DEFENSE MICROELECTRONICS ACTIVITY
4234 54th Street
McClellan, CA 95652-2100

15 May 2012

MEMORANDUM FOR Nuclear Regulatory Commission
ATTENTION: Mr. Pierre Saverot

SUBJECT: Limited Use of the General Electric Model No. 1500 Package in Support of Reloading the Defense Microelectronics Activity (DMEA) High Dose Irradiator

Mr. Saverot,

The Defense Microelectronics Activity (DMEA) provides critical, quick turn microelectronics devices for military, intelligence, special operations, cyber and combat missions of the Department of Defense (DoD). We awarded a contract to J.L. Shepherd & Associates (JLS&A) to refuel our Co-60 High Dose Irradiator used for Total Ionizing Dose (TID) testing of microelectronics we fabricate. DMEA has learned through JLS&A that the General Electric Model No. 1500 transport package they proposed to ship the new source to DMEA's facility near Sacramento, CA is not currently certified for use. Due to our critical time constraints and mission needs, we respectfully request that the NRC extend the certification of the GE Model No. 1500 Package and approve use to support the DMEA High Dose Irradiator refueling.

DMEA is the DoD Center for microelectronics research, development, technologies and applications to achieve the Department's strategic and national security objectives. DMEA reports to the Assistant Secretary of Defense for Research and Engineering (ASD)R&E. A significant component of DMEA's mission is producing microelectronic semiconductor devices for DoD weapon systems which are no longer available through commercial channels. DMEA's Advanced Reconfigurable Manufacturing for Semiconductors (ARMS) foundry fabricates these out-of-production devices, often with enhanced capabilities, to keep U.S. weapon systems effective and operational. As a Trusted Integrated Circuit (IC) Supplier, the ARMS foundry reduces the potential for counterfeit electronic parts to infiltrate U.S. weapon systems; counterfeits which would compromise national security.

The ARMS foundry produces radiation-tolerant/radiation-hardened microelectronics devices. DMEA tests for TID in our Co-60 irradiators to confirm they meet hardness specifications. DMEA performs this TID testing using two JLS&A Model 81-22/484 irradiators, which are licensed under NRC License No. 04-29107-01. One tester is for high dose and the other for low dose testing with periodic refueling of the radiation sources required to maintain the dose rates necessary to meet the TID testing specifications.

The DMEA High Dose Irradiator source is becoming borderline effective for high dose testing. If the new Co-60 sources cannot be installed at DMEA in the next 6-9 months, our ability to adequately test our microelectronics devices will be significantly degraded and force us to shut down our in-house testing. This will very negatively impact our ability to fulfill our mission to provide critical, quick turn microelectronics devices for military, intelligence, special operations, cyber and combat missions. We investigated switching to another supplier with a certified transport package. However, DMEA awarded this requirement via competition and JLS&A was the only vendor to propose, so it is unlikely we could successfully change suppliers quickly.

Due to the critical time constraints and our mission needs, we respectfully request that the NRC extend the certification of the GE Model No. 1500 Package and approve its use to support the DMEA High Dose Irradiator reload. The new source is urgently needed to deliver the high dose irradiation rates necessary to perform TID testing of microelectronics devices supporting the DoD's strategic and national security objectives.

Very Respectfully,

Ted Glum
Director, Defense Microelectronics Activity