RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/Applied Research - BA2				R-1 ITEM NOMENCLATURE WMD Defeat Technology; 0602716BR				
COST (In Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete
Total 0602716BR Cost	0	0	146.1	141.9	181.5	204.9	207.5	Continuing
Project BB Small Business Innovative Research	0	0	1.9	1.9	1.8	1.9	2.0	Continuing
Project BD Weapons Effects Technologies	0	0	71.5	75.2	79.7	85.2	87.5	Continuing
Project BE Testing Technologies & Integration	0	0	11.5	12.2	12.4	12.7	12.9	Continuing
Project BF CP Operational Warfighter Support	0	0	45.6	37.4	87.6	105.1	105.1	Continuing
Project BG Nuclear Operations	0	0	15.6	15.2	0	0	0	

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A. Mission Description and Budget Item Justification

The mission of the Defense Threat Reduction Agency (DTRA) is to safeguard America and its friends from weapons of mass destruction (WMD) by reducing the present threat and preparing for the future threat. This mission directly reflects the National Military Strategy, supports the provisions of Joint Vision 2010 and is specifically directed by the JCS in the Joint Strategic Capabilities Plan (Nuclear Annex). To achieve this mission, DTRA has identified principal objectives along with strategies and tasks to ensure the objectives are met. Three of these objectives are to deter the use of WMD, reduce the present threat and prepare for the future threat. A focused, strong threat reduction technology base is critical to achieving these objectives. DTRA has taken the steps to develop this technology base.

This budget submission provides the essential technologies to deter the use of WMD and prepare for the WMD threat. It includes manpower authorizations, special equipment, necessary facilities, test bed operations, and all other associated costs in support of the development of the technology base needed to support the defeat of current and future WMD. Initiatives supported include, but are not limited to, such activities as follow:

- Counterproliferation programs providing capabilities to warfighters through the development of:
  - consequence assessment technologies and tools,
  - WMD operational support technologies, and
  - targeting support capabilities.
- Technology input to support the development of WMD training courses responsive to emerging threats and technological challenges.

CP technologies to include antiterrorism will help DTRA prepare for the WMD threat and support civil and military response to WMD use.

A. Mission Description and Budget Item Justification (cont'd)

The DTRA is the DoD focal point for programs and activities to reduce the threats posed by WMD proliferants. New, forward-thinking activities have been identified and prioritized to support the DTRA mission and the DoD CP strategy for responding to the full spectrum of crises and preparing now for an uncertain future. The CP programs support national guidance, the DTRA strategic vision, and Service and CINC operational customers. This program element provides the innovative technologies and concepts underpinning all CP programs.

- Examination of existing U.S./Allied capabilities to hold hardened, deeply buried targets at risk; evaluation of capabilities against known or projected potential targets; and evaluation of new technologies for possible application against known shortfalls.
- Targeting and Intelligence Community (IC) support to warfighters that provides functional vulnerability assessments of hostile foreign systems.
- Development of WMD analysis and simulation tools for the warfighter including target planning and assessment; hazardous materials transport and collateral effects prediction; consequence assessment; and anti-terrorism/force protection.
- Development and application of state-of-the-art nuclear weapons effects models to support nuclear weapon stewardship and system hardness design.
- Development, improvements and test engineering for the unique DoD test and simulation facilities (to include infrastructure) and enabling technologies that are used to evaluate the impact of hostile environments from conventional, nuclear, and other special weapons on military or civilian systems or targets.

Counterproliferation Technologies projects comprise a critical component of the ability of the Department to meet the technology challenges posed by the emerging international environment and the National Military Strategy. The coverage of the projects ranges from counter-terrorism through conventional conflict through countering WMD threats.

A. Mission Description and Budget Item Justification (cont'd)

In addition, the Advanced Systems and Concepts Office (ASCO) develops and maintains an evolving analytical vision of necessary and sufficient capabilities to protect the United States and allied forces and citizens from nuclear, biological, and chemical (NBC) attack; and identify gaps in these capabilities and initiate programs to fill them.

