

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Fort Calhoun Station, Unit No. 1		DOCKET NUMBER (2) 0 5 0 0 0 2 8 1 5	PAGE (3) 1 OF 0 1 3
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TITLE (4)
VIAS Actuation

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) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)					
POWER LEVEL (10) 1 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(e)	<input checked="" type="checkbox"/> 80.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)		
	<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 80.38(a)(1)	<input type="checkbox"/> 80.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)		
	<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 80.38(a)(2)	<input type="checkbox"/> 80.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)		
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 80.73(a)(2)(i)	<input type="checkbox"/> 80.73(a)(2)(viii)(A)			
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 80.73(a)(2)(ii)	<input type="checkbox"/> 80.73(a)(2)(viii)(B)			
	<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 80.73(a)(2)(iii)	<input type="checkbox"/> 80.73(a)(2)(ix)			

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME Lawrence T. Kusek, Supervisor-Operations Fort Calhoun Station, Unit No. 1		AREA CODE 4 0 2	4 2 6 1 - 4 0 1 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

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

During normal plant operation at 100% power, an unplanned actuation of the Ventilation Isolation Actuation Signal (VIAS) occurred at 1245 on September 21, 1984. The VIAS actuation [an Engineered Safety Feature (ESF)] was initiated by the containment air activity gaseous process monitor, RM-051. Just prior to the actuation, RM-050 (containment air activity particulate process monitor) and RM-051 had been returned to service on the containment after service on the discharge stack while the stack monitors were out for calibration. Upon return to service on the containment, RM-050 indicated activity began to increase.

A health physicist was sent to investigate RM-050. During that investigation, it was necessary to shut down the sampler pump which serves both RM-050 and RM-051. When the sampler pump was shutdown, a spike was received on RM-051 initiating the VIAS. The high alarm setpoint/trip signal for RM-051 did not lock in. A containment air grab sample taken concurrently showed normal isotopic levels.

The discriminator sensitivity of RM-050 was adjusted to bring meter indications within scale for containment monitoring. This corrected the indication of increasing activity for RM-050. Both monitors were returned to service fully capable of trending containment activity levels and alarming/initiating VIAS if significant increases in containment activity were noted.

No operator errors or equipment malfunctions occurred. All Engineered Safety Features functioned as designed. No radioactive release occurred.

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

While operating at 100% power, RM-050 activity levels were observed to be steadily increasing and approaching the alarm setpoint of 1,000,000 cpm. RM-050 and RM-051 had just been switched from stack to containment monitoring which includes readjustment of setpoints. During this operating cycle, containment monitoring by RM-050 has also required adjustment of the discriminator sensitivity to keep indication within scale. This had not yet been performed. The increasing activity was characteristic of a filter paper malfunction so a health physicist was sent to verify proper operation. When the sampler pump which serves RM-050 and RM-051 was shutdown, a spike was received on RM-051 initiating a VIAS but not locking in the high alarm setpoint/trip signal.

It was determined that the filter paper was operating correctly. The increasing activity level was correct for the sensitivity of the monitor, but out of scale for the operating conditions. A containment air grab sample taken coincidentally for a containment pressure relief showed normal isotopic levels. The discriminator was adjusted. The monitors were returned to service fully capable of trending containment activity levels and alarming/initiating VIAS if significant increases in containment activity were noted.

VIAS, as described in the USAR, is designed to mitigate a release of significant radioiodine or radiogas from the containment to atmosphere from such sources as reactor coolant leaks. VIAS is initiated by a safety injection actuation signal (SIAS) or a containment spray actuation signal (CSAS) or a containment radiation high signal (CRHS). The CRHS feature employs five radiation monitors taking samples from the containment and/or ventilation stack. These monitors supply a 1-out-of-5 logic network to trip the VIAS lockout relay.

The five ventilation radiation monitors that actuate VIAS are also used for an isolation function similar to that performed by other process radiation monitor systems. The ventilation monitors are used as process monitors in order to satisfy the Technical Specification 2.9 objective of controlling the release of radioactive effluents to the environs to as low as practicable.

