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# EVALUATION OF NONCONTACT POWER COLLECTION TECHNIQUES

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## FINAL REPORT

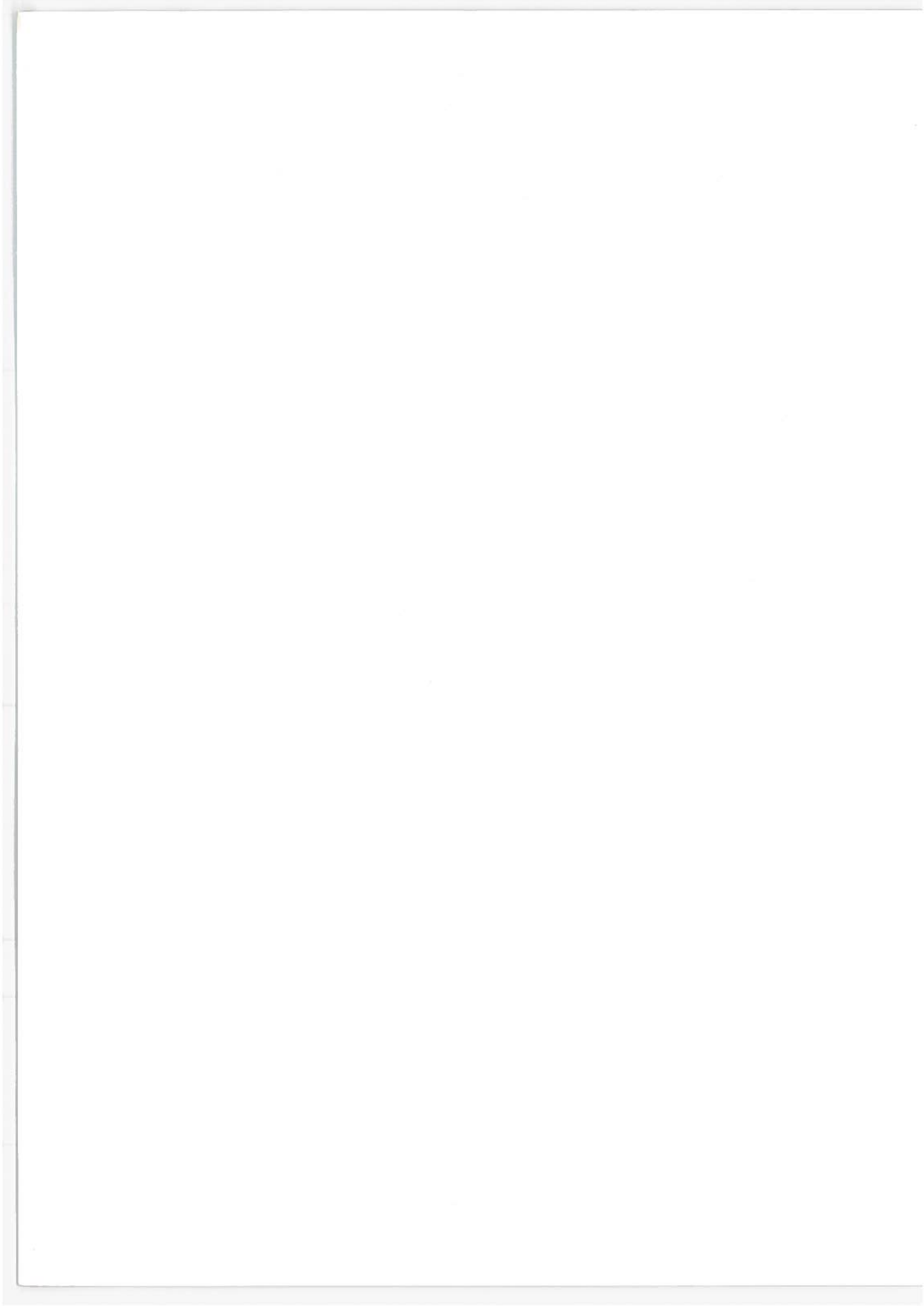
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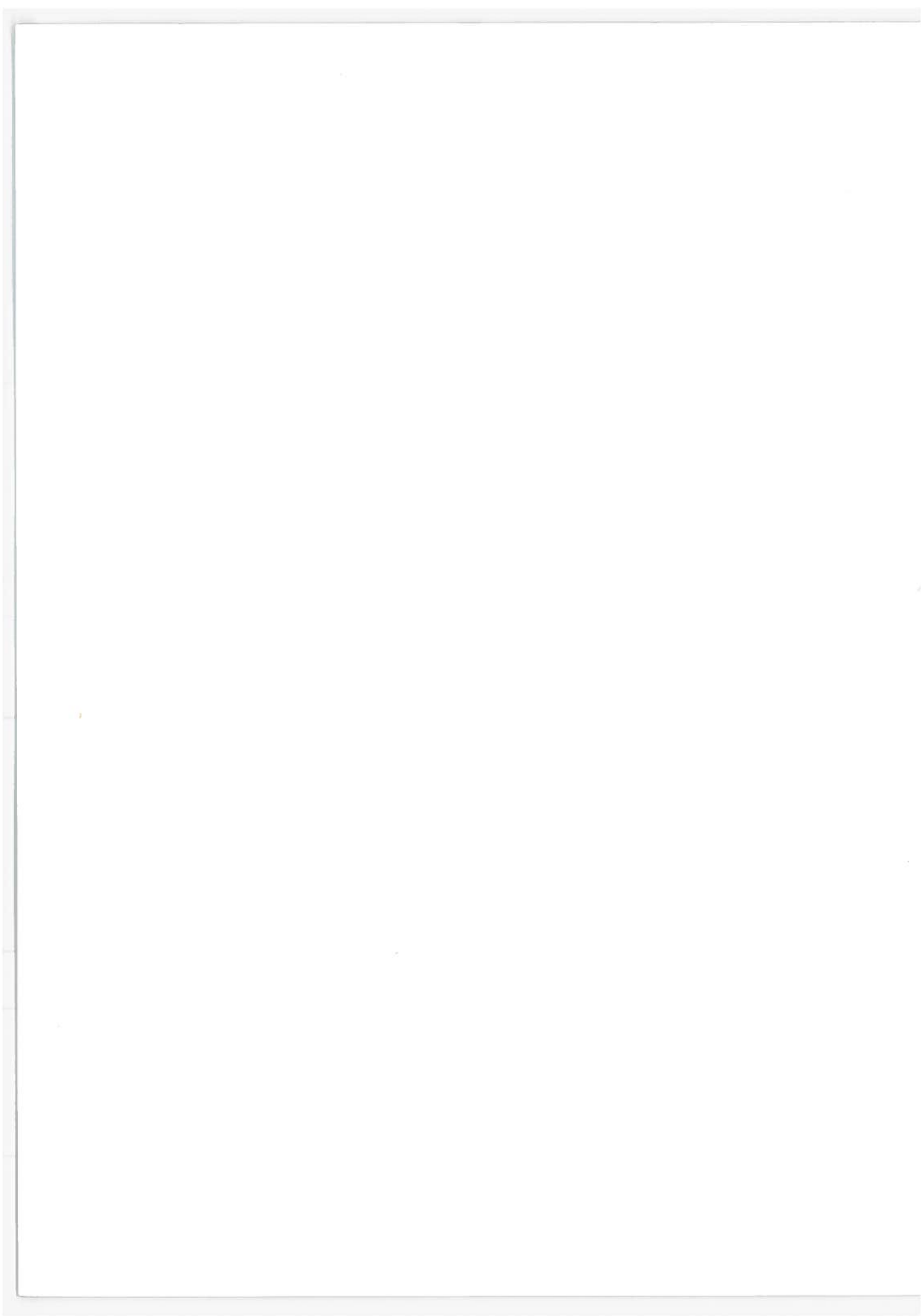
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16. Abstract  <p>An evaluation is made of four basic noncontacting techniques of power collection which have possible applicability in future high-speed ground transportation systems. The techniques considered include the electric arc, magnetic induction, electrostatic (capacitive) coupling, and electromagnetic waveguide coupling. The report concludes that the electric arc is the only feasible technique from the standpoint of power coupling efficiency and design practicality.</p> <p>A test program is recommended for investigating the power transfer capabilities of the arc coupler. Details of an experimental test setup are presented which can be used to obtain empirical data required for the design of a prototype unit.</p>			
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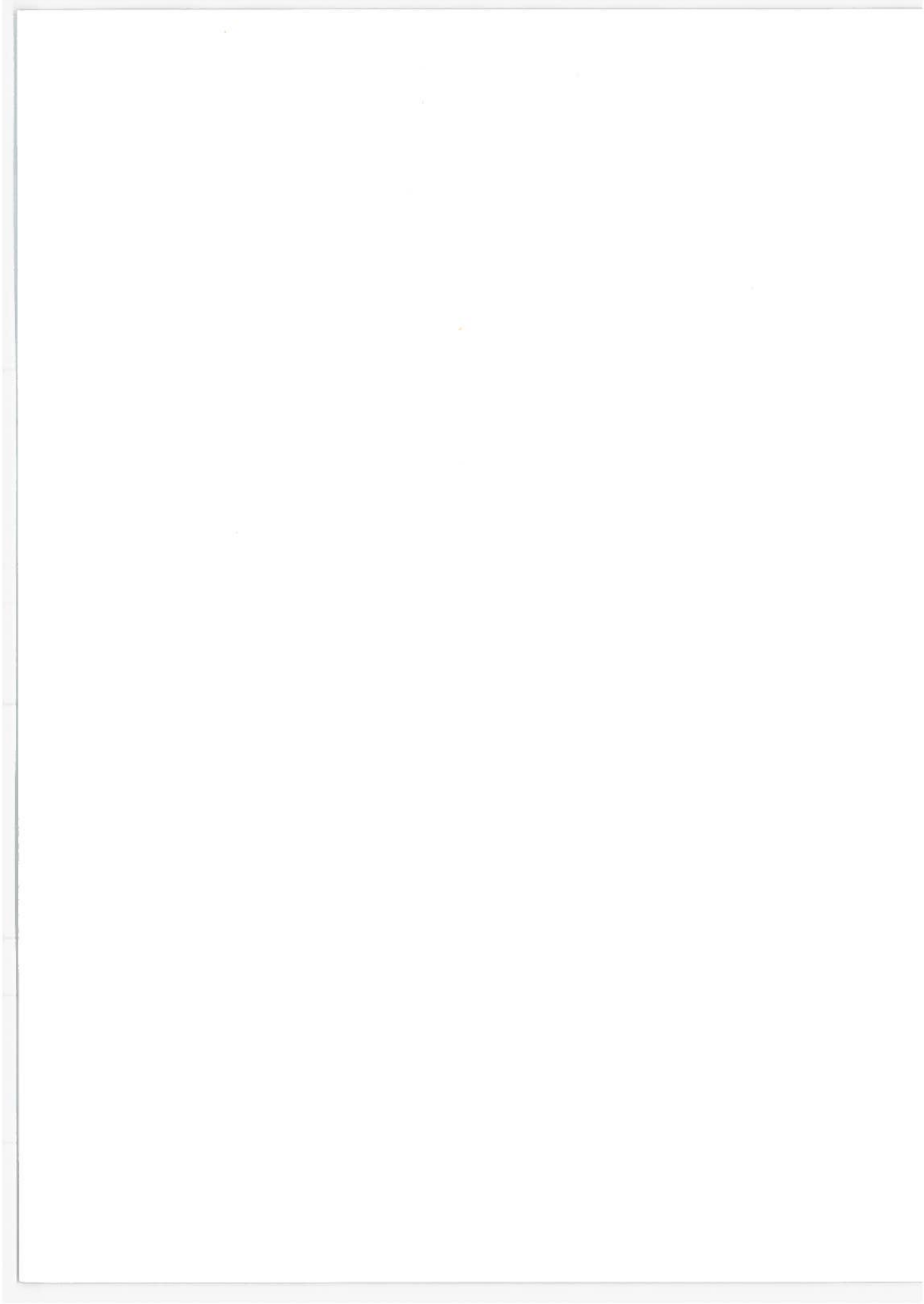
This report reviews the various techniques of noncontact energy transference which have possible applicability for use in future high-speed ground transportation systems (HSGS). Since the initial study program undertaken by the General Electric Company in 1968 dealing with the feasibility of noncontact power collection for high-speed railway vehicles, important advances have been made in this field. The most recent contribution to this field is represented by the important work done at the Brannschweig Technical University on energy transference using electric arcs. These research efforts as well as those previously conducted, but not generally reported, are summarized in this report.

