The MEMS Exchange

August 30, 2006

David Weber, Technical POC
Executive Engineering
3143 N.W. 41st Street
Lauderdale Lakes, Florida 33309

Dear David,

The MEMS Exchange is pleased to provide this letter of commitment for providing fabrication and process development support to your proposal to the Defense Advanced Research Project Agency (DARPA), in response to Broad Agency Announcement (BAA) 06-25 program entitled, Micro Isotope Power Sources (MIPS).

Specifically, the MEMS Exchange will provide MEMS design and fabrication support to Executive Engineering for the implementation of the MEMS device portion of your proposed 18-month effort to DARPA to develop and demonstrate an [redacted] on the Micro Isotopes Power Source (MIPS) program.

The MIPS program has the goal of radically reducing the size of radio isotope power generators with an eventual goal of demonstrating a power generator having a 1 cc volume which can deliver 35 mW of power or more. The 3-dimensional form factors and dimensional size scales demand that the performers exploit MEMS fabrication technologies since this is the only implementation method which can reduce electro-mechanical systems to the sizes required.

The approach of Executive Engineering to converting the power of a radio isotopes into useful electrical power is quite unique in that it avoids the limitations of the conventional approach of using thermoelectric generators that have extremely low overall efficiencies. Basically, the [redacted] requires the design and fabrication of extremely small [redacted], or [redacted] that can couple the output of the isotope sources to induce electric fields in the [redacted]

The MEMS Exchange will develop and fabricate various part of the [redacted] system including:

- [redacted];
- The output coupling loops;
- [redacted]
- Integration of strong [redacted] into assembly;
- Mechanism to position source material as [redacted];
- Mechanisms to [redacted]