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

January 15, 1992
LIC-92-044L

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

Reference: Docket No. 50-285

Gentlemen:

Subject: Licensee Event Report 91-031 for the Fort Calhoun Station

Please find attached Licensee Event Report 91-031 dated January 15, 1992. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(ii). If you should have any questions, please contact me.

Sincerely,

W. G. Gates for
Division Manager
Nuclear Operations

WGG:lah

Attachment

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

IE 22
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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/95

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.

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 4

TITLE (4)
Personnel Air Lock Door Connections Outside Design Basis

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	1 6	9 1	9 1	0 3 1	0 0	0 1	1 5	9 2		0 5 0 0 0

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	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)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	X 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
	AREA CODE
C. E. Booth, Shift Technical Advisor	4 0 2 5 3 3 - 6 8 7 4

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)

On December 16, 1991, at 1305 hours while operating at 100 percent power (Mode 1), it was determined that the connections to the Personnel Air Lock (PAL) bulkheads for leak rate testing were potentially outside the original design requirements. The connections had been installed in 1974 to facilitate testing of the PAL and its door seals, however, design documentation could not be located to prove that the components were seismically qualified as a containment isolation boundary. This report is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(ii).

The PAL was determined to be operable with the unqualified components installed based on past seal leakage tests and by maintaining the inner door closed and sealed. Therefore, the health and safety of the public was not at risk.

The cause of this event is attributed to lack of procedures to control the plant configuration change process when these connections were installed in 1974. A contributing factor was the lack of understanding of the design basis of the PAL by those involved with the 1974 installation.

Immediate corrective action included establishing administrative control by danger tagging the outer PAL door to restrict access, thus ensuring that containment integrity was maintained. The unqualified components identified as being outside the design basis were then removed from the PAL and the resulting penetration openings were capped. This restored the PAL to the original design configuration. Long term corrective actions include completing a modification to install new valves and tubing, and revising the Technical Specifications and Updated Safety Analysis Report to reflect the new valves.

At Fort Calhoun Station the Personnel Air Lock (PAL) consists of a cylindrical steel barrel with a bulkhead welded to each end. Integral to each bulkhead is a 3 feet 6 inches by 6 feet 3 inches door with a dual resilient seal. This assembly was designed to withstand all postulated containment conditions with either or both doors secured. Each door is designed to open inward, toward containment, so that in the event of containment overpressurization, the door will tend to compress the seals. The doors are mechanically interlocked to ensure that only one door can be opened at a time and an alarm is annunciated to the Control Room if either PAL door is not completely secured.

The seals on the PAL doors are tested in accordance with 10 CFR 50 Appendix J, Type B leak rate testing at 5 psig after each opening or daily, whichever is less frequent. The entire PAL assembly is tested at six month intervals, and within two weeks of conditions that require containment integrity, at the maximum design pressure of 60 psig. The testing of the PAL door seals is accomplished using a permanent test panel (AI-213) that is installed in the Auxiliary Building just outside the PAL. This panel was installed in 1974, as an approved modification in accordance with 10 CFR 50.59. This installation was performed to facilitate the testing of the PAL and the PAL door seals.

The design utilized the test taps located on each bulkhead to test the seals, and existing gage taps on the outer bulkhead to run the sensing line from the inner door to the test panel. This design was intended to allow testing with both PAL doors secured. Additionally, the emergency air supply, an originally capped line, was modified to include a pipe stub and valve for pressurizing the PAL assembly to the 60 psig test pressure.

The Containment System Engineer (SE) was reviewing potential modifications needed on the PAL. The SE questioned if the permanently installed valves and tubing were seismically mounted. A records search did not retrieve a seismic analysis, the testing procedures to show that the leakage was measured for the test valves that formed the containment isolation boundary, or documentation to attest to the material quality of the valves and tubing.

On December 16, 1991, while operating at 100 percent power (Mode 1), it was determined that the connections to the PAL for leak rate testing were potentially outside the original design requirements. This was due to the lack of documentation attesting to the qualification of the following test connections: a 3/4 inch pipe stub and manual isolation valve installed on the three-inch emergency air supply/test line pipe cap; copper tubing running from the inner door seal gasket annulus test tap to one of the pressure gage taps on the outer door inner bulkhead surface, and the stainless steel tubing running from the same gage tap on the outer bulkhead surface to a manual isolation valve; and, additional copper tubing running from the outer door seal gasket annulus test tap to a manual isolation valve. Failure of these components would have rendered the two outer door seals and one of the two inner door seals inoperable.

At 1305 hours, it was confirmed that the PAL was outside its design basis. On December 16, 1991, at 1400 hours, notification was subsequently made to the NRC pursuant to 10 CFR 50.72(b)(1)(ii)(B). This report is being submitted pursuant to 10 CFR 50.72(a)(2)(ii). Administrative control was established by danger tagging the outer PAL door to further restrict access.

At 1620 hours, an operability determination was completed in accordance with NOD-QP-31, "Operability and Reportability Determination". The PAL was deemed to have been operable with the unqualified connections in place based on the results of two previously conducted surveillance tests which verified all four seals were capable of performing their design basis function. It is noted that the seal is a passive device not subject to single failure criteria. The surveillance test, OP-ST-AE-0001, "Personnel Access Lock (PAL) O-ring Seal Leakage Test", directs the testing of the PAL door seals at 5 psig, and the second, IC-ST-AE-0001, "Containment Personnel Air Lock Type B Leak Rate Test", directs the 60 psig testing of the entire PAL assembly. These recent tests indicated that containment integrity was being maintained by the PAL. Based on these recent seal leakage tests and by maintaining the inner door closed and sealed, the health and safety of the public was not at risk at any time due to the unqualified connections.

The root cause of this event is attributed to the lack of procedural control of the plant configuration change process when these connections were installed in 1974. The contributing cause was lack of understanding of the design basis of the PAL by those individuals involved with this design change in 1974.

In addressing the root cause of this event, the following actions were previously completed under other plant enhancement programs:

1. Training in the performance of 10 CFR 50.59 safety evaluations has been upgraded.

2. System Design Basis Documents were developed to facilitate review and assessment.

3. Procedural guidance on the performance of plant modifications/configuration changes has been improved (i.e., Standing Order G-21, PED-QP-2, and PED-GEI-3).

As a result of this event, the following corrective actions regarding the PAL, have been or will be completed:

1. On December 16, 1991, at 1420 hours, administrative control was established to restrict access by danger tagging the outer PAL door closed, thus ensuring that containment integrity was maintained.

2. On December 19, 1991, the unqualified components were removed from the PAL and the penetrations were capped. This restored the PAL to the original design configuration.

3. A modification to install new tubing and valves that meet the appropriate design criteria will be completed under NCR 91-105 by May 30, 1992.

4. The Updated Safety Analysis Report (USAR) and Technical Specifications will be updated to reflect the new valves associated with this modification (NCR 91-105). The USAR updates will be submitted with the annual 1992 update. The Technical Specification proposed changes will be submitted by June 5, 1992.

There have been no other LERs submitted concerning these PAL door connections being outside the design basis.