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 FACIL:50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244
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SUBJECT: LER 89-014-00:on 891023,containment gas radiation monitor
 spikes,due to flow imbalance,causes containment VI.
 W/8 ltr.

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NOTES:License Exp date in accordance with 10CFR2,2.109(9/19/72). 05000244

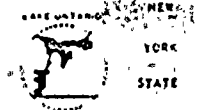
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November 21, 1989

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

Subject: LER 89-014, Containment Gas Radiation Monitor Spikes,
Due To Flow Imbalance, Causes Containment Ventilation
Isolation
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

In accordance with 10 CFR 50.73, Licensee Event Report System, item (a)(2)(iv), which requires a report of, "any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF) including the Reactor Protection System (RPS)", the attached Licensee Event Report LER 89-014 is hereby submitted.

This event has in no way affected the public's health and safety.

Very truly yours,

Robert C. Mecredy
General Manager
Nuclear Production

xc: U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Ginna USNRC Senior Resident Inspector

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LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3160-0104
EXPIRES - 9/31/95

FACILITY NAME (1) R.E. Ginna Nuclear Power Plant										DOCKET NUMBER (2) 0 5 0 0 0 2 4 4										PAGE (3) 1 OF 8																					
TITLE (4) Containment Gas Radiation Monitor Spikes, Due To Flow Imbalance, Causes Containment Ventilation Isolation																																									
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)								
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OPERATING MODE (9)						THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)																																			
N						20.402(b)						20.406(a)						X						60.734(2)(i)						73.71(b)											
POWER LEVEL (10)						0 9 9						20.406(a)(1)(i)						60.36(a)(1)												60.734(2)(v)						73.71(a)					
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						20.406(a)(1)(iii)						60.734(2)(ii)												60.734(2)(vii)(A)																	
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LICENSEE CONTACT FOR THIS LER (12)																																									
NAME																				TELEPHONE NUMBER																					
Wesley K. Backus																				AREA CODE																					
Technical Assistant to the Operations Manager																				3 1 1 5 5 1 2 1 4 - 4 1 4 1 6																					
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																									
CAUSE			SYSTEM			COMPONENT			MANUFACTURER			REPORTABLE TO NRC			CAUSE			SYSTEM			COMPONENT			MANUFACTURER			REPORTABLE TO NRC														
SUPPLEMENTAL REPORT EXPECTED (14)																				EXPECTED SUBMISSION DATE (15)																					
YES (If yes, complete EXPECTED SUBMISSION DATE)																				MONTH DAY YEAR																					
X NO																																									

ABSTRACT (Limit to 1400 words) (A - approximately 111mm single-space typewritten line) (18)

On October 23, 1989 at 1758 EDST, with the reactor at approximately 99% full power, a containment ventilation isolation occurred due to containment gas radiation monitor R-12 reaching its alarm setpoint.

All containment ventilation isolation valves that were open, closed as designed.

Immediate operator action was to perform the applicable alarm response procedures actions. This included verifying automatic actions, determining the cause of the containment ventilation isolation, and making appropriate notifications.

The underlying cause of the event was determined to be flow/pressure fluctuations in the R-12 RMS monitor sensing lines that increased the R-12 RMS monitor readings to the alarm setpoint.

Corrective action was to return the containment ventilation isolation system to service followed by a troubleshooting effort by the Instrument and Control Department.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

I. PRE-EVENT PLANT CONDITIONS

The plant was at approximately 99% steady state full power with no major activities in progress.

II. DESCRIPTION OF EVENT

A. DATES AND APPROXIMATE TIMES FOR MAJOR OCCURRENCES:

- o October 23, 1989, 1758 EDST: Event date and time.
- o October 23, 1989, 1758 EDST: Event discovery date and time.
- o October 23, 1989, 1759 EDST: Control Room operators verified all containment ventilation isolation functions took place.
- o October 23, 1989, 2013 EDST: Control Room operators reset containment ventilation isolation and restored system to normal.

B. EVENT:

On October 23, 1989 at 1758 EDST, with the reactor at approximately 99% full power, the following control board alarms were received: E-16 (RMS Process Monitor High Activity) and A-25 (Containment Ventilation Isolation). The Control Room operators, responding to the above alarms, observed that Containment Gas Radiation Monitor R-12 was on alarm. Subsequently (approximately one minute), after the above alarms were received, control board alarm E-20 (CNMT or Plant Vent Rad MON Pump Trip) was received. This alarm was due to the containment ventilation isolation which trips the containment radiation monitor pump and isolates the containment valves to and from this pump.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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The Control Room operators verified that all containment ventilation isolation valves that were open, closed as designed.

Subsequently, the Control Room operators determined that the apparent cause of containment gas radiation monitor R-12 alarming was due to a Health Physics Technician drawing a local containment sample which interrupted flow to the R-12 monitor causing R-12 reading to increase to the alarm setpoint.

The R-12 monitor was observed by the Control Room operators to be cycling between 18,000 cpm and 24,000 cpm during the time the Health Physics Technician was drawing a local containment sample. Shortly thereafter, the R-12 monitor finally alarmed at 25,000 cpm causing containment ventilation isolation. The Control Room operators notified the Health Physics Technician to terminate local sampling of containment and removed the R-12 monitor from service.

