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)
Catawba Nuclear Station, Unit 2	0 5 0 0 0 4 1 4	1 OF 0 3

TITLE (4)
Containment Air Release Termination Due to Spurious Radiation Monitor Alarm

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)
									N/A	0 5 0 0 0
0 6	2 7	8 6	8 6	— 0 2 7	— 0 0	0 7	2 5	8 6		0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 2 4	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	X 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)	50.72(b)(2)(ii)
		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
Roger W. Ouellette, Associate Engineer - Licensing	AREA CODE 7 1 0 4 — 3 1 7 3 1 - 1 7 5 1 3 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)

On June 27, 1986, at 0655 hours, the Containment Gas Monitor (2EMF39L) alarmed, resulting in an Engineered Safeguards Features (ESF) Actuation that terminated a containment air release. Isolation valves on the Containment Air Release and Addition (VQ) System were automatically closed due to the ESF signal. A grab sample had been taken prior to the start of the release. This sample indicated that the EMF setpoints were appropriate and that the release would be within Technical Specification limits. The unit was in Mode 1 at 24% power at the time of this incident.

This incident is assigned Cause Code X, Other. The strip chart for the EMF showed a spike that resulted in the VQ release termination but no alarms were received by other radiation monitors that monitor the release path. Therefore, the radiation monitor alarm was determined to be a spurious alarm.

This incident is reportable pursuant to 10 CFR 50.73, Section (a)(2)(iv) and 10 CFR 50.72, Section (b)(2)(ii).

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

BACKGROUND

The Process Radiation Monitoring (EMF) System (EIIS:IL) is responsible for providing early warning of potential radiological hazards. 2EMF39L, Containment Gas Monitor, monitors the radioactivity of gases inside containment. This monitor has two trip setpoints. Trip 1 setpoint initiates an alarm while Trip 2 setpoint initiates an alarm and an Engineered Safeguards Features (ESF) signal to isolate a Containment Air Release and Addition (VQ) System release. The trip setpoints must be adjusted periodically to compensate for changes in background radiation levels. These adjustments are made by comparing the EMF readings to actual grab sample results.

The VQ System provides the normal means of controlling containment pressure. When a containment pressure increase is not the result of a LOCA or steam line rupture, containment air is released through the unit vent.

ESF actuation for VQ closes the VQ containment isolation valves thereby stopping any VQ release. The ESF signal can be generated by high containment pressure or by the 2EMF39L Trip 2 Setpoint alarm.

DESCRIPTION OF INCIDENT

On June 26, 1986, at 0844 hours, Health Physics (HP) began a VQ sample per procedure HP/0/B/1004/05. At 0953 hours, the sample was completed. HP analyzed the sample and verified that the existing EMF setpoints (per Gaseous Waste Release Package GWR#121) were valid for an additional 24 hours. At 1529 hours, a VQ release was begun and the release was completed, without incident, at 1714 hours.

On June 27, 1986, at 0634 hours, Containment Isolation Valves 2VQ2A, 3B, 15B and 16A were opened in order to initiate another VQ release. AT 0645 hours, the VQ release was begun. Between 0654:58 hours and 0655:00 hours valves 2VQ2A, 3B, 15B and 16A were closed automatically by an ESF signal resulting from 2EMF39L Trip 2 setpoint being exceeded. At 0700 hours, HP was notified of the VQ release isolation and a resample was requested to determine the cause of the EMF trip. At 0704 hours, HP began a new VQ sample and completed the sample at 0812 hours. HP analyzed the sample and new 2EMF39L setpoints (GWR #122) were derived. At 1245 hours, another VQ release was begun and that release was completed without incident at 1426 hours.

CONCLUSION

For the 4 previous VQ releases and during this incident the Trip 2 setpoint for 2EMF39L was 61 counts per minute (cpm). The VQ sample immediately after this incident resulted in a new setpoint of 119 cpm. The strip chart for 2EMF39L VQ releases showed readings from 40 to 60 cpm from 4 releases previous to this incident through 7 releases after this incident. The ESF actuation in this incident resulted from an instantaneous spike of approximately 800 cpm. Therefore, while the Trip 2 setpoint was very low and close to background, raising it to the new value of 119 cpm as allowed by HP/0/B/1004/05 would not have prevented the ESF actuation. The instantaneous 800 cpm spike was a spurious indication. The count rate recorded on the strip chart was constant (in the 40-60 cpm range) both immediately before and immediately after the spike. There were no alarms on any of the other process radiation monitors that monitor the release path.

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

This incident is assigned Cause Code X, Other. The ESF VQ isolation was the result of a spurious alarm by 2EMF39L, possibly caused by electromagnetic noise coming back through the ground system. Two previous ESF VQ isolation incidents have occurred as a result of spurious EMF39L alarms (reference LER's 414/86-02 and 414/86-08). Station Problem Reports (SPR) have been initiated to correct the ground problems associated with these radiation monitors. These SPRs are currently inactive.

A Temporary Station Modification (TSM) (reference LER 414/86-02) has been installed to correct electrical noise problems associated with the RC Filter network on the EMF vacuum switches. Another TSM (reference LER 414/86-08) has installed a varistor across the filter paper advance micro-switch terminals to eliminate electrical noise from the paper advance. Both of these TSMs are still installed so the problems they corrected did not cause this spurious alarm. These two TSMs, when made permanent, will resolve the ground problems associated with the radiation monitors.

CORRECTIVE ACTION

(1) HP sampled containment atmosphere and calculated new EMF setpoints.

(2) A Work Request will be initiated in order to resolve EMF spurious alarm problems.

SAFETY ANALYSIS

Upon the alarm of 2EMF39L, all components responded properly, isolating VQ from the Unit Vent. Prior to this release, HP took a grab sample of the containment air to ensure radiation levels were within allowable limits. This ensured that an unexpected release of excessive radioactive particulates, radioiodines, or radioactive noble gases to the atmosphere would not occur. If 2EMF39L had failed to provide automatic isolation, EMFs in the Unit Vent would have isolated the VQ release. No unexpected radioactive release occurred. All radioactive material releases throughout this incident were within the limits allowed by Technical Specifications 3.11.2.1 and 3.11.2.2.

The health and safety of the public were not affected by this incident.

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

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July 25, 1986

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

Subject: Catawba Nuclear Station, Unit 2
Docket No. 50-414

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Licensee Event Report 414/86-27 concerning the termination of a containment air release due to a spurious radiation monitor alarm. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

Hal B. Tucker

RWO/08/slb

Attachment

xc: Dr. J. Nelson Grace, Regional Administrator
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Catawba Nuclear Station

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