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### ABSTRACT

### ACKNOWLEDGEMENTS

## LIST OF SYMBOLS      IGNITION OF SENSITIVE MATERIALS BY LOW ENERGY ELECTRICAL DISCHARGES

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APPENDIX B CAPACITIVE DISCHARGE ANALYSIS PROCEDURES

In this study high voltage pulse and capacitive discharge apparatus and techniques for the generation and measurement of low energy gaseous discharges. Capacitive and pulse discharges could be of unidirectional arc-like, unidirectional current. A capacitive discharge was reduced through the  $10^{-3}$ A range transition from arc-like to glow-like characteristics was observed, corresponding with an observed decrease in stored energy and optimum time constant for capacitive discharge ignition. A decrease in observed sensitivity corresponded to low discharge currents ( $10^{-3}$ A or less) where pulse train discharges could form.