



CHARLES CENTER • P. O. BOX 1475 • BALTIMORE, MARYLAND 21203

ARTHUR E. LUNDVALL, JR.  
VICE PRESIDENT  
SUPPLY

March 30, 1983

U. S. Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

ATTENTION: Mr. Ronald C. Haynes  
Regional Administrator

SUBJECT: Calvert Cliffs Nuclear Power Plant  
Unit Nos. 1 & 2, Docket Nos. 50-317 & 50-318  
IE Bulletin 83-04: Failure of the Undervoltage Trip Function of Reactor  
Trip Breakers

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Reference: a) Letter A. E. Lundvall, Jr. to R. C. Haynes of  
March 21, 1983

Gentlemen:

At the request of the Resident Inspector and to preclude any possibility of misinterpretation regarding our response in Reference (a), we are forwarding the attached Enclosure. This Enclosure, duplicates the response portion of Item No. 1 from Enclosure 1 to Reference (a) with two additional parenthetically enclosed comments, clarifying our previous response.

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Mr. R. C. Haynes  
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Should you have further questions regarding the enclosed or previous correspondence, please do not hesitate to contact us.

Very truly yours,

C. E. Lundvall Jr

Vice President - Supply

AEL/LOW/sjb

Enclosure

STATE OF MARYLAND :  
: TO WIT:  
CITY OF BALTIMORE :

Author E. Lundvall, Jr., being duly sworn states that he is Vice President of the Baltimore Gas and Electric Company, a corporation of the State of Maryland; that he provides the foregoing response for the purposes therein set forth; that the statements made are true and correct to the best of his knowledge, information, and belief; and that he was authorized to provide the response on behalf of said Corporation.

**WITNESS** my Hand and Notarial Seal:

Notary Public

My Commission Expires:

Notary Public  
July 1, 1986

cc: J. A. Biddison, Esquire  
G. F. Trowbridge, Esquire  
D. H. Jaffe, NRC  
R. E. Architzel, NRC

## ENCLOSURE (1)

### ITEM NO. 1

Provide a written reply identifying the results of testing performed to verify the operability of the undervoltage trip function independent of the shunt trip function.

### RESPONSE

We have completed on-line surveillance testing of the shunt and undervoltage trip mechanisms, independently, to verify operability of each device for both units. The test consisted of manually initiating a trip and measuring the response time for each breaker to reach its protective system trip condition. In all cases, each breaker achieved the protective system trip condition and under actual Reactor Protective System (RPS) trip conditions a RPS trip (considering the redundant nature of the Shunt and U/V devices) would have resulted within the design response times assumed in the Final Safety Analysis Report (0.4 seconds for the most limiting RPS Trip).

Certain undervoltage (U/V) trip devices, measured individually, did not meet the response time criteria used during the test. (An average response time computed from three individual test trials was used to account for variations associated with the testing method. Except for those listed below, only one other test trial exceeded .400 seconds. The first test trial on TCB-5 for Unit 1 resulted in a response time of .48 seconds although the average for the three trials was .38 seconds and satisfied the response time criteria established for the test). Those individual U/V trip devices are listed below. Upon completion of repetitive test, corrective maintenance was performed on the out-of-specification U/V devices and each device was subsequently retested and determined to be within specification.

RESULTS OF TESTING (Maximum response time criteria  $\leq 0.400$  sec.)

<u>TRIP DEVICE NO.</u>	<u>U/V TRIP DEVICE TEST TRIALS (SECONDS)</u>				<u>POST MAINTENANCE RESPONSE TIME (SECONDS)</u>		
	<u>1ST</u>	<u>2ND</u>	<u>3RD</u>	<u>AVG.</u>	<u>HIGH</u>	<u>LOW</u>	<u>AVG**</u>
<u>UNIT 1</u>							
TCB-1	1.280	4.040	8.600	4.640	0.072	0.048	0.058
TCB-3	0.112	2.300	0.064	0.830	0.048	0.048	0.048
TCB-4	8.470	5.320	0.360	4.720	0.052	0.048	0.050
<u>UNIT 2</u>							
TCB-3	24.640	0.064	0.072	8.300	0.048	0.048	0.048
TCB-7*	0.200	0.160	0.680	0.350	0.088	0.052	0.062
TCB-8	0.712	0.600	1.248	0.850	0.392	0.100	0.235

\* Selected for corrective maintenance to improve response time.

\*\* Average of at least five (5) test trials.