ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
3 - Advanced technology development	**0603103A - Explosive Demilitarization Technology**	**D51**

COST (In Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
D51	EXPLOSIVES DEMIL TECH	0	0	9349	9860	10030	10213	10259	10469

A. Mission Description and Budget Item Justification: The Explosive Demilitarization Technology Program is a cooperative interservice, interagency effort focused as the sole Department of Defense (DoD) program dedicated to the development of safe, efficient and environmentally acceptable processes for the resource recovery and recycling (R3) or disposition of strategic, tactical, and conventional munitions including explosives, and rocket motors. Efforts in this program emphasize environmentally compliant technologies to enhance existing methods for munitions R3 and treatment and seeks alternatives over that of open burning/open detonation (OB/OD). There are currently over 500,000 tons of these materials requiring disposition with a forecast of over 1,450,000 tons to flow through the stockpile by 2006. The effort employs the highly developed technology base in the DoD Service Laboratories and Technical Centers, the Department of Energy (DoE) National Laboratories, industry, and academia. The program is integrated through the leadership of the Joint Ordnance Commanders Demilitarization Subgroup and seeks to leverage support from the Department's Environmental Security Technology Certification Program (ESTCP), the Strategic Environmental Research and Development Program (SERDP), the Joint DoD/DOE Munitions Program, and complementary Service science and technology programs. Each project is required to include a federal laboratory sponsor and is provided peer review by the Joint Working Group. The Demilitarization Users Group is utilized to assess and review ongoing and emergent demilitarization requirements for use in planning future investments for this program. The program supports an annual Global Demilitarization Symposium, which focuses on technology transfer opportunities and the technical review and data evaluation from ongoing projects and advanced demonstrations. This program was established pursuant to Section 226 of the National Defense Authorization Act Fiscal Year 1996 (Public Law 104-106) and Section 227 of the National Defense Authorization Act for Fiscal Year 1997 (Public Law 104-201). The program provides an annual report to the Congress, which provides a detailed plan update on technology investments, accomplishments, and future planned investment areas. The Explosive Demilitarization Technology Program was previously managed under PE 0603104D8Z; starting in FY04 it will be managed by the U.S. Army Armament Research, Development and Engineering Center at Picatinny Arsenal, NJ. The program element contains no duplication with any effort within the Military Departments. The cited work is consistent with the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan and supports the Objective Force transition path of the Transformation Campaign Plan (TCP).

There are no Defense Emergency Response Funds provided to this project.

Accomplishments/Planned Program	FY 2002	FY 2003	FY 2004	FY 2005
Test Site Demonstration Program (TSDP): In FY04, the TSDP will complete efforts on field detonation operations. Data from previous tests will be used to conduct advanced open detonation experiments. Process efficiencies will be maximized and emissions will be minimized. Testing of the Contained Burn Chamber for tactical missiles will continue; optimization studies will be completed. Advanced Molten Salt Technology dem/val will continue. Development of an integrated Cryofracture/Plasma Arc process will continue; detailed design and equipment fabrication will be initiated. In FY05, Molten Salt Technology systems development and demonstration (SDD) will continue. For the integrated Cryofracture/Plasma Arc process, detailed design of will be completed and equipment fabrication will continue.	0	0	5049	5500
Advanced Removal/Conversion (AR/C): In FY04, microwave removal technology studies will be completed. Design of an inductively coupled pilot plant will be completed and fabrication of equipment will begin. Biodegradation studies on wastewater from waterjet and autoclave demil processes will continue. In FY05, equipment fabrication for the inductively coupled pilot plant will be completed and installation will begin. Wastewater biodegradation studies will be completed. Ultrasonic removal technology will be investigated.	0	0	900	1600
Advanced Automated Munitions Disassembly (AAMD): In FY04, AAMD efforts in the areas of robotic disassembly of projectiles and advanced water jet and laser cutting will continue. The robotic disassembly workcells developed for the ADAM projectile and the 8 inch RAP round will be demonstrated and validated. Design of workcells for other improved conventional munitions (ICMs) and cluster bomb units (CBUs) will get underway. In FY05, design of robotic workcell hardware for selected ICMs and CBUs will be completed and equipment fabrication will be initiated.	0	0	1500	2160
Liquid Ammonia Reduction (LIR) Pilot Process: In FY04, shake-down testing and SDD of the LIR pilot process for tactical missiles will be completed.	0	0	1000	0
Advanced Destruction Systems (ADS): In FY04, demonstration of enhanced rotary furnace for conventional munitions will be completed and optimization of the fixed detonation chamber prototype will be completed.	0	0	600	0
Development of Analytical Tools (AT) for optimization of demil processes: In FY04, AT development focusing on explosives and propellants will continue and development of Design for Demil ATs will be initiated. In FY05, expanded ATs for explosives and propellant evaluation will continue to be optimized for recovered items and Design for Demil AT tool development will continue.	0	0	100	600
Hot Gas Decontamination (HGD): In FY04, demonstration/validation of the HGD system will be completed.	0	0	200	0
Totals	0	0	9349	9860

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B. Program Change Summary	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget	0	0	0	0
Current Budget (FY 2004/2005 PB)	0	0	9349	9860
Total Adjustments	0	0	9349	9860
Congressional program reductions				
Congressional rescissions				
Congressional increases				
Reprogrammings				
SBIR/STTR Transfer				
Adjustments to Budget Years			9349	9860

Significant Changes:
FY04/05: PE devolved from OSD to Army in FY04; funds development of processes for the resource recovery and recycling (R3) or disposition of strategic, tactical, and conventional munitions including explosives, and rocket motors.