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BRAC Commission

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Received

2005 Defense Base Closure and Realignment Commission  
2521 South Clark Street  
Suite 600  
Arlington, VA 22202

Dear Commissioners:

I am writing to urge you to reject the Department of Defense's recommendation to relocate 43 positions of the U.S. Army ARDEC Fuze Division from Adelphi Laboratory Center, Maryland to Picatinny Arsenal, New Jersey, based on the significant negative impact the move will have on a critical military capability – fuzing technology for gun launched and hand emplaced munitions systems for our armed forces. The Fuze Division Adelphi provides advanced proximity fuze technology that goes into artillery (M782 MOFA) and mortar (M734A1) fuzes, for the Army and Marines. The division's proximity fuze technology also went into the FMU-160/B proximity for the AC-130 gunship for Special Forces as a rapid response for the war in Afghanistan. Right now the division is also building EPIAFS inductive fuze setters in-house to support the rapid fielding of the 155mm Excalibur guided projectile in Iraq. The division also provides the electronic safety systems technology for the hand emplaced devices like the M152 Remote Activation Munitions System (RAMS) for SOCOM and the Engineers. The division at Adelphi also provides consulting services to NSWC Dahlgren Division on their Navy proximity fuze programs. The realignment recommendation is discussed in Section 10 of the Technical Joint Cross-Service Group on pages Tech-19 through Tech-22 regarding the creation of an Integrated Weapons and Armaments Specialty Site for Guns and Ammunition at Picatinny Arsenal, NJ.

First, I would like to bring to your attention that the 43 employees at Adelphi already work for and are on the TDA of ARDEC at Picatinny, but are tenants with 1000 plus Army Research Lab (ARL) personnel at Adelphi Laboratory Center (ALC). The ARDEC Fuze Division is physically split with 43 employees at ALC and the balance of 100 employees and the Division Chief at Picatinny. The Fuze Division Adelphi has a significant in-house laboratory capability (8000 square feet), dedicated to electronics and mechanical projects. The division has been operating successfully in two locations since October 1993, when the Adelphi portion of the Fuze Division was split off from ARL and aligned with ARDEC after the 1991 BRAC. It was realized in the prior BRAC round that there was significant synergism between the Fuze Division and the Sensors and Electron Devices Directorate of ARL and that any move would likely destroy the technical capabilities of the division, so the division was left in place. The same arguments hold true today. Furthermore, with today's video teleconferencing technology and virtual private network technology, meetings can be held between Maryland and New Jersey

counterparts with only a few moments notice, so the arguments for co-location in New Jersey start to fall away.

The benefits of the 1991 decision to keep the Fuze Division at Adelphi due to the synergism and interaction with ARL on a daily basis are still apparent today and can be illustrated on many programs.

In the area of proximity fuzing there is collaboration with ARL experts on microwave patch antenna design and development. The division uses shared facilities on site including microwave anechoic chambers for antenna pattern measurement and the Electromagnetic Research Facility, a large wooden structure with a sand pit that is used for indoor air gun evaluation of experimental prototype fuzes. Cooperative research under a formal Technology Program Annex (TPA) is also ongoing in the field of optical proximity fuze sensors with Vertical Cavity Surface Emitting Lasers (VCSELs) and solid state photodetectors.

There is also a formal TPA with the ARL Reserve Battery Group to support the power supply technology requirements of ARDEC's electronic fuzes. The ARL group conducts research on reserve power sources technology, supports contractor production evaluations with their laboratory battery air gun, and conducts long-term battery aging studies for ARDEC programs.

Cooperation between the Fuze Division Adelphi and ARL for micro-mechanical safety and arming devices (MEMS) technology includes use of clean room facilities and an ARL developed process for explosive silicon to fabricate micro-electrical explosive initiators. The division collaborated with an ARL researcher identifying a potential MEMS multi-level metal manufacturing process ideally suited for MEMS impact sensor application. An ARL physicist is participating in feasibility analysis and initial development of MEMS micro-turbine. The division and ARL shared a contract for CNRI (Corporation for National Research Initiatives) MEMS Exchange, a non-profit, DARPA-supported organization that serves as a conduit to a consortium of MEMS development and fabrication facilities around the country.