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B. Program Change Summary

	FY 2001	FY 2002	FY 2003
FY 2001 President's Budget Request (Feb 2000)	0	0	0
FY 2002 Amended President's Budget Request(June 2001)	0	0	0
FY 2003 President's Budget Request (Feb 2002)	0	0	146.1

Change Summary Explanation: In order to better define and capture its 6.2 resources, DTRA has created two new program elements: WMD Defeat Technology (0602716BR) and Strategic Defense Technologies (0602717BR). Effective with FY 2003, specific resources associated with Projects BB, BD, BE, BF, and BG will be split from the existing PE 0602715BR and realigned to PE 0602716BR, WMD Defeat Technology.

Project BB – Small Business Innovative Research (SBIR) – This project provides the means for stimulating technological innovation in the private sector, strengthens the role of small business in meeting DoD research and development needs; fosters and encourages participation of minority and disadvantaged businesses in technological innovation; and increases the commercial application of DoD supported research and development results. These efforts are responsive to PL 106-554.

FY 2001 Accomplishments

Funding and activities performed in Project BB are in PE 0602715BR.

FY 2002 Plans

Funding and activities performed in Project BB are in PE 0602715BR.

FY 2003 Plans

Small Business Innovative Research ($1,908K)

Support the Small Business Administration (SBA) National Direction by actively seeking small business contractors to perform innovative research.

Execute Agency-approved SBIRs.

Project BD - Weapon Effects Technologies – This project provides for the development and application of products and services to meet Weapons of Mass Destruction (WMD) and other special weapon effects challenges. This is accomplished using state-of-the-art science and engineering capabilities, including advanced first principles analysis, engineering modeling, simulation and networking technologies, and precision laboratory scale and field testing capabilities (supported by Project BE-Testing Technologies and Integration). The project integrates and applies these advanced capabilities to support decision making in the face of rapidly evolving WMD threats in both military and civilian sectors. Products being developed include WMD target planning and assessment tools, WMD hazardous materials transport and collateral effects prediction tools, tools and technologies used to mitigate the effects of WMD on facilities and people, and consequence assessment/management tools to evaluate and respond to WMD events. Additionally, this project develops the enabling technologies used to produce anti-terrorist/force protection tools. This project also develops technologies to support force protection assessments and forensic analysis of terrorist events as well as advanced blast mitigation/retrofit techniques. Such tools developed on this project are used to enable other projects including Project BC-Force Protection and Technology Applications, and Project BF-CP Operational Warfighter Support. Also, they are made available to civilian, anti-terrorism and disaster response support organizations.

This project provides and maintains the technology base, cornerstone to all components of weapons of mass destruction. It builds on expertise developed originally for nuclear weapon detonation(s) phenomenology [subsurface through exo-atmospheric], the evolution of the resulting disturbed environment, and the effects of that environment on systems. The expertise has expanded to all weapons of mass destruction. This is accomplished by providing weapons effects technology and information to US and Allied government planners, operators, doctrine authors, and decision makers. It also develops and maintains the technical capability to predict the impact of the effects of weapons of mass destruction on communications, radar and optical sensor systems and to support DoD components in the analysis and prediction of the response of systems that must operate in nuclear and

Project BD - Weapon Effects Technologies (cont'd)

naturally disturbed environments. DTRA is the sole remaining center of excellence in the area of nuclear weapon burst phenomenology and the resulting interaction with military and civilian systems. Starting with weapon output calculations from the DOE laboratories, DTRA develops the tools for predicting the subsequent evolution of the blast and shock interactions for low altitude, surface and sub-surface nuclear explosions; EMP; prompt, delayed, and trapped radiation; plasma and radioactive debris history. These efforts rely on ready access to high performance computing (HPC) resources to enable the efficient solution of the resultant large-scale numerical simulations. An integral component of this project is the provision of access to state-of-the-art HPC machines, high-speed connectivity, and superior technical support to DTRA researchers nationwide.

