LICENSEE EVENT REPORT

CONTROL BLOCK: | | | | | | | (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1	LICENSEE CODE: N E F C S 1 (2)	LICENSE NUMBER: 0 0 - 0 0 0 0 0 - 0 0 0 (3)	LICENSE TYPE: 4 1 1 1 1 (4) CAT (5)
CON'T 0 1	REPORT SOURCE: L (6)	DOCKET NUMBER: 0 5 0 0 0 2 8 5 (7)	EVENT DATE: 1 2 0 4 7 8 (8) REPORT DATE: 1 2 2 2 7 8 (9)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 While inspecting discharged fuel assemblies as required by Technical Specification 3.2.
0 3 Table 3-5, Item 12, a single fuel pin was observed to have failed in a manner that
0 4 would allow fission fragment release to the reactor coolant. This instance was the
0 5 only cladding failure observed during visual inspection of 44 discharged fuel assemblies
0 6 and 8 reload assemblies.
0 7
0 8

	SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP SUBCODE	VALVE SUBCODE
0 9	R C (11)	E (12)	D (13)	F U E L X X (14)	Z (15)	Z (16)

(17) LER/RO REPORT NUMBER	EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
	7 8	—	0 4 3	/	0 3	L	—	0

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
Z (18)	X (19)	Z (20)	Z (21)	0 0 0 0	Y (23)	N (24)	N (25)	C 4 9 0 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 Clad failure is corrosive in nature. This singular event is indicative of a random
1 1 failure associated with manufacture and exposure of present day nuclear fuel and has
1 2 been documented as such in the experience of other PWR's. An additional inspection of
1 3 this failure will be scheduled in search of additional information. The Reactor will
1 4 continue to be operated within radiochemistry and axial shape limitations.

	FACILITY STATUS	% POWER	OTHER STATUS (30)	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
1 5	H (28)	0 0 0 (29)	NA	C (31)	Special procedure

	ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
1 6	Z (33)	Z (34)	NA	NA

PERSONNEL EXPOSURES

	NUMBER	TYPE	DESCRIPTION (39)
1 7	0 0 0 (37)	Z (38)	NA

PERSONNEL INJURIES

	NUMBER	DESCRIPTION (41)
1 8	0 0 0 (40)	NA

LOSS OF OR DAMAGE TO FACILITY (43)

	TYPE	DESCRIPTION
1 9	Z (42)	NA

PUBLICITY

	ISSUED	DESCRIPTION (45)
2 0	N (44)	NA

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NRC USE ONLY

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LER 78-043
Omaha Public Power District
Fort Calhoun Station Unit No. 1
Docket No. 05000285

Attachment No. 1

Safety Analysis

The health and safety of the public were not jeopardized by this cladding incident nor did it constitute an unreviewed safety question. Preventing fuel cladding failures are basic to the FSAR and appropriate designs and operating limits were devised.

During Cycle 4 the reactor coolant system was operated within radiochemistry limits. The waste handling system and shielding at Fort Calhoun are designed to accomodate 1% failed fuel. Typical reactor coolant system activities seen during Cycle 4 were well below limits and thereby indicate that the clad failure encountered is a random occurrence.

Failures of this type are similar to those at other facilities (see references listed in cause description) and therefore are not a unique mechanism.

No failures were observed on any of the eight fuel assemblies inspected before reload. These bundles included 5 of 17 "D" assemblies that will be used for Cycle 5. Nothing has been indicated that would adversely affect fuel performance.

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Omaha Public Power District
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Attachment No. 2

Cause Description/Corrective Action

The clad failure is typical of hydriding and could possibly be due to materials defect. Both number of failures (1 pin), the location (upper third of fuel assembly - 4 pins in from corner) of the failure and the lack of other damage in the immediate area tend to rule out handling damage. Further comment will be reserved until an additional visual exam is made.

The constant axial offset control technique was used successfully during Cycles 3 and 4; it will be used during Cycle 5.

The failure mechanism is not unique to the Fort Calhoun Station. The following are provided by the fuel vendor as further background for the fuel pin degradation observed at the Fort Calhoun Station Unit No. 1.

1. A report "Fuel Failures in the Dodeward Boiling Water Reactor" by D. Cordall et. al. Nuclear Technology, Vol. 34, August, 1977, pp. 438-448 (in Holland).

2. CENPD-221, dated December, 1975. "CE EPRI Fuel Performance Evaluation Program Task "C" Evaluation of Fuel Rod Performance in Maine Yankee Core I."