The Instrument and Control (I&C) Department was called to troubleshoot the R-12 monitor. The I&C Department, after troubleshooting the R-12 monitor, determined that the potential cause of the problem was flow/pressure fluctuations at the R-12 monitor skid. The I&C Department also determined at this time that if no local sampling was being done at the R-12 monitor skid then the R-12 monitor would operate correctly.

After the above troubleshooting was concluded, the containment ventilation isolation was reset and the system was restored to normal.

C. INOPERABLE STRUCTURES, COMPONENTS, OR SYSTEMS THAT CONTRIBUTED TO THE EVENT:

None.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 368A's) (17)

D. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:

With the containment ventilation isolation, the following major components were isolated:

- o R-10A, Containment Iodine RMS Monitor.
- o R-11, Containment Particulate RMS Monitor.
- o R-12, Containment Gas RMS Monitor.

E. METHOD OF DISCOVERY:

The event was immediately apparent due to control board annunciator alarms and containment ventilation isolation valve position indication in the Control Room.

F. OPERATOR ACTION:

Control Room operators responded to the event by performing the applicable actions of alarm response procedures E-16, A-25, and E-20. This included the following:

- o Verifying that all containment ventilation isolation valves that were open, closed as designed.
- o Determining the apparent cause of the R-12 monitor alarm.
- o Resetting the containment ventilation isolation signal and restarting R-10A, R-11, and R-12 sample pump and verifying sample flow was re-established.
- o Verifying that R-10A, R-11, and R-12 RMS monitor readings returned to normal.
- o Notifying the NRC and Higher Supervision of the ESF actuation.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

III. CAUSE OF EVENT

A. IMMEDIATE CAUSE:

The containment ventilation isolation was caused by R-12 RMS monitor reaching its alarm setpoint.

B. INTERMEDIATE CAUSE:

The cause of the R-12 RMS monitor reaching its alarm setpoint was apparently due to flow/pressure fluctuations at the R-12 RMS monitor skid during local containment sampling.

C. ROOT CAUSE:

The underlying cause of the flow/pressure fluctuations during local containment sampling was determined to be as follows:

- o When local containment sample was drawn from the R-12 RMS skid, it changed the flow/pressure characteristics at the R-12 RMS monitor.
- o The R-12 RMS monitor has a pressure compensation input to the R-12 electronics that amplifies the gain of the R-12 RMS monitor, depending on pressure sensed at the detector. As pressure decreases gain increases causing higher indication.
- o When a local containment sample was drawn at the R-12 RMS monitor skid, the pressure at the detector decreased and the pressure compensation signal to the R-12 electronics increased, thus increasing the R-12 RMS monitor output readings.
- o The amplifying effect was higher, causing isolation, during these manual sampling operations because the detector readings were higher than normal.

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TEXT (If more space is required, use additional NRC Form 368A's) (17)

IV. ANALYSIS OF EVENT

This event is reportable in accordance with 10 CFR 50.73, Licensee Event Report system, item (a)(2)(iv), which requires reporting of, "any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF) including the Reactor Protection System (RPS)". The containment ventilation isolation due to the R-12 RMS monitor alarm was an automatic actuation of an ESF sub-system.

An assessment was performed considering both the safety consequences and implications of this event with the following results and conclusions:

There were no operational or safety consequences or implications attributed to the containment ventilation isolation because:

- o The containment ventilation isolation system operated as designed.
- o The components affected were capable of withstanding the isolation.
- o The containment ventilation isolation was in the conservative direction.

Based on the above, it can be concluded that the public's health and safety was assured at all times.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

V. CORRECTIVE ACTION

A. ACTION TAKEN TO RETURN AFFECTED SYSTEMS TO PRE-EVENT NORMAL STATUS:

- o The Control Room operators, after determining the apparent cause of the containment ventilation isolation, had the Health Physics Technician terminate the local containment sample. Subsequently the Control Room operators removed R-12 RMS monitor from service for troubleshooting. After the I&C department completed their troubleshooting with inconclusive results, the Control Room operators reset the containment ventilation isolation signal and restored the system to pre-event status.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

After extensive troubleshooting by the I&C and Health Physics Departments, the following conclusions have been reached and the following actions are planned or taken:

- o The R-12 RMS monitor pressure compensation does affect the output of the R-12 RMS monitor. At lower pressure, higher than actual cpm are indicated.
- o The local containment sample does affect the flow/pressure in the R-12 RMS monitor by lowering the pressure, thus increasing the monitor output cpm.
- o The power supply on R-12 RMS monitor has been changed, which stabilized the counts per minute to normal values.
- o The procedure for local containment sampling will be reviewed to see if any enhancements may prevent the R-12 RMS monitor from reaching its alarm setpoint.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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- o The local containment sampling procedure may need to be changed to indicate that during sampling a containment ventilation isolation could occur due to the upset of the R-12 RMS monitors flow/pressure characteristics. This change will be evaluated if enhancements to the procedure are not effective in preventing R-12 from reaching the alarm setpoint.
- o R-12 alarm setpoints will be evaluated for the possibility of raising the R-12 RMS monitor setpoint during sampling to a point at which the monitor would not reach, due to the flow/pressure oscillations.

VI. ADDITIONAL INFORMATION:

A. FAILED COMPONENTS:

None identified.

B. PREVIOUS LERs ON SIMILAR EVENTS:

A similar LER event historical search was conducted with the following results:

- o LER 89-013 had the same root cause.
- o LER 87-005, LER 88-007, and LER 89-011 were similar events with undetermined or different root causes.

C. SPECIAL COMMENTS:

None.