DTRA shares with the special weapons related defense community a stewardship responsibility to maintain the Nation’s core nuclear competencies and to successfully pass on this knowledge base and critical skills to the next generation of defense oriented scientists, engineers and weapon system developers. The Knowledge Application project is the tight integration of three efforts - Defense Threat Reduction Information Analysis Center (DTRIAC), Data Archival and Retrieval Enhancement (DARE), and Graybeard – dedicated to the collection and preservation of the data and knowledge derived during 50 years of nuclear weapons effects testing and studies; and a fourth effort, the Knowledge Applications component, that capitalizes on the expertise derived from these three programs to support current Agency technical programs. Without nuclear testing, research relies more on simulations and high fidelity calculations requiring correlation with this "legacy" data for validation.

Also included in this project are civilian salaries required to directly support the development of products and services provided by this project.

2001 Accomplishments

Funding and activities performed in Project BD are in PE 0602715BR.

Project BD - Weapon Effects Technologies (cont'd)

FY 2002 Plans

Funding and activities performed in Project BD are in PE 0602715BR.

FY 2003 Plans

Targeting Support ($16,954K)

- Validate the system-level Lethality/Vulnerability models for fixed WMD targets using test data from a large-scale test.
- Deliver version 2.0 of the Integrated Target Planning Tool Set (ITPTS v2.0) to the warfighter. Expand version 1.0 to include a full spectrum of targets and weapons.
- Demonstrate interoperability of intelligence, weaponeering, and collateral effects tools using ITPTS v2.0 during a mini-exercise in support of the CP2 ACTD.
- Develop a combustion model and advanced energetics material effects model for use in the agent defeat analysis module of the Integrated Munitions Effects Assessment (IMEA) software tool.
- Complete IMEA v.5.0 capability with a nuclear module and additional capabilities in the buildings, bunkers, and tunnels modules.
- Develop novel concepts for thermobaric weapon fills for use in the Thermobaric ACTD.
- Develop payload performance prediction models for baseline payloads against targets containing dry biological agents.
- Develop an engineering and semi-empirical model for IMEA that accounts for traditional damage modes, to include cratering and breach, as well as flexural damage for buried bunkers.
- Transfer the technology contained within the Design and Analysis of Hardened Structures to Conventional Weapons Effects (DAHS CWE) manual to the Security Engineering Manual to automate the access of the technology.

High Performance Computing, Precision Nuclear Effects, and Knowledge Application ($17,952K)

Complete a major upgrade to EMP/SREMP effects analysis methods and target assessment and planning tools used by warfighters.

Project BD - Weapon Effects Technologies (cont'd)

Distribute updated/documented nuclear phenomenology and system effects modeling software.

Complete review of atmospheric nuclear effects knowledge base; identify shortfalls in context of anticipated requirements for system hardening and effects mitigation.

Obtain warfighters' operational approval of EMP/SREMP effects tools.

Obtain NWE experts' review/approval of atmospheric nuclear effects knowledge base.

Demonstrate a family of systems simulation capability. Incorporate suite of system-level tools into visualization suite.

Continue revision of high altitude and underground burst nuclear weapon codes and their incorporation into to large, scalable parallel computers.

Maintain capability to provide the DTRA research community with ready access to world-class HPC resources.

Complete culling and converting magnetic/electronic storage media to newer format.

Integrate DTRIAC and DARE programs.

Continue to enhance DARE usability and functionality through adaptation and integration of current web technologies.

Relocate DARE Operational Center from DC area to Albuquerque.

Complete electronic guides to the data and knowledge for all five Graybeard Domains.

Disseminate Knowledge Applications research findings and lessons learned (e.g., from the FY 2002 PILE DRIVER and HARD HAT UGT review, GVN improvements, Safeguard C – Test Readiness).

Hazard Prediction and Assessment Capability (HPAC)/Consequence Assessment Tool Set (CATS) ($16,757K)

Deliver HPAC 4.1 to JFCOM, EUCOM and other CINCs and service organizations. This version expands and validates industrial facility models for combustion and burning,

validated urban transport, building infiltration, and casualty tables based on dynamic population movement.

Deliver HPAC-CATS (Nuclear) operational version to STRATCOM.