The VIAS performs the following functions:

1. Closes the containment purge valves.
2. Closes the containment relief valves.
3. Stops the containment purge fans.
4. Closes the containment air sampling valves.
5. Opens the inlet and outlet vents to the safety injection pump rooms and the spent regenerant tank room.
6. Starts both control room air conditioning units and places control room ventilation in a filtered air makeup mode.
7. Closes the waste gas header release valve to the stack.

The containment air monitoring system comprises a moving filter-paper particulate monitor (channel RM-050) and a sample chamber gas monitor (RM-051) installed in a common housing, with pump and flow controls, outside the containment at a location where background is minimal. A continuous air sample is drawn from the containment, passed through the particulate and gas monitor in series, and returned to the containment.

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

The sampling point for channels RM-050 and RM-051 can be switched from the containment to the ventilation discharge duct. Sampling point selection valves are controlled from panel AI-33 in the control room. Isokinetic sampling is used to ensure representative particulate sampling when in the stack monitoring mode. The capability of switching RM-050's sample point to the plant ventilation discharge duct provides the ability to sample from the stack whenever the normal stack monitors (RM-061 and RM-062) are out of service for maintenance, testing or calibration. Per Technical Specification Table 2-1, Note 4, whenever RM-050/051 are being used to sample from the ventilation discharge duct, the containment ventilation valves must be shut.

When sampling from the containment, the RM-050 alert and alarm setpoints are adjusted to give an indication of a significant increase in containment airborne activity above a predetermined background. Although VIAS will be initiated when the alarm setpoint is reached, the setpoint is not based on a Technical Specification release limit. The alarm setpoint allows the operators to trend containment activity between times that grab samples are taken. Grab samples are the primary means of analyzing for the presence of various gaseous nuclides and for airborne halogens. Grab samples are always taken and analyzed prior to initiating a containment purge or pressure relief.

When sampling from the ventilation discharge duct, the RM-050 alarm setpoint is changed to alarm and provide ventilation isolation (VIAS) prior to exceeding the release rate specified in Technical Specification 2.9(2)b.

The actuation of the VIAS signal in this case was not initiated to mitigate the consequences of an event as described in the USAR. Prior to and during this incident, containment integrity was in force and the containment ventilation valves were closed and sealed. Thus, no radioactive release to the environment occurred and the Emergency Response Plan was not initiated. All plant systems involved in this scenario operated within their design basis. No operator errors or equipment malfunctions occurred.

Whenever RM-050's discriminator sensitivity is adjusted to bring the indicated activity back on scale, the monitor is caution tagged to ensure that the discriminator setting is returned to its normal position prior to switching the sample point to the ventilation stack and changing the alert and alarm setpoints.

Other VIAS actuations that have occurred since the new LER rule went into effect on January 1, 1984 were reported in LER 84-005, LER 84-007, LER 84-006, LER 84-014, LER 84-017, LER 84-018 and LER 84-019.

Omaha Public Power District
1623 Harney Omaha, Nebraska 68102
402/536-4000

October 19, 1984
FC-785-84
LIC-84-354

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

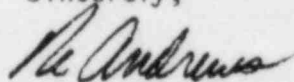
Reference: Docket No. 50-285

Gentlemen:

Licensee Event Report for the
Fort Calhoun Station

Please find attached Licensee Event Report 84-010 dated October 19, 1984.
This report is being submitted per requirements of 10 CFR 50.73.

Sincerely,



R. L. Andrews
Division Manager
Nuclear Production

RLA/DJM/rh-w

Attachment

cc: Mr. Dorwin R. Hunter, Chief
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U.S. Nuclear Regulatory Commission
Region IV
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INPO Records Center
Mr. E. G. Tourigny, Project Manager

SARC Chairman
PRC Chairman
Mr. L. A. Yandell, Senior Resident Inspector
Fort Calhoun File (2)