RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E/Defense Wide/BA 3							R-1 ITEM NOMENCLATURE Explosives Demilitarization Technology **PE 0603104D8Z**			
COST *(In Millions)*		FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	Cost to Complete	Total Cost
Total Program Element (PE) Cost		29.886	16.925	8.935	9.502	10.031	10.215	10.409	Continuing	Continuing
JDTP/P486		29.886	16.925	8.935	9.502	10.031	10.215	10.409	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 2006. 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 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. 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 2001 Accomplishments:

(U) The Test Site Demonstration Program continued to focus on demonstrating improved field detonation operations. Open detonation events data gathered from previous experiments were analyzed. Open detonation demonstration events were accomplished along with advanced instrumentation and diagnostics demonstration. Modification to the contained burn chamber for tactical missiles continued. Advanced molten salt oxidation technology prototype was installed with demonstration/validation initiated. ($ 4.136 million)

(U) Advanced removal/conversion efforts continued. Explosive D conversion to picric acid in a 500 pound per day pilot facility was initiated. Demonstration of a 2,000 pound per batch transportable modular unit to convert single based propellant to fertilizer was successfully completed. Completed design for a 500 pound per day prototype system to recover RDX from Comp A-3. ($ 1.100 million)

(U) Improved liquid ammonia reduction pilot process was designed for tactical missiles.($ 3.000 million)

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(U) Advanced cutting technology continued with the femto second laser demonstrated for cutting metal and explosives. Flexible work cell with waterjet cutting capability for 60mm mortars was completed. Dexterous manipulation involving force control integrated with vision technology was demonstrated. Work was initiated to adapt the work cell to process other munitions such as the 155mm M483, M692 and M731 ADAM ICMs. ($ 1.900 million)

(U) Near IR unit and thin layer chromatography kit for propellant stabilizer analysis were reconfigured and tested for improved field use. Near IR spectrometer was developed to analyze explosives in the field as well as propellant. ($ 4.650 million)

(U) A fixed contained detonation chamber was designed, installed and initial demonstrations were conducted. Advanced fixed contained detonation chamber capable of increased through put was initiated. Design for a transportable contained detonation chamber was initiated. ($7.000 million)

(U) Fabrication and assemblage of equipment and pads, erection of components and prove-out of hydrothermal oxidation system was completed. Initial demonstration/validation of prototype system was initiated. ($3.000 million)

(U) Modified hot gas decontamination prototype system design for system optimization was completed. Initiated procurement of system for installation at Hawthorne Army Depot was completed. Fabrication and assembly of equipment and pad, erection of components and initial prove-out was initiated. ($1.500 million)

(U) Demonstration and validation of HMX recovery pilot facility was successfully completed for processing LX-14. Initiated characterizaton and requalfication of recovered HMX for use in military applications. ($1.500 million)

(U) Process development for application of the Adams Process to destruction of energetic material was initiated. ($0.600 million)

(U) Developed methodology using cost as an independent variable to manage program risk, safety risk and risk from external threats. Initiated efforts to establish a chemical release database for munitions demilitarization operations. ($1.500 million)

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(U) FY 2002 Plans:

(U) The Test Site Demonstration Program will continue to focus on demonstrating improved field detonation operations. Open detonation demonstration events will be designed and implemented based on data gathered from previous experiments. Noise and emission mitigation techniques, stand off monitoring techniques and technologies will be investigated. Testing and modification for 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 in a 500 pound per day pilot facility will be completed. System and process optimization for the 2,000 pound per batch transportable modular unit to convert double and triple based propellant to fertilizer will be completed. Fabrication, assembly and demonstration of a 500 lb per day prototype system to recover RDX from Comp A3 will be completed. Process development will begin on inductively coupled plasma conversion process.($ 1.000 million)

(U) Fabrication and assembly of equipment and erection of components will be initiated for the improved liquid ammonia reduction pilot process for tactical missiles. ($ 0.750 million)

(U)) Advanced water jet and laser cutting technology will be integrated into the flexible work cell. Dexterous manipulation involving force control integration with vision technology will continue to be optimized. Work will continue to adapt the work cell to process 155mm improved conventional munitions.($ 1.750 million)

(U) Continue analytical tools development for optimizing recovered items and demilitarization process for munitions. These tools will focus on explosive and propellant recovery.($ 1.550 million)

(U) Demonstration/validation of prototype hydrothermal oxidation system. ($0.510 million)

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(U) Complete fabrication and assembly of hot gas decontamination equipment and pad, erection of components and begin demonstration/validation of system. ($1.400 million)

(U) Complete characterizaton and requalfication of recovered HMX for use in military applications. Initiate design of prototype equipment for HMX recovery. ($1.400 million)

(U) Investigate the use of photocatalysis to assist in the destruction of explosives ($1.500 million)

(U) Demonstrate enhanced rotary furnace technology and resource recovery for conventional munitions. ($2.000 million)

(U) FY 2003 Plans:

(U) The Test Site Demonstration Program will continue to focus on demonstrating improved field detonation operations. Open detonation demonstration events will be designed and implemented based on data gathered from previous experiments. Optimization of process efficiencies and minimization of emissions will be initiated. Testing and modification for tactical missiles for the contained burn chamber will continue. Joint program integration will continue. ($4.285 million)

(U) Advanced removal/conversion efforts will continue. Microwave removal/conversion technology will be explored. Design for the inductively coupled plasma conversion pilot process will be initiated. Advanced biodegradation of demilitarization process wastewater from waterjet cutting and autoclaves will be initiated. ($1.000 million)

(U) Advanced cutting technology development using waterjets and lasers will continue. Automated munitions disassembly capabilities focused on anti-armor/anti-personnel mines from ICMs and CBUs will continue. Integration of automated munitions disassembly with advanced cryofracture technology will be initiated. ($1.650 million)

(U) Complete fabrication, assembly and installation of equipment for improved liquid ammonia reduction pilot plant process for tactical missiles. ($1.500 million)

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(U) Expanded analytical tools for explosive and propellant evaluation will continue to be optimized for recovered items. ($0.500 million)

(U) B. Program Change Summary	FY2001	FY2002	FY 2003	Total Cost
President's FY2001 Budget Submit	8.964	9.265	10.167	
Delta	20.922	-0.450	0.000	
FY02 Amended President's Budget Submit	29.886	8.815	10.167	Continuing
Appropriated Value	30.164	17.015	0.000	Continuing
Adjustments to Appropriated Value				
a. Congressionally Directed Undistributed Reduction	0.000	-0.090	0.000	
b. Rescission/Below-threshold Reprogramming, Inflation Adjustment	-0.278	0.000	0.000	
c. Other	0.000	0.000	-1.232	
Current President's Budget	29.886	16.925	8.935	Continuing

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Change Summary Explanation:

(U) **Funding:** FY 2001 reductions reflect Section 8086 adjustments. Fy 2003 reductions were due to programmatic budget decisions.

(U) **Schedule**: N/A

(U) **Technical:** N/A

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

(U) **D. Acquisition Strategy**: N/A

(U) **E. Schedule Profile**: N/A