Project BD - Weapon Effects Technologies (cont'd)

Leverage existing GIS-based infrastructure, consolidate collateral assessment tools (HPAC/CATS), and demonstrate client-server architecture for a forward deployable collateral assessment system in which the server performs most processing.

Initiate integration of hazard prediction tools into OSD Joint Effects Module Block 1.

Develop Littoral-region mesoscale weather forecasting model and demonstrate integrated capability.

Complete initial validation of urban dispersion modeling capability and continue collaboration with United Kingdom and full-scale testing.

Advanced Systems and Concepts Office (ASCO) ($8,180K)

Stimulate, identify, and execute high-impact studies that encourage new thinking, address technology gaps, and improve the operational capabilities of DoD, DTRA, and other Government Agencies.

Commission and perform a wide array of study efforts to address areas of force protection and operations; homeland defense and countering terrorist attacks; strategic issues; and other unconventional threats and vulnerabilities.

Finalize the conceptual plan for an integrated national bio-forensics capability.

Accomplish broad spectrum WMD intelligence collection gaps and needs assessment.

Infrastructure ($11,650K)

Provided for payment of civilian salaries.

Project BE – Testing Technologies and Integration – This project provides a unique national test-bed capability for Weapons of Mass Destruction (WMD) facility characterization, weapon-target interaction, and WMD facility defeat for various types of test/demonstration functions to respond to operational needs. The project develops, provides and maintains test-beds used by the DoD, the Services, the CINCs and other federal agencies to evaluate the implications of WMD, conventional, and other special weapon use against U.S. military or civilian systems and targets. This project leverages fifty years of testing expertise to investigate weapons effects and target response across the spectrum of hostile environments that could be created by proliferant nations or terrorist organizations with access to advanced conventional weapons or WMD (nuclear, biological and chemical). Specific programs supported by this project include: (1) Hard Target Defeat (HTD); (2) Anti-terrorism (AT); (3) CP Counterforce Advanced Concept Technology Demonstration (ACTD); and (4) Special Operations Forces (SOF). This project maintains testing infrastructure to support warfighters, other government agencies, and friendly foreign countries testing requirements on a cost reimbursable basis. This project also develops strategy and planning for a WMD test-bed infrastructure focusing on nuclear, biological, and chemical facilities, and the hard and deeply buried facilities in which these activities are often located. The project provides support for full and sub-scale tests that focus on weapon-target interaction with fixed soft and hardened facilities to include aboveground facilities, cut-and-cover facilities and deep underground tunnels. Specific activities include testbed design and construction, instrumentation and data collection, test coordination and execution, and post-test analysis and documentation. This project directly supports Project BC in PE 0602717BR, and Projects BD, and BF in PE 0602716BR and, in PE 0603160BR, Project BJ and BK.

FY 2001 Accomplishments

Funding and activities performed in Project BE are in PE 0602715BR.

FY 2002 Plans

Funding and activities performed in Project BE are in PE 0602715BR.

Project BE – Testing Technologies and Integration (cont'd)

FY 2003 Plans

Test-Bed Operation and Support ($8,665K)

Continue to provide unique national test-bed capabilities for weapon-target interaction and WMD programs. TDT expects to support approximately 80 tests this year.

Provide an inventory of unique targets, infrastructure support, and expertise for conduct of major integrated test programs, including instrumentation maintenance, gauge installation, data recording, source diagnosis, environmental support, safety support, experiment installation, experiment fielding, and test fielding.

Field Support ($2,266K)

Continue to provide infrastructure support for maintenance of government vehicles, transportation of equipment, communication, utilities for facilities, rental of facilities, supplies, custodial service, and procurement of equipment in support of test execution.

Simulator Technology ($625K)

Continue to maintain the Large Blast and Thermal Simulator in caretaker status. Tests can be accomplished with short notice.

