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# BIBLIOGRAPHY FOR ELECTRICAL OVERSTRESS REVIEW

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The BDM Corporation  
2600 Yale Blvd., S.E.  
Albuquerque, New Mexico 87106

10 October 1976

Topical Report for Period March 1976—October 1976

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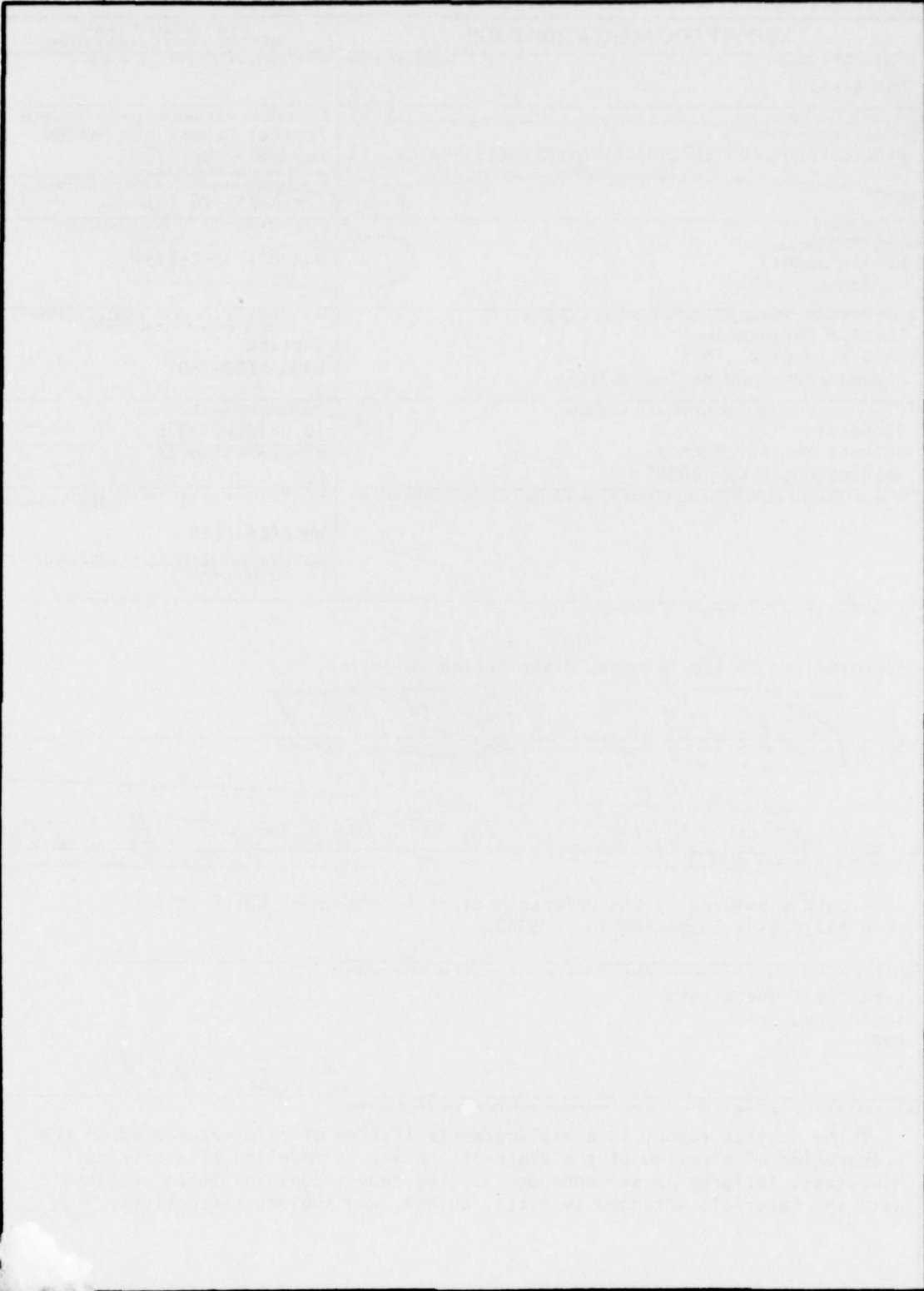
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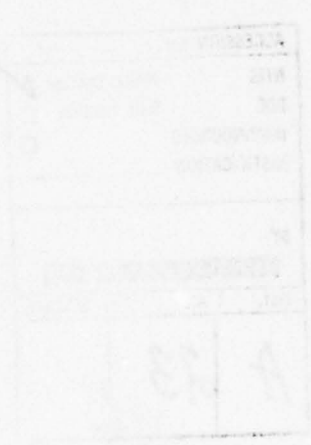
PREFACE

The following report contains a bibliographic listing of all materials utilized by The BDM Corporation in the performance of a review of electrical overstress effects in semiconductors under DNA Contract DNA001-76-C-0191. This work was sponsored by The Defense Nuclear Agency under RDT&E RMSS Code B323076464 Z99QAXTB097 H2490D.

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CHAPTER I  
INTRODUCTION

The following report contains a bibliographic listing of literature sources utilized in a review of electrical overstress phenomenology. The review included the topics concerned with burnout of semiconductor junctions when exposed to electrical transients resulting from the following environments:

- (1) EMP (Electromagnetic Pulse)
- (2) IEMP (Internal Electromagnetic Pulse)
- (3) Ionizing Dose Rate ( $\dot{\gamma}$ )
- (4) Synergistic Combinations of These Environments

The documents which were examined in the literature survey included both system documents, which related the waveforms at component terminals to the interaction between the environment and the system, and semiconductor physics documents, which related the terminal waveforms to the device failure threshold. The results of the review and recommendations for further investigations are contained in a separate document (BDM/A-212-76-TR).

The bibliography is presented in three sections, appendixes A, B, and C, respectively. Appendix A contains the listing arranged alphabetically according to the author's last name. Entries in the listing include the title, publication, and date. Appendix B is identical except that the entries are arranged alphabetically by the title. Appendix C is a subject listing of the bibliographic material. Since reports often contain material on multiple subjects, individual documents may appear under several headings. Entries in appendix C give only title and document number. More complete information on the reference can be obtained by referring to appendix B. The subject areas used for organization of appendix C include:

- |                      |                               |
|----------------------|-------------------------------|
| (1) Aircraft         | (20) Microwave                |
| (2) Analysis         | (21) MISSILES                 |
| (3) Avalanche        | (22) Nondestructive Screening |
| (4) Avionics         | (23) Power                    |
| (5) Cables           | (24) Prediction               |
| (6) Cable, Coaxial   | (25) Radiation                |
| (7) Components       | (26) Radios                   |
| (8) Coupling         | (27) Reliability              |
| (9) Current          | (28) Resistance               |
| (10) Diodes          | (29) Response                 |
| (11) Doping          | (30) Screening                |
| (12) EMP             | (31) Second Breakdown         |
| (13) Equipment       | (32) Semiconductors           |
| (14) Failures        | (33) Spacecraft               |
| (15) FETS            | (34) Subsystems               |
| (16) Hardening -     | (35) Systems                  |
| (17) IC              | (36) Thyristors               |
| (18) IEMP            | (37) Transients               |
| (19) Instrumentation | (38) Transistors              |
|                      | (39) Voltage                  |

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TRW Defense & Space Sys. Group  
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