

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Catawba Nuclear Station, Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 4 1 4 1 OF 0 4	PAGE (3) 1 OF 4
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TITLE (4)  
Containment Air Release Termination Due To Installation Deficiency

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)																																								
06	27	86	86	027	010	02	02	88	N/A		0 5 0 0 0																																								
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9) 1</td> <td colspan="10">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="6">POWER LEVEL (10) 0 2 4</td> <td>20.402(b)</td> <td>20.406(c)</td> <td><input checked="" type="checkbox"/></td> <td>50.73(a)(2)(iv)</td> <td>73.71(b)</td> </tr> <tr> <td>20.405(a)(1)(i)</td> <td>50.38(a)(1)</td> <td></td> <td>50.73(a)(2)(v)</td> <td>73.71(a)</td> </tr> <tr> <td>20.405(a)(1)(ii)</td> <td>50.38(c)(2)</td> <td></td> <td>50.73(a)(2)(vii)</td> <td><input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 305A)</td> </tr> <tr> <td>20.405(a)(1)(iii)</td> <td>50.73(a)(2)(i)</td> <td></td> <td>50.73(a)(2)(viii)(A)</td> <td rowspan="3">Voluntary</td> </tr> <tr> <td>20.405(a)(1)(iv)</td> <td>50.73(a)(2)(ii)</td> <td></td> <td>50.73(a)(2)(viii)(B)</td> </tr> <tr> <td>20.405(a)(1)(v)</td> <td>50.73(a)(2)(iii)</td> <td></td> <td>50.73(a)(2)(x)</td> </tr> </table>												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)	20.406(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)	20.405(a)(1)(i)	50.38(a)(1)		50.73(a)(2)(v)	73.71(a)	20.405(a)(1)(ii)	50.38(c)(2)		50.73(a)(2)(vii)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 305A)	20.405(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	Voluntary	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)
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LICENSEE CONTACT FOR THIS LER (12)

NAME Julio G. Torre, Associate Engineer - Licensing	TELEPHONE NUMBER 7 0 1 6 3 7 1 3 - 8 1 0 2 1 9
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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)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (16)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (18)

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 attributed to an installation deficiency. The 2EMF39L cabinet was discovered to be improperly grounded to the Station Ground System instead of to the Instrument Ground System as specified by design drawings. Following the release termination, Health Physics personnel sampled containment atmosphere and calculated new EMF setpoints. Duke Power personnel have corrected the grounding problems. A Nuclear Station Modification has been initiated to install a digital monitor which will provide more accurate setpoint determination.

This incident was originally reported pursuant to 10 CFR 50.73, Section (a)(2)(iv) and 10 CFR 50.72, Section (b)(2)(ii). However, since the time this incident occurred, VQ release terminations due to high radiation signals from the containment radiation monitor have been determined to be a normal function of the VQ System and do not constitute an ESF actuation. Therefore, this type of incident is no longer considered reportable, and this revision is being provided as a voluntary LER for information purposes. The health and safety of the public were unaffected by this event.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Catawba Nuclear Station, Unit 2	DOCKET NUMBER (2)  0 5   0 0   0 4   1 4	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 6	- 0   2 7	- 0   1	0 2	OF	0 4

TEXT (If more space is required, use additional NRC Form 365A a) (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.

The EMF cabinets are specified to be grounded to the Instrument Grounding (EVB) System and are separated from the Station Grounding (EVA) System until the two systems are tied together on the main grounding grid in the Service Building basement. These systems are separated to deter noise from equipment grounded to the EVA System from interfering with signals in equipment grounded by the EVB System.

DESCRIPTION OF INCIDENT

On June 26, 1986, at 0844 hours, Health Physics (HP) began a VQ sample per procedure HP/O/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#131) 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.

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

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/O/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.

This incident is attributed to an installation deficiency. Instrumentation and Electrical (IAE) personnel and Construction Maintenance Department (CMD) personnel determined, during investigation of LER 414/87-06, that the Radiation Monitor cabinets are grounded to the Station Grounding System instead of the Instrument Ground System. Also, several control cabinets in the Control Room were discovered to have station ground cables attached to instrument ground bus bars inside the cabinets. This allowed electrical noise signals to be transmitted from these control cabinets through station grounds to the 2EMF39L cabinet, which may have resulted in the spurious Trip 2 alarm.

IAE initiated and completed Work Request 7553 IAE to determine that the instrument ground plates were grounded to Station ground. IAE personnel initiated Work Request 7944 IAE and 7945 IAE to correct the grounding problem.

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.

In addition, SPR CNPR 02855 was initiated proposing a modification to the effluent channel low range analog output module (Rp-30A). The proposed modification will enable more precise radioactive effluent release control and reliability.

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 414/36-08) 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.

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		8   6	-   0   2   7	-   0   1	0   4	OF 0   4

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

CORRECTIVE ACTION

- (1) HP sampled containment atmosphere and calculated new EMF setpoints.
- (2) A Work Request was originated and completed in order to resolve grounding 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, radiiodines, 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 Specification 3.11.2.1 and 3.11.2.2.

This incident was originally reported pursuant to 10 CFR 50.73, Section (a)(2)(iv) and 10 CFR 50.72, Section (b)(2)(ii). However, since the time this incident occurred, VQ release terminations due to high radiation signals from the containment radiation monitor have been determined to be a normal function of the VQ System and do not constitute an ESF actuation. Therefore, this type of incident is no longer considered reportable, and this revision is being provided as a voluntary LER for information purposes.

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

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HAL B. TUCKER  
VICE PRESIDENT  
NUCLEAR PRODUCTION

February 2, 1988

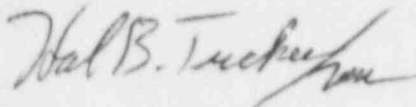
Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Subject: Catawba Nuclear Station, Unit 2  
Docket No. 50-414  
LER 414/86-27, Revision 1

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Revision 1 to Licensee Event Report 414/86-27 concerning the termination of a containment air release due to an installation deficiency. 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

JGT/1306/sbn

Attachment

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