Project BF – CP Operational Warfighter Support - This project will provide targeting and Intelligence Community (IC) support, exercise CP technologies and products with the users, develop DoD compliant simulations that exploit CP models for target planning and collateral effects prediction, and demonstrate CP capabilities in operationally realistic environments. The technical approach is to integrate technologies developed in other CP projects, to conduct a full spectrum of tests to verify capability enhancement, to expose customers to these capabilities in exercises, wargames and demonstrations, to integrate CP technologies into customer operations, and to support use of these capabilities during contingency operations. This project focuses on three thrusts that support outside customer requirements. The three thrusts are: 1) Hard Target Defeat (HTD) program, 2) Weapons of Mass Destruction (WMD) Assessment and Analysis Center (WMDAAC), and 3) Commanders-in-Chief (CINC) Planning Support. The CP Operational Warfighter Support project provides the bridge between the CP technology base and operational community needs. The overall project goal is to support the Joint Chiefs of Staff (JCS), the warfighting CINCs and Services/agencies engaged in countering WMD threats and to protect the U.S. and its allies against military or terrorist use of WMD.

Hard Target Defeat Program. The United States and its allies face a growing threat related to critical military targets hidden within and shielded by hardened, deeply buried tunnel complexes. These complexes may house biological/chemical/nuclear weapons production or storage facilities; command, control, and communications facilities; and theater ballistic missiles and their transporter-erector-launchers (TELs). An objective of this project is to examine the existing U.S. and Allied capabilities to hold hardened, deeply buried tunnel targets at risk, thereby defining a current performance baseline. Any deficiencies will be identified and the ability of planned systems to address these deficiencies will be assessed. Finally, new technologies needed to mitigate remaining shortfalls will be evaluated as candidates for new hard target defeat acquisitions. Activities respond to warfighting requirements derived from the Hard and Deeply Buried Target Defeat capstone requirements document, and to RDT&E priorities by the Office of the

Project BF – CP Operational Warfighter Support (cont'd)

Under Secretary of Defense for Acquisition, Technology and Logistics (OUSD(AT&L)). Funds added as a result of the Secretary of Defense strategic review for FY 2002 are being used to develop technologies identified in the Hard and Deeply Buried Target Defeat S&T Master Plan.

Targeting and IC Support, part of Hard Target Defeat, provides functional vulnerability assessments of hostile foreign systems in support of warfighter and IC requirements. It assists the CINCs and IC in target planning against hard and deeply buried facilities. The assessments leverage databases, methodologies, and technical expertise developed during Balanced Survivability Assessments (PE 0602717BR, Project BC). Details of specific individual assessments are classified.

This project focuses weapon/target interaction and target planning tool technology base efforts completed in Project BD on tunnel applications. The program depends on test planning and execution support from Project BE. Products from this project are transitioned to PE 0603160BR, Project BK for Command, Control, Communications, and Intelligence (C3I) facility demonstration and the Thermobaric Weapon (TW) demonstration. Efforts in this program provide part of the technology base needed for counterproliferation activities conducted in other DoD programs.

WMD Assessment and Analysis Center. The WMDAAC provides the warfighter with the capabilities and understanding for countering the use and effect of Weapons of Mass Destruction (WMD) through the advancement of simulation technology, assessment of operational impact, and the development of collaborative capabilities. Specifically, the WMDAAC: 1) Develops advanced simulations from first-principles physics models produced in other TD projects (extensively Project BD). WMDAAC personnel provide an interface between DTRA model developers and the weapons effects simulation community to ensure maximum

utility of DTRA models in distributed interactive simulations through compliance with High Level Architecture (HLA) standards and protocols. 2) The WMDAAC uses these advanced

Project BF – CP Operational Warfighter Support (cont'd)

simulations to assist the warfighter in quantifiably assessing operational theater plans and post-attack warfighting effectiveness and to develop alternatives to mitigate the effects of WMD. 3) The WMDAAC develops and adapts capabilities to project information through advanced visualization techniques and to facilitate collaboration at widely dispersed locations. Commercial and government developed technologies are selected and proven in a research environment, and then transitioned to the DTRA Operations Center and/or other warfighter customers. 4) The WMDAAC provides warfighters and first responders with ready access to mature computer models, WMD databases and expert field assistance and training. The end result is to provide more realistic models and simulations of the effects of WMD for use in training, analysis, experimentation, and acquisition. Models and simulations will support the fielding of joint and service M&S system developments (e.g., Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS), Joint Warfare System (JWARS)).

