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UNCLASSIFIED

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW	
1st Review Date: 9-16-98	Determination (Circle Numbers):
Authority: ☐ ADC ☒ ADD	1. Classification Retained
Name: W Layne	2. Classification Changed to: U
2nd Review Date: 9/21/98	3. Contains No DOE Classified Information
Authority: ADD	4. Coordinate With:
Name: R B Craner	5. Contains UCAI? no
	6. Comments:
	OK for Approval

August 10, 1964

File: MC1915, 3-2
T-25900
Test Completed 7-14-64

RECEIVED

AUG 11 1964

CENTRAL TECH FILE

CENTRAL TECHNICAL FILE
AUTHORIZATION CARD BB
FILE NO. MC 1904
3-2
C/R MC 1915 3-2
C/R MC 19.. 3-2
C/R MC 191.. 3-2

To: P. J. Komen - 1422

Attn: C. E. Johnston - 1422-3

From: G. P. Barnett - 7332-3 G P Barnett

Re: Nuclear Radiation Tests on Four Timers: MC1904, Serial No. 1045, MC1915, Serial No. 106, MC1916, Serial No. 129, and MC1919, Serial No. 119, all Manufactured by Bendix, Kansas City.

Object of Test

The object of this test was to determine the tolerance of the four timers to a nuclear radiation environment as provided by the Sandia Pulse Reactor.

Authorization for Test

This test was requested by Division 1422 in a Work Order Authorization received June 29, 1964. Mr. C. E. Johnston was the consultant. The material for test was received July 3, 1964.

Functional Measurements and Methods

Functional measurements were made on each unit following each radiation exposure to which that unit was subjected. These functional measurements were performed by personnel in Organization 4631.

The nuclear radiation environment was provided by the Sandia Pulse Reactor Facility located in Area V.

The neutron doses reported herein were obtained through the use of sulphur dosimetry.

Procedure and Results

One MC1904, one MC1915, one MC1916, and one MC1919 were subjected to nuclear radiation as provided by the Sandia Pulse Reactor Facility located in Area V. Each component was subjected to successive bursts of approximately 1×10^{12} NVT ($E_N \geq .01$ Mev) until functional tests after the radiation exposures indicated that significant degradation had occurred.

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SANDIA SYSTEMATIC DECLASSIFICATION REVIEW DOWNGRADING OR DECLASSIFICATION STAMP	
CLASSIFICATION CHANGED TO: U	AUTHORITY: R.B. Craner
Emelda Selph 9/24/98	
PERSON CHANGING MARKING & DATE	RECORD ID: 98SW4389
W L Layne 9/28/98	
PERSON VERIFYING MARKING & DATE	DATED: 9/21/98

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Testing was accomplished by positioning the components so that the face designated by the consultant was nearest the reactor screen. One sulphur dosimeter was used on each component for each exposure. The dosimeters were located on the surface of each component which was nearest the reactor screen.

The measured neutron radiation levels to which the components were exposed are given below.

Radiation Exposure No.	Components Which Were Exposed	Neutron Dose on Given Exposure No. NVT ($E_N \geq 0.01$ Mev)	Accumulated Neutron Dose on Exposures Up to and Including Given Exposure NVT ($E_N \geq 0.01$ Mev)
1	MC1904	0.96×10^{12}	0.96×10^{12}
	MC1915	0.96×10^{12}	0.96×10^{12}
	MC1916	0.96×10^{12}	0.96×10^{12}
	MC1919	0.96×10^{12}	0.96×10^{12}
2	MC1904	0.95×10^{12}	1.91×10^{12}
	MC1915	1.03×10^{12}	1.99×10^{12}
	MC1916	0.96×10^{12}	1.92×10^{12}
	MC1919	1.01×10^{12}	1.97×10^{12}
3	MC1915	0.89×10^{12}	2.88×10^{12}
	MC1916	0.93×10^{12}	2.85×10^{12}
	MC1919	1.01×10^{12}	2.98×10^{12}
4	MC1904	0.93×10^{12}	2.84×10^{12}
5	MC1904	1.02×10^{12}	3.86×10^{12}

After exposure No. 2, both channels of the MC1904, MC1915 and the MC1916 were still functioning satisfactorily. Channel one of the MC1919, however, was no longer functional after the second burst.

The MC1904 was not subjected to exposure No. 3 because a tester malfunction delayed the functional tests on this unit.

After exposure No. 3, neither of the two channels of the MC1915 and the MC1916 were functioning. The second channel of the MC1919 was also inoperative at this time.

Channel 2 of the MC1904 was no longer functional after exposure No. 4 and this component was completely inoperative after exposure No. 5.

A complete analysis of the failure mechanisms in the four components was not available at the time this report was written.

S. D. Meyer for

B. L. Schmedeman - 7332-3

S. D. Meyer

S. D. Meyer- 7332-3

BLS:7332-3:cm

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