

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

College of Engineering
Department of Mechanical Engineering
Nuclear Engineering Program
104 Nuclear Engineering Lab
Ames, Iowa 50011-2230
515 294-5840

Docket No. 50-116

October 25, 1991

Regional Administrator
Region III
Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

SUBJECT: Special Report of Roll Pin Cracking Found in the Fuel
Handling Cones at Iowa State University's UTR-10 Reactor

Dear Sir:

This is a written transcript of the information provided to NRC Region III on October 24, 1991, of roll pin cracking which was observed on October 23, 1991.

Special Report Transcript:

In accordance with the requirements of paragraph 6.6.2 of the Technical Specifications of license R-59, we are making this special report to the NRC.

While performing a low enriched uranium (LEU) fuel element inspection a hairline crack was noticed in the 1/4" x 2" stainless steel roll pin which is pressed into the fuel element handling cone. The roll pin and cone combination provide a means of mating the fuel handling tools of the fuel element. The roll pin supports the weight of the fuel element during insertion and removal operations. Failure of this roll pin while handling fuel could result in a dropped fuel element and mechanical damage of the fuel cladding. Reactor management determined that an inspection of the remaining 11 elements was necessary. The remaining 11 elements were inspected on October 24, 1991, and all exhibited similar cracking.

The cause of the cracking is unknown at this time. Reactor operations have been suspended while the cause of the pin cracking is determined and an appropriate replacement for the roll pins is identified and installed. The ISU UTR-10 Reactor Use Committee has been informed.

End of Transcript.

This notification was made by telephone to the NRC Region III at 1600 hours on October 24, 1991, by John T. Adams, Reactor Supervisor.

9111010168 911025
PDR ADOCK 05000116
S PDR

JE22 11

Questions may be directed to Dr. Richard Hendrickson, Reactor Manager at (515)294-6422 or (515)233-1248, or to John Adams, Reactor Supervisor at (515)294-0539.

Sincerely,

Richard Danofsky

Richard A. Danofsky
Facility Director

RAD/rp

Enclosure

cc: Charles Cox, NRC Region III

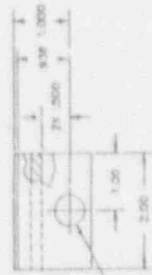
Ted H. Okiishi, Chairman, Mechanical Engineering Department

Richard Hendrickson, Reactor Manager

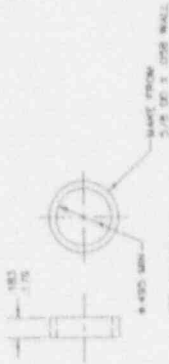
Tom L. Zimmerman, Chairman, Reactor Use Committee

US NRC Document Control Desk

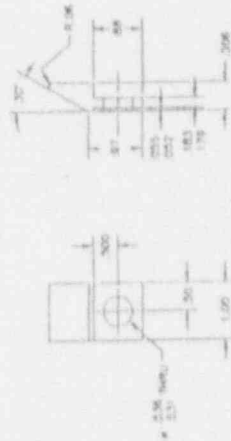
1. *STRUCTURE, FABRICITY AND INSPECT FOR QUALITY* FROM 1938-39.



