RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E/Defense Wide/BA 3							R-1 ITEM NOMENCLATURE Explosives Demilitarization Technology **PE 0603104D8Z**			
COST *(In Millions)*	FY2000	FY2001	FY2002						Cost to Complete	Total Cost
Total Program Element (PE) Cost	24.017	29.886	8.815						Continuing	Continuing
JDTP/P486	24.017	29.886	8.815						Continuing	Continuing

(U) A. Mission Description and Budget Item Justification

(U) BRIEF DESCRIPTION OF ELEMENT

(U) 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 2005. This is funded under Advanced Technology Development based upon its supports to the development and exploration of new munitions concepts and technology preceding system engineering development.

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(U) 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 Deapartment`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. Recent annual reports; FY 1998-Department of Defense Joint Demilitarization Technology Program (March 1999) and the FY 1999-Department of Defense Joint Demilitarization Technology Program (February 2000).

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(U) Project Number and Title: P486 JDTP

(U) PROGRAM ACCOMPLISHMENTS AND PLANS

(U) FY 2000 Accomplishments:

(U) Completed engineering design and initiated fabrication for a hot gas decontamination system to address explosive residue contamination on munition components generated during the demilitarization process. Initiated procurement, fabrication of prototype equipment at Hawthorne Army Depot.($ 3.000 million)

U) The Nevada Test Site Demonstration Program continued in FY 2000. Tunnel Detonation data reduction and analyses were conducted to benchmark the events. Noise mitigation techniques were performed. Completed installation of the contained burn chamber and demonstrated destruction of 70 shillelagh rocket motors. Began system modifications to accommodate a variety of tactical systems. Initiated transition of improved molten salt oxidation system. Designed advanced molten salt reactor, feed preparation system, pollution control system and salt removal systems. Joint Program integration continued.($ 6.828 million)

(U) Design of a hydrothermal oxidation demilitarization waste treatment system with the capability to treat 6,000 gallons per week at 1.2 gallons per minute was completed. Fabrication and assemblage of equipment and pads, erection of components and initial prove out was initiated.($ 3.000 million)

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(U) Improvements and enhancements to the liquid ammonia reduction process were initiated . Engineering design and procurement of the improved flash evaporator, filter system, glycol heater system, replacement of ammonia compressor and modular construction of the chemical processing tower were successfully demonstrated.($ 2.114 million)

(U) Initiated advanced cutting development using femto second laser cutting technology. Explored beam spatial profile, power, pulse repetitive rate and vacuum level to determine the optimal cutting parameters for HE material. Abrasive waterjet technology for cutting 40mm HE projectiles was demonstrated. Optimization and integration into flexible work cell and induction heating to melt out TNT from waterjet sectioned projectiles was initiated. Development of automated flexible workcell continued. Explosion proof robotic end of arm tooling and workcell hardware were successfully completed. Force and vision control capability development initiated.($ 3.912 million)

(U) Near Infra-red portable propellant analyzer was demonstrated in the field and verification of data generated was accomplished. The thin layer chromatography propellant analyzer kit has been refined by improving computer software for analyzing propellant samples and utilizing environmentally benign chemicals to process samples. Completed design engineering and fabrication of transportable modular unit for a propellant conversion to fertilizer system capable of converting 2,000 to 4,000 pounds of propellant per batch. Completed design and initiated procurement of a 500 pound per day prototype system for recovery of RDX form Comp A-3. Demonstrated pilot scale capability to recover HMX from Class 1.1 propellants.($ 2.824 million)

(U) Successfully completed laboratory and bench scale process to convert explosive D conversion to picric acid through catalytic hydrotreating and nitric acid reduction. Design and fabrication of a 500 pound per day conversion process system completed. ($ 2.339 million)

(U) FY 2001 Plans:

(U)Congressional adds:
Advanced cutting technology $0.8 million

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Contained Detonation $7.0 million
Hydrothermal Oxidation $3.0 million
Thin Layered Chromotography $4.0 million
Hot Gas Decontamination $1.5 million
Explosives Demilitarization Technology $1.5 million
Other $3.4 million($ 21.200 million)

(U) The Nevada Test Site Demonstration Program will continue to focus on demonstrating improved field detonation operations. Detonation events will be designed and executed based on data gathered from previous experiments. Facility fragment and noise containment designs will be tested and measured against EPA standards. Testing and modification for a variety of tactical missiles for the contained burn chamber will continue. Advanced molten salt oxidation technology will be installed with demonstration/validation initiated. ($ 5.486 million)

(U) Advanced removal/conversion efforts will continue. Explosive D conversion to picric acid will be demonstrated in the 500 pound per day pilot facility. Demonstration of a 2,000 to 4,000 pound per batch transportable modular unit to convert propellant to fertilizer will be completed. Demonstration of a 500 pound per day prototype system for recovery of RDX from Comp A-3 will be performed.($ 1.100 million)

(U) Improved liquid ammonia reduction pilot process will be demonstrated on tactical missiles.($ 0.350 million)

(U) Advanced cutting technology will continue with the femto second laser pursued and optimized for munition applications. Flexible workcell with waterjet cutting capability for 40mm cartridges will be completed. Force and vision control capability will be demonstrated. Work will be initiated to adapt the workcell to process other munitions such as the 155mm M483 ICM.($ 1.100 million)

(U) Analytical tools for explosive and propellant evaluation will continue to be optimized for recovered items. ($ 0.650 million)

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(U) FY 2002 Plans:

(U) The Nevada Test Site Demonstration Program will continue to focus on demonstrating improved field detonation operations. Detonation events will be designed and implemented based on data gathered from previous experiments. Noise and emission mitigation techniques will be investigated. Stand off monitoring techniques and technologies will be initiated. Testing and modification for a variety of tactical missiles for the contained burn chamber will continue. Advanced molten salt oxidation technology will be demonstrated/validated. Joint program integration will continue.($ 5.065 million)

(U) Advanced removal/conversion efforts will continue. Explosive D conversion to picric acid and RDX recovery system will be transitioned to operational activities. Process development will begin on inductively coupled plasma conversion process.($ 1.000 million)

(U) Complete demonstration and transition of improved liquid ammonia reduction pilot process to operational activities.($ 0.750 million)

(U)) Advanced cutting technology will be integrated into the flexible work cell. Work will continue to adapt the workcell to process other munitions.($ 0.750 million)

(U) Continue analytical tools development for optimizing recovered items and demilitarization process for munitions. These tools will focus on explosive and propellant recovery.($ 0.650 million)

(U) Initiate efforts to enhance and optimize cryofracture technology for munitions.($ 0.500 million)

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(U) B. Program Change Summary	**FY2000**	**FY2001**	**FY2002**	**Total Cost**
Previous President's Budget Submit	23.635	8.964	9.265	Continuing
Appropriated Value	0.000	30.164	0.000	Continuing
Adjustments to Appropriated Value				
a. Congressionally Directed Undistributed Reduction	0.000	-0.278	0.000	
b. Rescission/Below-threshold Reprogramming, Inflation Adjustment	0.000	0.000	0.000	
c. Other	0.382	0.000	-0.450	
Current President's Budget	24.017	29.886	8.815	Continuing

Change Summary Explanation

(U) Funding: FY 2000 reductions were identified on the FY 00 OMNIBUS reprogramming. FY 2001 reductions reflect Section 8086 adjustments.

(U) Schedule: N/A

(U) Technical: N/A

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(U) C. Other Program Funding Summary Cost: N/A

(U) D. Acquisition Strategy: N/A

(U) E. Schedule Profile: N/A