CINC Planning Support. This activity develops modeling and simulation tools and applies them to support warfighters in development of war plans. It produces theater and campaign level simulation. These tools are used in a program called War Planning Support (WPS) to assess/analyze war plans or to evaluate the benefits of new technology on improved warfighter efficiency and effectiveness. Two tools currently being developed are the Integrated Theater Engagement Model (ITEM) and the Synthetic Exercise Environment (SEE).

FY 2001 Accomplishments

Funding and activities performed in Project BF are in PE 0602715BR.

FY 2002 Plans

Funding and activities performed in Project BF are in PE 0602715BR.

Project BF – CP Operational Warfighter Support (cont'd)

FY 2003 Plans

Hard Target Defeat Demonstrations ($10,956K)

- Conduct functional defeat operational demonstrations on the C3I tunnel complex to be constructed at the Nevada test Site.
- Determine reconstitution time for functional defeat attacks on the C3I tunnel facility.
- Complete construction of tunnel portals and begin planning for operational tunnel defeat demonstrations using standoff and advanced weapons at the White Sands Missile Range.
- Conduct demonstrations and evaluations of sensor technologies to improve battle damage assessment (BDA) of functional attacks on tunnel facilities.

Hard Target Defeat Technology ($16,186K)

- Continue development of find/characterize/assess technologies to improve the national capability to functionally defeat tunnel facilities.
- Continue development and validation of remote site geologic characterization technology.
- Continue development of reverse engineering methodology to characterize tunnel facilities.
- Continue development of system fragility and response models for C3I equipment.
- Identify mission critical equipment and vulnerabilities for WMD production tunnel facilities.
- Develop tunnel aimpoint optimization models to increase the effectiveness of the planning tools developed for warfighter planners.

Continue assessments of hostile facilities based on JCS and CINC priorities. Details are classified.

Continue development of defeat technologies to model and predict penetration of multiple weapons, tunnel damage, and advanced weapon performance.

Continue development of high-payoff novel explosive concepts using advanced energetic materials to enable defeat of targets currently invulnerable to weapons solutions.

Develop improved weapon/target interaction models of tunnels and liners to nuclear groundshock environments and implement them in Munitions Effects Assessment (MEA) planning tool.

Project BF – CP Operational Warfighter Support (cont'd)

Demonstrate a prototype of the Underground Targeting and Analysis System (UTAS) that develops three-dimensional models of underground targets.

Continue targeting and IC support by conducting assessments of hostile facilities based on JCS and CINC priorities. Details are classified.

WMD Assessment and Analysis Center ($11,045K)

Begin definition of entity-to-aggregate level weapon-target effects models. Incorporate knowledge management techniques using genetic algorithms in the weapon effects models and simulations. Enable inclusion of individual weapon system (e.g., PAC-3, F-22) effects into theater-level models.

Integrate Nuclear Weapon Effects into the Joint Weapon Effects Analysis Tool Set in order to support real/near-real time viewing of dynamic weapons effects in a simulated environment. Include the effects of WMD, conventional weapon effects, and 3D visualization of target.

Complete Airbase Effects Assessment looking at the implications of WMD on airbase operations and the resultant theater impact.

Complete Handheld Wireless Collaboration Study, investigating collaboration and data transfer using wireless devices to support WMD consequence assessment and management.

Begin implementation of the study recommendations.

Demonstrate tools and solicit warfighter requirements at the Interservice/Industry, Test, Simulation, and Education Conference and at the World-Wide Chemical Conference.

Continue research and development of collaborative tools to ensure effectiveness and compatibility with the customer by developing and demonstrating to warfighters and first responders portable automated access capabilities to DTRA products using advanced CINC21 ACTD communication technologies and knowledge management.

Continue exercise participation (CINC 21 ACTD, Fleet Battle Experiments, US Forces Korea Ulchi Focus Lens) to demonstrate newly developed advanced simulations, and WMD information resources and tools.

