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RESEARCH AND DEVELOPMENT

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"A Cryocooler for High Acceleration Applications"

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Prepared by:

Dr. Michael J. Nilles, Project Scientist

Alabama Cryogenic Engineering, Inc.

P.O. Box 2470

Huntsville, AL 35804

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WORK PERFORMED THIS QUARTER

All necessary support equipment required for heat exchanger testing is in place. Preliminary tests revealed a need for some component redesign; these have been completed.

Fabrication of the heat exchanger material is underway at our subcontractor's facility. Due to the unique requirements of this effort, their process design phase required considerably more time than originally expected. Accordingly, product delivery has been delayed and is currently estimated to be late June, 1990.

Development of the heat exchanger fabrication process has been disrupted by the failure of a key component in our sputtering system. The specific steps we are taking with regard to this failure are described in a later section.

WORK PLANNED FOR NEXT QUARTER

The constraints imposed on this program by the failure of our sputtering system limit the amount of work that can be performed which is directly related to the heat exchanger fabrication and testing. In order to baseline the current test facility, we will test a micro-heat exchanger fabricated in an earlier effort. Although the baseline operating design is significantly different than required for this effort, we can fully debug the test facility with this unit.

PROBLEMS AND SOLUTIONS

The RF oscillator tube in the sputtering system failed in early March, 1990. This particular tube is manufactured by only one vendor, and they are experiencing production line problems. We have been unable to locate the tube or a suitable substitute from any U.S. distributor. In addition, rebuilding the tube is not feasible, due to the tube's unique design. Both, ACE, Inc. and Leybold Technologies (the sputtering system vendor) are continuing in our respective efforts to locate a replacement part. The current delivery date on a new tube is at least ten weeks. Unfortunately, this part is critical to the overall heat exchanger fabrication process and the long delivery date may impact the future progress of this effort. Once we have obtained a firm delivery date, we will contact the program's technical representative with a determination of what schedule changes are needed, if any.

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