The author wishes to gratefully acknowledge certain discussions with Dr. T. B. Jones, formerly of Johns Hopkins University, and to thank Mr. P. McManus, also formerly of Johns Hopkins University, for permission to use portions of his thesis in this report.



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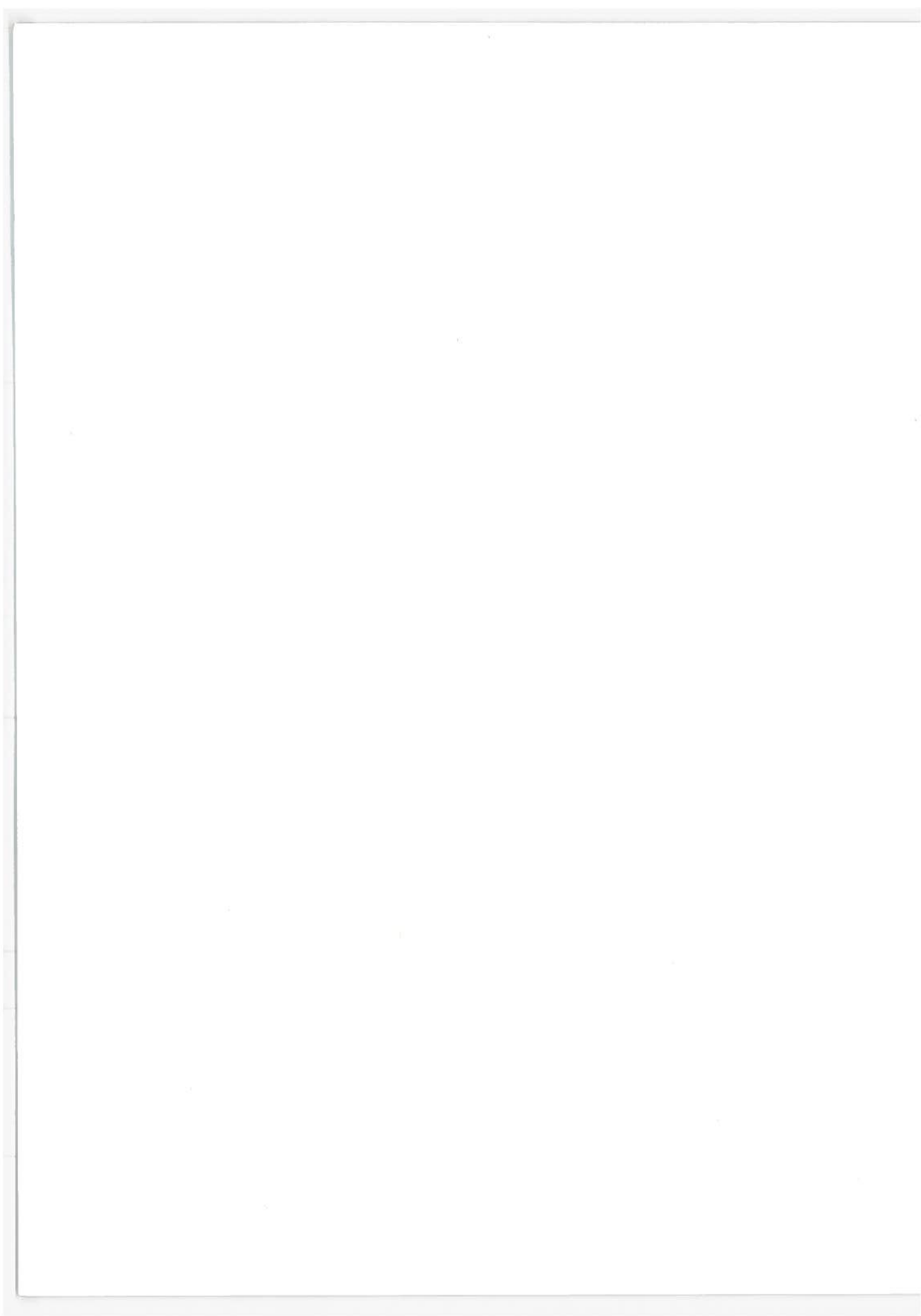
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