Project BF – CP Operational Warfighter Support (cont'd)

CINC Planning Support ($7,412K)

Consolidate ACE Versions 1-4 into Synthetic Exercise Environment (SEE) database.

Provide exercise support for Central Harmony and ABLE ALLY (USSTRATCOM & SHAPE) using SEE.

Implement a web-enabled version of SEE and the supporting web-site data repository.

Complete all War Planning Support (WPS) projects for MARFOR/CPF (USPACOM), CNE (USEUCOM), USCENTCOM, and 32nd AAMDC (USPACOM/USCENTCOM).

Complete approved WPS support requirements for USFK/CFC.

Project BG – Nuclear Operations – This program directly reflects the National Military Strategy, supports the provisions of Joint Vision 2010, and is directed by the JCS in the Joint Strategic Capabilities Plan (JSCP) Nuclear Annex. This project encompasses a new activity--WMD (Nuclear) Protection and Response. Responsive to the oversight of the Nuclear Weapons Council, they provide critical support to the CINCs, Services, JCS and OSD. This project continues the realignment begun by DTRA at its inception so as to deal with the emerging 21st Century strategic landscape.

WMD (Nuclear) Protection and Response. As a new activity and in direct support to the National Military Strategy, these programs will promote initiatives to detect the surreptitious introduction and use of weapons of mass destruction against the U.S. and its allies thereby protecting our citizens and critical infrastructures. Potential adversaries, whether nations, terrorist groups or criminal organizations, will be tempted to use asymmetric means of war such as weapons of mass destruction to counter U.S. conventional weapon superiority. Promoting such initiatives enhances deterrence and proactively supports the agency's mission of WMD threat reduction.

FY 2001 Accomplishments

Funding and activities performed in Project BG are in PE 0602715BR.

FY 2002 Plans

Funding and activities performed in Project BG are in PE 0602715BR.

FY 2003 Plans

WMD (Nuclear) Protection and Response ($15,587K)

Develop portable, mobile, and rapidly deployable radiation detection and tracking system, a portion of which will be comprised of remote sensors linked to central receiving/processing station via RF signals. Continue effort and begin integration of detection arrays with communication and analytical software. Expand upon mobile prototype, and continue software development toward future deployment of

Project BG – Nuclear Operations (cont'd)

three attended or unattended variants, including mobile, maritime, and stationary or portal.

Provide CINC Technical Support Groups (TSG) ability to employ the system based on intelligence cueing. Continue effort and expand to varied geographic and operational environments to evaluate operability.

Develop and field passive and active Special Nuclear Material (SNM) detection systems capable of detection in cases where SNM is shielded; current detector technologies do not perform well when SNM is shielded for gamma and/or neutron emissions. Continue effort by funding scientific review panel and technical support to review studies and proposals to determine promising track for detailed research.

Produce through development and adaptive engineering detection equipment capable of rapid and standoff detection of radioactive materials across a broad spectrum of operational environments including uncertain and hostile. Develop equipment that without significant degradation is waterproof, shockproof, and resistant to extreme conditions and sustained employment. Develop lighter weight and smaller detector systems for more diverse field employment.

Integrate through new concept design or adaptive engineering multiple detection sensor systems to facilitate standoff operator detection of radioactive material and passive or active trigger, alarm, destruct, or detection devices targeting the operator.

Establish administrative support structure to support technical reporting and document production of R&D development efforts. Reporting program must have broad enough scope to permit publication at classified and unclassified levels, and permit literature review and exploration of existing technologies to eliminate duplicating or redundant efforts, and exploit dual or multiple-use technologies.

Conduct operational analysis of commercial, vendor, "off-the-shelf", laboratory-produced concept design, or theoretical radiation detection devices in order to determine relative efficiencies, capabilities, and technologies to further enhance the ability to develop, procure, and employ reliable and current technologies for

Project BG – Nuclear Operations (cont'd)

radioactive material detection. Enhance tools and capability for rapid attribution of the source of a nuclear event.

C. Other Program Funding Summary: N/A

D. Execution (Entities receiving 10% or more of total funding available in the PE/FNC.):

N/A