Teamwork on in-line electronic safety and arming (S&A) devices includes numerous programs for PM-Close Combat Systems (PM-CCS) out of Picatinny Arsenal. M152 Remote Activation Munitions System (RAMS), XM153 Sympathetic Detonator/Timer (SYDET), XM156 Magneto Inductive RAMS (MI-RAMS), and remote initiation systems to actuate various EOD tools are all programs PM-CCS looks to ARL for overall development. ARL "subcontracts" S&A and explosive train work to Fuze Division Adelphi. The process requires close collaboration to deliver an integrated product for the customer. The Fuze Division Adelphi utilizes ARL's integrated circuit manufacturing line to develop highly precise multi-point exploding foil initiator geometries for initiation of advanced warhead designs with dimension tolerances that cannot be achieved through other methods. The division has worked closely with ARL scientists to develop unique processes for depositing and etching the thick copper used in these devices.

The Fuze Division Adelphi team for the EPIAFS inductive fuze setter for the XM982 Excalibur guided projectile utilized the ARL Reserve Battery Group to assist with battery selection and develop the battery capacity gage. EPIAFS team members consulted with ARL experts to help understand the EPIAFS and Excalibur inductive interface. EPIAFS included ARL software personnel on the team to design and code the XM982 Projectile Simulator.

Beyond these specific examples, as new sensor technologies are developed at ARL, there is natural linkage to fuze application of these technologies. The co-location clearly increases the likelihood of leveraging this sensor research by ARDEC.

Although the COBRA data you can inspect may show that the costs to relocate 43 personnel and their portable equipment are small, in the big picture, what gets lost is that in a technology oriented group, the knowledge base of the organization is in the minds of a few key players. Our knowledge of the move of the Ft. Monmouth Electronics Lab people to ALC was that only about 10% of the people moved here. If a similar situation happens in a contemplated move to New Jersey, the best and brightest engineers in the Fuze Division Adelphi will easily find jobs with other Government agencies in the metropolitan Washington Area, such as ARL, DoD, NASA Goddard, NSA, FDA, Homeland Security, FAA, etc.

Why should you care? Because the way the Fuze Division is split right now, the Adelphi portion does the front end technology portion of the work and the Picatinny portion tends to do more of the system engineering and production support. Fuzing technology is not something that one learns in school. It takes about 5 years of on the job experience to learn the basics and about 10 years to become a seasoned professional. Many of the division's senior engineers have more than 20 year's experience. If they walk out the door, this knowledge base is gone forever. The fuze contractors don't have the know-how either. The number of fuze contractors is down from 30 in the 1980s to 6 today. IRAD is down because fuze production is down. The contractors come to the division with CRADAs to get the expertise that the division has. It is unreasonable to move the slots to New Jersey, build a new building and expect to stand up a replacement technical organization with in-house expertise in a few years.

After waiting years for ARDEC to provide a substantial technology investment in fuzing, the division was successful in securing 6.2 technology funding for FY05. It is indeed ironic that this is the first year of a four year \$20 million Army Technology Objective (ATO) called Enabling Fuze Components executed out of the Fuze Division Adelphi. The technology in this ATO includes proximity target sensors, and safety and arming devices, both electronic and micro-mechanical (MEMS). If the BRAC recommendations are carried out, this program will become unexecutable because the principal investigators are going to seek employment elsewhere.

The bottom line of this letter is to raise an issue to you that was likely not on your radar screen because it impacts only 43 families. However, if you were among the 43 families included in the proposed realignment, the impact would be 100%. These folks did not

have an opportunity to meet with the Commission or its staff. I would respectfully request that you review this letter carefully. I hope that at least some of the points that I have made would be sufficient to convince you to remove the Fuze Division Adelphi from the BRAC list.

Sincerely,

A handwritten signature in cursive script that reads "William L. Konick". The signature is written in black ink and is positioned below the word "Sincerely,".

William L. Konick