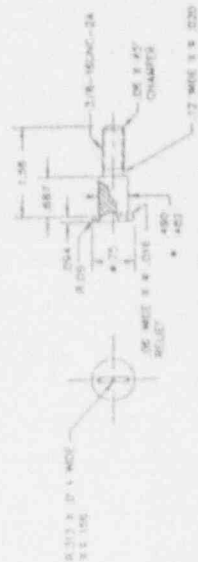
④ DETAIL



④ DETAIL
Scale = 2/1



④ DETAIL



⑦ DETAIL

1	A	-5	SPACER	AL ALLOY	ASTM	8
2	A	-5	ORSE	6061-T6		9
3	A	-4	SPACER	AL ALLOY	ASTM	10
4	A	-5	PIN	6061-T6		11
5	A	-3	SCREW	6061-T6		12
6	A	-1	CHMT	6061-T6		13
7	A	-1	CHMT	6061-T6		14
8	A	-1	CHMT	6061-T6		15
9	A	-1	CHMT	6061-T6		16
10	A	-1	CHMT	6061-T6		17
11	A	-1	CHMT	6061-T6		18
12	A	-1	CHMT	6061-T6		19
13	A	-1	CHMT	6061-T6		20
14	A	-1	CHMT	6061-T6		21
15	A	-1	CHMT	6061-T6		22
16	A	-1	CHMT	6061-T6		23
17	A	-1	CHMT	6061-T6		24
18	A	-1	CHMT	6061-T6		25
19	A	-1	CHMT	6061-T6		26
20	A	-1	CHMT	6061-T6		27
21	A	-1	CHMT	6061-T6		28
22	A	-1	CHMT	6061-T6		29
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73	A	-1	CHMT	6061-T6		80
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75	A	-1	CHMT	6061-T6		82
76	A	-1	CHMT	6061-T6		83
77	A	-1	CHMT	6061-T6		84
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88	A	-1	CHMT	6061-T6		95
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91	A	-1	CHMT	6061-T6		98
92	A	-1	CHMT	6061-T6		99
93	A	-1	CHMT	6061-T6		100

69-806

KODAK STATE UNIVERSITY
TEST RESEARCH AND
TRAINING REACTION
FUEL ELEMENT COMPONENTS

DATE 6-17-70

NOTES:

1. REWORK FABRICATE AND INSPECT PER SPECIFICATION 19.19.37.
2. MARK FOR SPECIFICATION 19.19.37 WITH ASSIGNED SERIAL NUMBER.
3. SURFACE UNIFORMITY 6.3 UNLESS OTHERWISE SPECIFIED.
4. MAXIMUM CLADDING MAX. DIA. TO BE VERIFIED.



DATA	ON	REMARKS
1	0.75	MAX DIA. CORE
2	0.75	MAX DIA. CORE

ITEM	NO.	DESCRIPTION	QTY	UNIT	REMARKS
1	1	PLATE AL ALLOY	1	PC	AS PER 19.19.37
2	1	PLATE AL ALLOY	1	PC	AS PER 19.19.37
3	1	PLATE AL ALLOY	1	PC	AS PER 19.19.37
4	1	PLATE AL ALLOY	1	PC	AS PER 19.19.37
5	1	PLATE AL ALLOY	1	PC	AS PER 19.19.37
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97	1	PLATE AL ALLOY	1	PC	AS PER 19.19.37
98	1	PLATE AL ALLOY	1	PC	AS PER 19.19.37
99	1	PLATE AL ALLOY	1	PC	AS PER 19.19.37
100	1	PLATE AL ALLOY	1	PC	AS PER 19.19.37

SECTION A-A

Distribution

Q.C. Audit & Release (1)
 Q.C. Foreman (1)
 Foreman (1)
 Prod. Control (2)
 John & Louie (1) Fuel Plate Only
 Accountability (1)

Contract/Job No. C29000113, Task 39

B&W certifies that the supplies listed hereon conform to all contract requirements, including all applicable statistical requirements, and that substantiating data are on file.

Release No.	Component		Spec. & Rev. No.		
B25-001	Name	Identification			
P.O. Number			Drawing 431708		
N/A	SS Roll Pins	Part No. 92383A464	TRTR-21, Revision 0, dated 8/20/90		
Sub-Contractor McMaster-Carr Supply Co.	Drawing 431708	GR/PC <u>N/A</u> Rev. <u>N/A</u>	Last Oper. Cert.	Release For Production	Qty. & Weight 100

Remarks:

Size: $\frac{1}{4}$ " dia. x 2" lg.

Type: 420

Waivers: NONE

Signed Q.C.

J. P. Arnold

Date

11/20/90

16

NJ 083-420

473568701

McMASTER-CARR SUPPLY COMPANY
MONROUTH JUNCTION ROAD
NEW CANAAN, NJ 08810

SHIP TO
BARCOCK C. WILCOX CO.
A MC CORMICK CO.
NAVAL NUCLEAR FUEL DIV
MOUNT ATHOS RD
LYNCHBURG

MARK FOR

SHOP 46

IF THERE ARE ANY QUESTIONS REGARDING THIS
ORDER, PLEASE CONTACT OUR

SALES DESK (201) 326-1500
340005-00 340005-00 340005-00

6735687-01

213

173

Quick Look in the Big MacMaster



PACKING LIS

CUSTOMER ORDER NO.
1056AJP05123

QUANTITY NO.
3735687-01

ITEM NO.	LOCATION	DESCRIPTION	QUANTITY
1	1110208	220 STAINLESS STEEL SPRING FIN 100 EA TYPE A20 SIZE 1/4 X 2	EA 1100 PKG 100 EA/PK

340005-00 340005-00 340005-00

RELIABILITY • INTEGRITY • SERVICE