

1985

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

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REPORT SOURCE

60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

DOCKET NUMBER

EVENT DATE

REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | Although no tilting disc check valves have been identified at the Fort Calhoun Station

0 3 | (Reference IE Circular 78-15), another type of check valve which is orientation sensi-

0 4 | tive was inspected during the 1978 refueling outage. As a result of the inspection,

0 5 | Auxiliary Feedwater check valve FW-164 was found to be oriented in the wrong position.

0 6 | Maintenance Order Number 20429 was written to remove the valve and orient it correctly.

0 7 | Upon disassembly of the valve, one of the two valve disk plates was missing.

09		SYSTEM CODE C H		11	CAUSE CODE B		12	CAUSE SUBCODE C		13	COMPONENT CODE V A L V E X					14	COMP SUBCODE C		15	VALVE SUBCODE A		16					
7	8	9	10		11		12		13					18		19		20									
17		EVENT YEAR 7 8		21	22	SEQUENTIAL REPORT NO. 0 3 6		24	26	OCCURRENCE CODE 0 3		28	29	REPORT TYPE L		30	REVISION NO. 0		32								
ACTION TAKEN A		18	FUTURE ACTION X		19	EFFECT ON PLANT Z		20	SHUTDOWN METHOD Z		27	HOURS 0 0 0 0		22	ATTACHMENT SUBMITTED Y		23	NPRD-4 FORM SUB. N		24	PRIME COMP. SUPPLIER A		25	COMPONENT MANUFACTURER M 3 5 8		26	
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 FW-164 is a Type 3"-C308, Style "B" Duo Chek, series 900 check valve. The hinge lugs
11 of the missing disk plate were broken at the plate, thus allowing the plate to carry
12 over to the steam generator during the quarterly test of the auxiliary feedwater pumps.
13 New valve internals for FW-164 will be installed prior to startup. The missing plate
14 was located and recovered.

FACILITY STATUS (28) H 0 0 0 (29) NA
 % POWER
 OTHER STATUS (30)
 METHOD OF DISCOVERY (31) D IE Circular 78-15
 DISCOVERY DESCRIPTION (32)
 ACTIVITY CONT NT
 RELEASED OF RELEASE (33) Z (34) Z NA
 AMOUNT OF ACTIVITY (35)
 LOCATION OF RELEASE (36) NA
 PERSONNEL EXPOSURES
 NUMBER (37) 0 0 0 (38) Z NA
 TYPE
 DESCRIPTION (39)
 PERSONNEL INJURIES
 NUMBER (40) 0 0 0 NA
 DESCRIPTION (41)
 LOSS OF OR DAMAGE TO FACILITY (42) Z NA
 TYPE
 DESCRIPTION (43)
 PUBLICITY (44) N NA
 ISSUED
 DESCRIPTION (45)
 NRC USE ONLY

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LER 78-036
Omaha Public Power District
Fort Calhoun Station Unit No. 1
Docket No. 05000285

Attachment No. 1

Safety Analysis

The auxiliary feedwater system provides a redundant means of supplying the steam generators with feedwater. Operation of the system is automatically initiated on loss of power to the main steam generator feedwater pumps. The system can also be manually operated. The purpose of check valve FW-164 is to prevent the back-flow of water and steam from the steam generator to the auxiliary feedwater pumps and their associated discharge piping. With half of the disk plate missing from FW-164, the auxiliary feedwater piping between the steam generator and the auxiliary feedwater containment isolation valves would have been pressurized to steam generator pressure (approximately 780 psia at 100% power and 900 psia at zero power). The auxiliary feedwater piping in question has a design pressure of 1600 psi and thus, no piping would have been overpressurized. In the event of failure of all three main feedwater pumps, the auxiliary feedwater pumps would have started to supply water to the steam generators. Steam generator pressure would have had to be overcome at the containment isolation valves rather than at FW-164, but this fact would not have prevented proper operation of the auxiliary feedwater pumps.

Thus, in spite of the fact that half of the disk plate from FW-164 was missing, the auxiliary feedwater system would still have been able to supply water to the steam generator in question, and the health and safety of the public would not be affected.

Al Anderson

LER 78-036
Omaha Public Power District
Fort Calhoun Station Unit No. 1
Docket No. 05000285

Attachment No. 2

Corrective Action

A complete set of new internals was obtained for FW-164 and will be installed before startup from the refueling outage currently in progress. The valve disk plate material was changed from ASTM A216-WCB to 416 Stainless Steel.

A search for the missing disk plate was conducted inside the steam generator. The plate was found on the tube sheet very near one of the handhole inspection ports.

The results of the steam generator secondary side visual inspection both before and after the missing disk plate was found, coupled with the results of steam generator eddy current testing from both the present and 1977 refueling outages, indicate that no observable internal damage has occurred in the steam generator as a result of the loose disk plate.

The sister valve for the other steam generator (FW-163) was disassembled and inspected. FW-163 showed none of the damage evident in FW-164 and it was reinstalled.

The inspection of similar type valves for proper orientation is being scheduled.

McAndrews

LER 78-036
Omaha Public Power District
Fort Calhoun Station Unit No. 1
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Attachment No. 3

Failure Data

This is the first incident/failure of this type at the Fort Calhoun Station.

McAndrews