

XXVI. ENERGY CONVERSION RESEARCH*

Academic and Research Staff

Prof. J. L. Kerrebrock
Prof. M. A. Hoffman
Prof. A. Solbes

Graduate Students

R. Decher
H. J. DeJong

M. L. Hougen
E. D. Riley

RESEARCH OBJECTIVES AND SUMMARY OF RESEARCH

Our research is a continuing study of advanced concepts in energy conversion. The objectives of this program are to identify promising new methods of energy conversion, and to carry out the research required to demonstrate their technical feasibility.

We have been exploring the feasibility of Rankine-cycle space power systems incorporating nonequilibrium magnetohydrodynamic generators. At present, the major effort is directed toward obtaining a basic understanding of the behavior of such generators, by operating and analyzing a generator of realistic size.

We are also exploring the system aspects of nuclear-MHD power systems.

Our major effort during the past quarter has been the analysis of the data obtained from the generator runs of the previous quarter. The doctoral thesis of Reiner Decher has been completed.

Some attention has been given to the design of an improved preionizer. It appears that a magnetically spun discharge just upstream of the nozzle throat is the best choice. Such a device will be constructed.

J. L. Kerrebrock

*This work is supported by the U. S. Air Force (Research and Technology Division) under Contract F33615-67-C-1148 with the Air Force Aero Propulsion Laboratory, Wright-Patterson Air Force Base, Ohio.

