Omaha Public Power District
444 South 16th Street Mall
Omaha, Nebraska 68102-2247
402/636-2000

February 28, 1992
LIC-92-058L

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

References: 1. Docket No. 50-285
2. LER 91-028 Revision 0, from OPPD (W. G. Gates) to NRC (Document Control Desk) dated December 31, 1991 (LIC-91-0283L)

Gentlemen:

Subject: Licensee Event Report 91-028 Revision 01 for the Fort Calhoun Station

Please find attached Licensee Event Report 91-028 Revision 01 dated February 28, 1992. This revision provides supplemental information regarding corrective actions. Revisions to the Abstract and Text are denoted by a vertical line in the right margin. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B). If you should have any questions, please contact me.

Sincerely,

W. G. Gates

W. G. Gates
Division Manager
Nuclear Operations

WGG/rkj

Attachment

c: R. D. Martin, NRC Regional Administrator
D. L. Wigginton, NRC Senior Project Manager
R. P. Mullikin, NRC Senior Resident Inspector
S. D. Bloom, NRC Project Engineer
INPO Records Center

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NRC FORM 366 (6-89) | U.S. NUCLEAR REGULATORY COMMISSION | APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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): Unmonitored Release on Loss of 161KV System

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	0 5 0 0 0
1 2	0 1	9 1	9 1	0 2 8	0 1	0 2	2 8	9 2		0 5 0 0 0

OPERATING MODE (9): 1 | POWER LEVEL (10): 1 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

20.402(b)	20.405(c)	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)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
20.405(a)(1)(iii)	X 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
Daniel J. Rosloniec, Shift Technical Advisor	AREA CODE: 4 0 2 — 5 3 3 - 6 8 9 9

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)

At 0205 on December 1, 1991, it was discovered that the sample pump for the Laboratory and Radioactive Waste Processing Building (LRWPB) Exhaust Stack Gas, Iodine and Particulate Monitors was not running. At the time of the discovery, the Chemistry and Radiation Protection (CARP) Building exhaust fan was running. Operation of the exhaust fan while the sample pump was not running was determined to constitute an unmonitored release in violation of Plant Technical Specification 2.9.1(2)h(i), and is reportable under 10 CFR 50.73(a)(2)(i)(B).

The event is considered to have been caused by a power excursion the previous day due to severe winter weather. 161KV offsite electrical power was lost and subsequently restored twice on November 30, 1991. It is assumed that when the initial loss of 161KV power occurred at 0430, the LRWPB Stack Radiation Monitors sample pump stopped, and did not restart when power was restored. The sample pump is designed not to reenergize following a power interruption until the Start/Stop switch is manually pushed. The CARP Building exhaust fan restarted when power was restored, resulting in the unmonitored release. During the time that the sample pump is assumed to have been deenergized, routine releases occurred which were found to be not significant.

A temporary modification has been installed to automatically restart the sample pump upon restoration of power after a loss of power. A change will be installed to provide Control Room indication of a flow fault or loss of power to the sample pump. In addition, the design configuration of the sample pump and exhaust fan control circuits is being further evaluated. Also a Facility License Change related to this issue will be submitted.

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

The Chemistry and Radiation Protection (CARP) Building and the Radioactive Waste Building (RWB) are two new structures built as part of station improvements. Their ventilation systems use a common exhaust stack which is independently operated from the rest of the plant and is equipped with its own radiation monitors designated as the Laboratory and Radioactive Waste Processing Building (LRWPB) Exhaust Stack Gas, Iodine and Particulate monitors (RM-041, RM-042, and RM-043).

During the performance of Surveillance Test OP-ST-SHIFT-0001 at 0205 on December 1, 1991, it was discovered that the sample pump for the LRWPB radiation monitors RM-041/042/043 was not running and Technical Specification (TS) 2.9.1(2)h(i) was entered. The radiation monitors were otherwise operational and energized. However, without the pump drawing the proper sample flow through the radiation monitors, a representative sample was not analyzed. At the time of the discovery, the CARP Building exhaust fan was running. Operation of the exhaust fan while the sample pump was not running was determined to constitute an unmonitored release in violation of TS 2.9 and is reportable under 10 CFR 50.73(a)(2)(i)(B). Normal ventilation alignment was restored, the sample pump restarted and at 0228 TS 2.9.1(2)h(i) was exited.

