DETERMINATION UNDER SECTION 303 (a)(5) OF THE DEFENSE PRODUCTION ACT FOR HIGH PURITY BERYLLIUM METAL PRODUCTION PROGRAM

Under the authority delegated to me pursuant to Executive Order 12919 in a Secretary of Defense Memorandum dated September 28, 1994, I hereby make the following determination concerning High Purity Beryllium Metal:

1. The industrial resource or critical technology item is essential to the national defense.

Beryllium, a light weight metal, possesses unique properties that make it indispensable in many of today's critical U.S. defense systems. High purity beryllium is used extensively in structures, digital electronics, and instruments found in defense weapon systems where stiffness, low weight, good thermal conductivity and dimensional stability are required. Defense demand for beryllium generally includes the following four areas: sensors, (Forward Looking Infrared Radars (FLIRs)), missile and satellite applications, avionics, and nuclear weapons managed by the Department of Energy (DoE).

FLIRs account for roughly 25 percent of defense-related demand for high purity beryllium metal. Aircraft FLIRs require the stiffness, dimensional integrity and low weight of beryllium for use in both sensor substrates and supporting structures. These systems are essential enablers for platforms with precision-strike capabilities. FLIRs are installed on all fighter aircraft including: the F-35 Joint Strike Fighter, F/A-22, F/A-18E/F, RAH-66, F-15E, F-16C/D, as well as AH-64D, Predator, and Global Hawk.

The Ballistic Missile Defense System requires infrared and optical sensors that can detect and track missile threats and is a growing consumer of beryllium. High purity beryllium is essential for the following missile defense systems: Ground-Based Interceptor, Aegis Ballistic Missile Defense Standard Missile-3, Patriot Advanced Capability-3 missile system, Theater High-Altitude Area Defense missile system, and the Infrared Search and Track Sensor on the Airborne Laser platform.

The Space community relies heavily on high purity beryllium for a wide variety of satellites and other space systems with military-specific missions. Beryllium is widely used in space applications because its light weight, high strength and high stiffness reduce launch weight thereby reducing launch costs. Military satellite programs provide a continuing demand for beryllium for use in structures, electronic housings, heat sinks, sensors and sensor support. The Space Tracking and Surveillance System and Space-Based Infrared System-High programs both employ space-based infrared and optical sensors that rely on beryllium. Defense communications satellite programs such as MILSTAR, Advanced Extremely High Frequency, and the Wideband Gapfiller are also highly dependent on the availability of beryllium. The DoD also needs beryllium for the NAVSTAR Global Positioning System, Defense Meteorological Satellite Program, Defense Support Program, UHF-Follow-On Satellite, and the Mobile User Objective System satellite.

High purity beryllium metal plays an important role in nuclear applications. Beryllium is a key component in the development and production of DoE nuclear warheads. The National Nuclear Security Administration at DoE plans to begin refurbishing and modernizing weapons in the nuclear arsenal starting in FY06. Beryllium is also used in nuclear reactors as a reflector or moderator given its low thermal neutron absorption and high scattering cross section.

In addition to the defense applications mentioned above, high purity beryllium supports numerous other programs across the DoD enterprise. Beryllium is used in structures and components in virtually all high-speed fighter aircraft and military helicopters. This unique metal is used in aircraft landing gear components, missiles, and gyroscopes. Military electronic targeting and infrared countermeasure systems rely on beryllium components, as do advanced missile and radar navigation systems. The U.S. Army relies on beryllium for components in its M1A1 Abrams tank; the preeminent battle tank for the U.S. and international market.

2. Without action under DPA authority, U.S. industry cannot reasonably be expected to provide the capability for the needed industrial resource or critical technology item in a timely manner.

The U.S. lost its only capability to manufacture high purity beryllium metal in October 2000, when Brush-Wellman, Inc. (BWI) mothballed its beryllium reduction facility. BWI discontinued operation of its 40-year old Pebbles Plant in Elmore, Ohio, due to occupational health risks posed by the facility and declining demand (at that time) from the defense community. While incremental improvements were made to the facility over the years, the Pebbles Plant was designed well before current regulations were enacted to protect employee health, safety, and the environment. To restart the old beryllium facility would require a major overhaul as well as a significant capital investment. Even if the mothballed plant was renovated and restarted, the facility would face significant challenges to meet current Environmental Protection Agency (EPA) and Occupational Health and Safety Administration (OSHA) regulations.

The cost to plan, design, permit, build, and equip a new, modern facility to efficiently produce high purity beryllium and fully comply with EPA and OSHA standards of performance is approximately $50 million. Like most firms in the specialty aerospace metals sector, BWI and its parent Brush Engineered Materials (BEM) experience cyclical financial performance. BWI and BEM were only profitable in two of the last five calendar years including an overall corporate profit of $15M in 2004. BWI's Beryllium Products Group accounted for only 8.5% of overall corporate sales in 2004. While the Beryllium Products Group averages $5M to $6M in profits over the long run, a return on investment analysis cannot rationalize an investment of $50M in a new high purity beryllium processing facility without government cost share.

