



TENNESSEE VALLEY AUTHORITY  
CHATTANOOGA, TENNESSEE 37401

*Central File*  
*50-260*

May 12, 1976

Mr. Norman C. Moseley, Director  
U.S. Nuclear Regulatory Commission  
Region II  
230 Peachtree Street, NW., 8th Floor  
Atlanta, Georgia 30303

Dear Mr. Moseley:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 2 -  
DOCKET NO. 50-260 - FACILITY OPERATING LICENSE DPR-52 - ABNORMAL  
OCCURRENCE REPORT BFAO-50-260/763W

The enclosed report is to provide details concerning five reed relay failures which were discovered during RMCS retesting and is submitted in accordance with Appendix E to Regulatory Guide 1.16, Revision 4, August 1975. This event occurred on Browns Ferry Nuclear Plant unit 2.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*H. S. Fox*  
H. S. Fox

*for* Director of Power Production

Enclosure (3)

CC (Enclosure):

Director (3)

Office of Management Information and Program Control  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Director (40)

Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

# LICENSEE EVENT REPORT

CONTROL BLOCK: 1 2 3 4 5 6

(PLEASE PRINT ALL REQUIRED INFORMATION)

LICENSEE NAME

LICENSE NUMBER

LICENSE TYPE

EVENT TYPE

8	9	14	15	25	26	30	31	32																																					
A		L		B		R		F		2		0		0		-		0		0		0		0		-		0		0		4		1		1		1		1		0		1	

8	9	57	58	59	60	61	68	69	74	75	80																																
CON'T		*		0		L		0		5		0		-		0		2		6		0		0		4		1		2		7		6									

## EVENT DESCRIPTION

During RMCS retesting, five reed relay failures were discovered, four of which would permit the sequential selection and withdrawal of adjacent control rods when in the REFUEL mode, and one of which would allow two control rods to be withdrawn simultaneously in all but shutdown mode of operation. (BFA0-50-260/763W)

9	10	11	12	17	43	44	47	48																					
R		B		B		R		E		L		A		Y		X		N		C		3		4		5		N	

## CAUSE DESCRIPTION

Failed contacts on C. P. Claire reed relays (model MR4MC-1023)

9	10	12	13	44	45	46	80						
G		0		0		0		NA		C		NA	

9	10	11	44	45	80		
Z		Z		NA		NA	

## PERSONNEL EXPOSURES

9	11	12	13	80					
0		0		0		Z		NA	

## PERSONNEL INJURIES

9	11	12	80				
0		0		0		NA	

## OFFSITE CONSEQUENCES

NA

## LOSS OR DAMAGE TO FACILITY

9	10	80	
Z		NA	

## PUBLICITY

NA

## ADDITIONAL FACTORS

SEE ATTACHMENT

NAME: \_\_\_\_\_ PHONE: \_\_\_\_\_

#### ADDITIONAL FACTORS

Simultaneous withdrawal of two control rods require the following conditions coincidentally:

1. Control rod with the failed (contacts closed) reed relay selected first, and
  - a. In the startup and run modes, the second control rod must be selected within the first 0.4 second of the withdrawal cycle of the first control rod, or
  - b. In the refuel mode, there is no time restraint in selecting and withdrawing the second control rod.

Sequential withdrawal of two adjacent control rods requires:

1. Control rod with the failed (contacts open) reed relay selected and withdrawn, it is then possible to select and withdraw a second adjacent control rod, without a time restraint.

To correct this problem, a voltage monitoring circuit will be added to the RSCS and a rod withdrawal prohibit circuit will be added to the RMCS on all units. Defective reed relays were replaced and proper circuit functions verified.

