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)
Fort Calhoun Station, Unit No. 1	0 5 0 0 0 2 8 5	1 OF 0 3

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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0 5	1 6	8 4	8 4	-	0 0 7	-	0 0	0 6	1 5	8 4		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)			
	4	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	0 0 0	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)	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
Lawrence T. Kusek, Supervisor-Operations Fort Calhoun Station	AREA CODE 4 0 2 — 4 2 6 - 4 0 1 1

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)

During plant heatup and pressurization following the 1984 refueling outage per plant Operating Instruction OI-RC-2B, an unplanned actuation of the Ventilation Isolation Actuation System (VIAS) occurred at approximately 1210. The VIAS actuation (an Engineered Safety Feature (ESF)) was initiated by the containment radiation process monitor, RM-050. The actuation was caused by a high airborne activity in containment resulting from the lifting of the Reactor Coolant Drain Tank (RCDT) relief valve which discharges to a floor drain. The RCDT filled and its relief valve lifted as the result of back leakage past one or more Reactor Coolant System (RCS)/Safety Injection interface check valves as RCS pressure was being increased.

During plant startup, it is not uncommon for the RCS/Safety Injection interface check valves to leak by until RCS pressure is high enough to seat them tightly.

No apparent equipment malfunctions, operator errors, or procedure violations were identified.

On May 16, 1984, a VIAS trip was initiated. The VIAS trip function is considered part of the Engineered Safety Feature (ESF) system.

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

During normal operation, the Containment Air Particulate Monitor RM-050 alert and alarm setpoints are adjusted to give an indication of a significant increase in containment airborne activity. During refueling the alarm setpoint is lowered considerably and set at the occupational MPC for unidentified isotopes. When the alarm is actuated, it indicates the necessity for use of respiratory protection measures for personnel inside containment. The Containment Gaseous Monitor RM-051 is operated in a similar fashion.

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 this system in a 100% recirculation mode.
7. Closes the waste gas header release valve to the stack.

At the time of the unplanned VIAS actuation, the plant was being heated up and pressurized per Operating Instruction OI-RC-2B in preparation for the RCS leak test following the 1984 refueling outage.

As the RCS is pressurized during startup, the RCS/Safety Injection interface check valves may leak by until RCS pressure is high enough to seat them tightly. On the day of the occurrence, one or more of these interface check valves began leaking by.

Back-leakage through these check valves is normally controlled by automatic cycling of the RCS/SI interface check valve leakage pressure control valves. Per design, the pressure control valves began cycling to relieve the check valve leakage, thus pressurizing the Safety Injection leakage return header. The relief valve on this header, SI-222, lifted and relieved to the RCDT per design. Because the RCDT pumps were in manual and lined up to the Safety Injection-Refueling Water Storage Tank rather than to waste, the RCDT filled up and its relief valve, WD-501, lifted and discharged to the floor drain header, thus filling the containment sump. Airborne activity in containment increased causing RM-050 to go into alarm, thus initiating the VIAS actuation.

The problem was identified and the pressure in the Safety Injection leakage return header was immediately reduced by opening the cross-tie valve (HCV-2983) from the header to the Volume Control Tank (VCT) in the Chemical and Volume Control System (CVCS). Opening HCV-2983 allowed relief valve SI-222 to reclose, effectively terminating the loss of reactor coolant to the containment sump. Shortly thereafter, containment activity dropped, the RM-050 alarm cleared, and the VIAS lockout relays were reset. As RCS pressure was increased, leakage past the interface check valves decreased.

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

The actuation of the VIAS signal in this case was not initiated to mitigate the consequences of an event as described in the USAR. The actuation occurred while the plant was in a heatup evolution following the 1984 refueling outage. The setpoints in RM-050 were set at the lower, more conservative, refueling alarm setpoints. Because the RCS temperature was greater than 210°F, 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 and no equipment was damaged or failed.

Although Operating Instruction OI-RC-2B contained a note regarding RCS/SI interface check valve leakage, a procedure change has been submitted to elaborate the operator actions that can be taken to minimize the consequences to the check valve leak-by.

Numerous VIAS actuations have occurred since the new LER rule went into effect on January 1, 1984. These VIAS actuations were reported in LER 84-005. Although fourteen (14) VIAS actuations were reported in LER 84-005, this is the first instance in which a VIAS actuation was caused by RCS/SI interface check valve leakage.

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

June 15, 1984
FC-317-84
LIC-84-178

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 84-007 dated June 15, 1984. This report is being submitted per requirements of 10 CFR 50.73.

Sincerely,

W. C. Jones
Division Manager
Production Operations

WCJ/JJF:jmm

Attachment

cc: Mr. Richard P. Denise, Director
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INPO Records Center
Mr. E. G. Tourigny, Project Manager

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PRC Chairman
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Fort Calhoun File (2)

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