A Title III cost share program provides the opportunity to a business with a viable business case, to plan, design, permit, build, equip, and operate a new high purity beryllium production plant. Title III assistance will provide the proper mix of government economic incentives and industry cost share to re-establish this critically needed domestic resource. The new facility will be designed to produce pure beryllium capable of meeting the specifications required to meet national security needs.

3. DPA instruments represent a cost-effective, expedient, and practical alternative method for meeting the need.

The use of Defense Production Act (DPA) Title III funds is cost effective since industry will share at least 20% of the total program cost, in line with the commercial market for the product. Consequently, the use of DPA instruments will serve to leverage the government funds and to secure commitment from industry. This relieves the government from bearing the entire financial burden associated with re-establishing the critical beryllium production infrastructure.

The use of DPA Title III funds is the most expedient approach to re-establishing a domestic source for producing beryllium since the technology is mature and the manufacturing requirements are well understood. DPA authorities are especially suited for teaming with an experienced industry partner to establish a domestic production capability in a timely fashion. The use of the DPA authorities is the most practical approach to ensure that DoD has continued access to high purity beryllium prior to the depletion of the National Defense Stockpile (NDS) supply, which is anticipated to occur in the next five years.

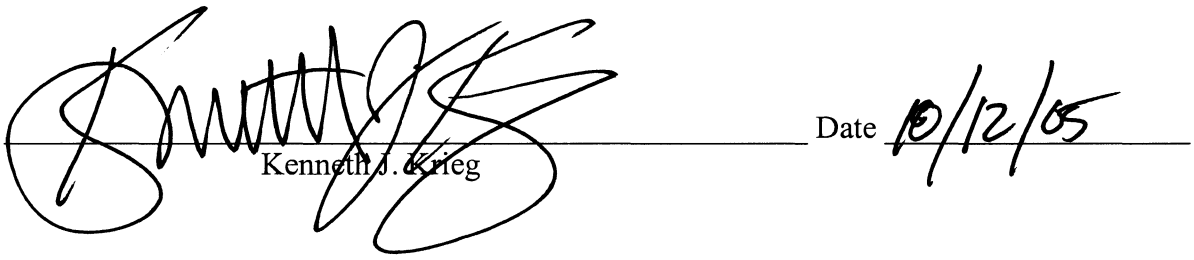
The authorities contained in the Defense Production Act were specifically intended to establish domestic production capabilities for critical technologies. The proposed program will result in an efficient, modern production facility for high purity beryllium that meets or exceeds all EPA and OSHA regulations. The use of Title III authorities represents a cost-effective, expedient and practical alternative method for meeting defense requirements for high purity beryllium.

4. The combination of the U.S. national defense demand and foreseeable non-defense demand for the industrial resource or critical technology items is not less than the output of the domestic industrial capability, including the output to be established through this project.

The Deputy Under Secretary of Defense for Industrial Policy DUSD (IP) conducted a study dated May 14, 2004 to assess the impact of the lack of a domestic manufacturing source for high purity beryllium. Since mothballing its beryllium operation in 2000, BWI has relied on a dwindling supply of material from the NDS to meet defense needs for high purity beryllium metal products. There are only two other sources of beryllium in the world: China and Kazakhstan. Kazakhstan's Ulba Metallurgical Plant produces beryllium that fails to meet purity levels required by DoD programs. Due to the inevitable depletion of the NDS stockpile, quality limitations preventing use of Kazakhstan imports for most defense applications, and reliability concerns regarding Kazakhstan as a sole source supplier, the report concluded it was imperative to national security to re-establish a domestic capability to manufacture high purity beryllium metal. No reliable foreign or domestic supplier exists today that can produce and deliver high purity beryllium to satisfy the needs of critical U.S. defense programs.

Total domestic demand (primarily DoD) for high purity beryllium in 2004 was 73,500 pounds. The DUSD (IP) report conservatively estimates future demand will increase at a rate of 6% per year for high purity beryllium. The beryllium industry historically experiences annual surges in demand of 30% or larger. Given the anticipated growth rate and demand surges, Title III will establish a domestic facility with a 160,000-pound per year capacity which will meet known and future high purity beryllium demands through the year 2015. BWI, with DPA support, will

design, build, and operate a facility, employing a semi-continuous batch operation. A single shift operation will meet demand expected at completion of construction. Additional shifts can be added to increase capacity as market demand dictates. Using this approach, the production capacity will not exceed the combined U.S. national defense and foreseeable non-defense demand for high purity beryllium.



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