations caused by spurious radiation monitor signals.

Andrew P. Neuhalfen

for S. E. Miltenberger
Manager, Callaway Plant

CDN/WRR/RCW/drs
Enclosure

cc: Distribution attached

IE22
1/1

cc distribution for ULNRC-1040

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