



ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649

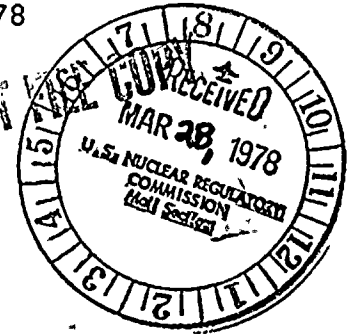
LEON D. WHITE, JR.  
VICE PRESIDENT

TELEPHONE  
AREA CODE 716 546-2700

March 21, 1978

Mr. Boyce H. Grier, Director  
U. S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Region I  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

REGULATORY DOCKET



Subject: Supplemental report on Reportable Occurrence 77-023/1T,  
control rod urgent failure rod stop  
R. E. Ginna Nuclear Power Plant, Unit No. 1  
Docket No. 50-244

Dear Mr. Grier:

The attached update report LER 77-023/1X-1 provides additional information obtained during the investigation connected with the subject event.

Two additional copies of this letter and the attachment are enclosed to conform to the original submittal of LER 77-023/01T-0.

Very truly yours,

*L. D. White, Jr.*  
L. D. White, Jr.

Attachment

cc: Dr. Ernst Volgenau (40)  
Mr. William G. McDonald (3)

780870020

A002/5 \*  
1/1

CONTROL BLOCK:

1 6

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 N Y R E G 1 2 0 0 - 0 0 0 0 0 - 0 0 3 4 1 1 1 1 4 5  
7 8 9 14 15 25 26 30 57 58

CON'T

0 1 L 6 0 5 0 0 0 2 4 4 7 1 1 1 6 7 7 8 0 3 2 1 7 8 9  
7 8 60 61 68 69 74 75 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 During steady load Rod control urgent failure rod stop alarm lit and auto rod motion was  
0 3 stopped. Unit was shut down by boration, with rod insertion control available in bank  
0 4 mode. I & C Techs. examined the involved circuitry in 1BD and 2BD power cabinets  
0 5 and the logic cabinet. Normal rod drop would not have been impeded upon trip signal.  
0 6  
0 7  
0 8

0 9 R B 11 E 12 G 13 C R D R V E 14 Z 15 Z 16  
7 8 9 10 11 12 13 18 19 20

17 LER/RO REPORT NUMBER 7 7 21 22 23 24 26 27 28 29 30 31 32 REVISION NO. 1  
ACTION TAKEN A 18 Z 19 EFFECT ON PLANT A 20 SHUTDOWN METHOD A 21 HOURS 0 0 2 7 22 ATTACHMENT SUBMITTED Y 23 NPRD-4 FORM SUB. Y 24 PRIME COMP. SUPPLIER N 25 COMPONENT MANUFACTURER W 1 2 0 26  
33 34 35 36 37 40 41 42 43 44 47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 Random failure of 2 defective p.c. cards; Westinghouse slave cyclor stationary decoder,  
1 1 card, part no. 3359C62G02, and slave cyclor logic card integrated circuit chip,  
1 2 Motorola model MC660L, were replaced with qualified spares. All potentially faulty  
1 3 connections from logic cabinet to 2BD and cage were crimped or soldered. Rod system  
1 4 was successfully tested, and unit returned to operation. Later info on attached.

1 5 E 28 1 0 0 29 OTHER STATUS 30 NA METHOD OF DISCOVERY A 31 DISCOVERY DESCRIPTION 32 Control Board Alarm  
7 8 9 10 12 13 44 45 46 80

1 6 Z 33 Z 34 AMOUNT OF ACTIVITY 35 NA LOCATION OF RELEASE 36 NA  
7 8 9 10 11 44 45 80

1 7 0 0 0 37 Z 38 DESCRIPTION 39 NA  
7 8 9 10 11 12 13 80

1 8 0 0 0 40 DESCRIPTION 41 NA  
7 8 9 10 11 12 80

1 9 Z 42 DESCRIPTION 43 NA  
7 8 9 10 80

2 0 N 44 DESCRIPTION 45 NA  
7 8 9 10 80

Attachment to LER 77-023/01X-1  
R. E. Ginna Nuclear Power Plant, Unit No. 1  
Docket No. 50-244

On November 16, 1977 at approximately 1318 hours, control board alarm "Rod Control Urgent Failure, Rod Stop" was received. This alarm condition renders the control rods inoperable in the automatic and manual modes, although still capable of being moved in the unaffected Bank Control mode and in the event of a reactor trip. An orderly reactor shutdown was initiated at the direction of the Plant Superintendent.

Further investigation revealed a Stationary "B" Regulation (Control Bank D) failure in control rod power cabinets 1BD and 2BD. Instrument and Control Technicians initiated troubleshooting in cabinets 1BD and 2BD. By interchanging stationary circuit p.c. cards with cards in other cabinets, the failure was traced to the logic cabinet. While attempting to identify the exact location of the fault, control rod G-3 inserted into the core. Shortly thereafter, at approximately 0100 hours on November 17, 1977, the reactor was tripped. Continued troubleshooting revealed the source of the failure as a faulty slave cyler stationary decoder card (PN 3359C62GO2) which was replaced, and a faulty slave cyler logic card (PN 3359C80GO1) which was repaired by replacing a defective integrated circuit chip (Motorola Model MC660L). In addition, all potentially faulty connections between the logic cabinet and the 2BD card cage were crimped or soldered.

Each bank was moved to 230 steps and back, and current traces obtained for all drive mechanisms appeared normal. The unit was then returned to service.

Since this event is considered to be an instance of random component failure, no further action is planned to prevent recurrence.

The following is provided as supplementary information independent of the cause of failure. The above current traces were reviewed by Westinghouse specialists who noted that the time interval between stationary coil mechanism latch in and movable coil mechanism drop out was shorter than normal. A second set of traces from all control rod drive mechanisms was obtained December 14, 1977 and sent to Westinghouse for evaluation. Following this, Westinghouse requested a polarity check on three designated rods. On January 11, 1978 the polarity check was performed, indicating polarity reversals. On January 29, 1978 a polarity check was performed on all 29 rods which indicated 27 movable coil polarity reversals and 2 lift coil polarity reversals. These were all corrected and rechecked. Current traces taken indicated proper timing, and resistance measurements on each coil indicated no abnormalities. Each coil meggered resistance to ground was infinite. Current traces were again taken on February 3, 1978 and sent to Westinghouse for verification of proper timing. The report of the Westinghouse evaluation stated that no problems were indicated.