PROJECT TITLE:	Large Capacity, Multi-Cylinder Cryocooler for High Temperature Superconductor (HTS) Applications
ORGANIZATION:	Infinia Corporation
PRESENTERS:	Dr. Songgang Qiu
FY 2008 FUNDING:	DE-FG02-06ER84650

Overall Project Purpose and Objectives:

The overall purpose of the project is to develop and demonstrate an innovative high-performance, double-acting, multi-cylinder, free-piston Stirling cooler system with Infinia's long life, maintenance free technology. The system will be capable of lifting up to 1 kW of heat at 65 K with a cryocooler efficiency of 35% of Carnot. The cooler system will meet demanding needs of HTS equipment and satisfies realistic HTS requirements of cost, performance, reliability, and minimal maintenance.

2008 Approach and Results:

The goal for the first year is to complete the detailed multi-cylinder cooler system design and hardware fabrication. The detailed design is completed and the fabrication is under way.

2009 Plans and Expectations:

To complete fabrication, conduct extensive system testing to demonstrate the functionality and optimize the system. The system performance will be mapped.

Technology Transfer, Collaboration, Partnerships:

Communicated with Jim Maguire of American Superconductor, Ray Radebaugh of NIST, John Pfotenhauer from University of Wisconsin.