The event is considered to have been caused by a power excursion the previous day due to severe winter weather. On November 30, 1991, at 0430 with the Fort Calhoun Station (FCS) operating at a nominal 100 percent power (Mode 1), offsite electrical power on the 161KV system was interrupted. The 161KV system is the normal power supply for the two 4160 volt safety related house service busses. The switchgear automatically transferred the House Service Bus power supplies to the Station generator 22KV output as designed. System Operations confirmed that the 161KV power loss was momentary and normal electrical alignment was reestablished at 0441. A one (1) hour notification to the NRC was made at 0500 as required by TS 2.7(2)n.

A second 161KV loss of power was experienced at 1537 on November 30, 1991. The switchgear automatically transferred again as designed. The NRC had previously been notified at 1325 of a planned 161KV outage to allow the replacement of faulty insulators. The unplanned loss of 161KV at 1537 occurred approximately 15 minutes prior to a planned 161KV outage and the NRC notification of the loss of power was made at 1601. The planned work was performed and 161KV power was restored at 2313.

It is assumed that when the initial loss of 161KV occurred, the LRWPB stack radiation monitors sample pump stopped, and the pump did not restart when power was restored. Pump power is supplied through the contact of a latching relay which is energized by a momentary contact on the pump Start/Stop switch. When the relay opened due to the power excursion, pump power could not be restored until the pump Start/Stop switch was pushed again. The Radiation Monitors supply the input to an annunciator window in the Control Room on Panel A33C labeled, "RM-041 Through RM-043 Radwaste Building Stack Trouble", but the sample pump operation is not monitored by this annunciator. Control Room indications showed normal system operation.

The RWB air compressor stopped running and this caused the exhaust dampers for the RWB ventilation system to fail closed. The dampers opened an interlock which stopped the ventilation fan and isolated the RWB ventilation system; therefore, no release occurred from the RWB. The CARP Building exhaust system interlock circuit, however, was satisfied and the system restarted when power was restored.

During the time that the sample pump is assumed to have been deenergized, four Chemistry analyses took place which resulted in routine releases. Of these analyses, a Reactor Coolant System (RCS) gas sample represented the greatest potential radioactive release. An analysis of the release for this sample determined a dose rate of 5.0 E-4 mR per hour at the site boundary and 4.23 E-2 of the Maximum Permissible Concentration allowed. Thus, the safety significance of the unmonitored release was minimal.

The Root Cause of this event was determined to be associated with the design of the RM-041/042/043 Sample Pump control and supervisory circuitry.

The following corrective actions have been or will be completed:

1. Temporary Modification 92-04 has been installed, changing the switch on the sample pump so that the pump will automatically restart when power is returned to the pump.

2. Engineering Change Notice (ECN) 91-524 was initiated on December 17, 1991. This ECN will provide the Control Room with an annunciator on the Radiation Monitor panel, in the event of a flow fault or loss of power on the RM-041/042/043 sample pump. The ECN will also address long-term implementation of the functional changes in place under Temporary Modification 92-04. These changes will be installed under MWO 920496. The expected installation date is March 20, 1992.

3. EAR 92-002 was initiated to evaluate the present design configurations of the RM-041/042/043 sample pump control circuit and the exhaust fans that discharge through the LRWPB stack to determine if other changes are needed to address Technical Specification requirements. This evaluation will be completed by December 31, 1992.

4. OPPD will submit a Facility License Change (FLC) to implement the recommendations of NRC Generic Letter 89-01 which will relocate the requirements for Radioactive Effluent Technical Specifications to the Offsite Dose Calculation Manual (ODCM). This FLC will be submitted by April 30, 1992.

This is the first incident of an unmonitored release through the LRWPB stack.