

*Report on*

# Activities and Programs for Countering Proliferation and NBC Terrorism

Volume I

Executive Summary

May 2005



***Our most critical challenge today – Combating WMD.***

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VOLUME I  
EXECUTIVE SUMMARY

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*Counterproliferation  
Program  
Review  
Committee*



## FOREWORD

The original direction given in the *1994 National Defense Authorization Act* was to have the major United States (U.S.) Departments and agencies with counterproliferation research, development and acquisition programs work together to minimize redundancies and identify synergies. The emphasis was on nonproliferation and, if that failed, counterproliferation involving military action.

Since the establishment of the Counterproliferation Program Review Committee (CPRC) in 1994, major changes have taken place within the U.S. Government. In particular, the promulgation of the President's *National Strategy to Combat Weapons of Mass Destruction (WMD)* in 2002 precipitated new thinking about how we organize for and resource our national efforts to combat WMD. Other examples include the establishment of the Department of Homeland Security and developments in the medical aspects of combating WMD. In response to this, many CPRC participant organizations have expressed the need to review both the membership and scope of the CPRC. Although the Department of Homeland Security has participated informally in CPRC activities this year, they have rejected recommendations that they become a formal member of the CPRC. The Department of Health and Human Services participation has been even less direct this past year.

Any review of the membership and scope should take into account that Congress has extended the Charter of the CPRC through September 30, 2008. With the remaining years on the Charter, it is important to ensure that the report is useful and relevant.



Dale Klein  
Executive Secretary  
Counterproliferation Program Review Committee

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## **EXECUTIVE SUMMARY**

### **ESTABLISHMENT OF THE COUNTERPROLIFERATION PROGRAM REVIEW COMMITTEE**

In the 1994 National Defense Authorization Act (as amended), Congress directed that the Counterproliferation Program Review Committee (CPRC) be established to review activities and programs related to countering proliferation, including paramilitary and terrorist nuclear, biological, and chemical (NBC) threats. The CPRC is chaired by the Secretary of Defense; the other members are the Secretary of Energy (as vice chair), the Director of Central Intelligence (DCI), and the Chairman of the Joint Chiefs of Staff (CJCS).

The CPRC is chartered to make and implement recommendations regarding interdepartmental (specifically, Department of Defense (DoD), Department of Energy (DOE), Joint Chiefs of Staff (JCS), and the intelligence community (IC)) activities and programs to address shortfalls in capabilities to counter the proliferation of weapons of mass destruction (WMD)—chemical, biological, radiological, and nuclear—and their means of delivery (WMD/M). The findings and recommendations of the CPRC’s annual review for 2005 are presented in this, its twelfth annual report to Congress.

### **COMPOSITION OF THE CPRC AND STANDING COMMITTEE**

The Standing Committee is composed of the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs (ATSD(NCB)) (as chair); the Deputy Administrator for Defense Nuclear Nonproliferation, DOE (as vice chair); the Special Assistant to the DCI for Weapons Intelligence, Nonproliferation, and Arms Control (WINPAC); the Deputy Director for Force Structure, Resources, and Assessment, Joint Chiefs of Staff (J-8); and the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (ASD(SO/LIC)).

### **NATIONAL STRATEGY TO COMBAT WEAPONS OF MASS DESTRUCTION**

The 2002 *National Strategy To Combat Weapons of Mass Destruction* has three pillars: *Strengthened Nonproliferation To Combat WMD Proliferation; Counterproliferation To Combat WMD Use; and Consequence Management To Respond to WMD Use*. These pillars are seamless elements of a comprehensive approach. The National Strategy describes four enabling functions that cut across the pillars: intelligence collection and analysis on WMD, their delivery systems, and related technologies; research and development to improve the U.S. ability to respond to evolving threats; bilateral and multilateral cooperation; and targeted strategies against hostile states and terrorist groups.

The first pillar of the National Strategy, *strengthened nonproliferation*, entails:

- Active nonproliferation diplomacy
- Multilateral regimes (arms control and other agreements)
- Nonproliferation and threat reduction cooperation

- Controls on nuclear materials
- U.S. export controls
- Nonproliferation sanctions (i.e., proliferation prevention).

The second pillar, *counterproliferation*, entails:

- Interdiction
- Deterrence
- Defense and mitigation (i.e., active defense, passive defense, and mitigation of crises).

And the third pillar, *consequence management*, entails actions to respond to the consequences of WMD use on U.S. territory, or U.S. forces abroad, as well as to assist friends and allies. These include:

- Minimize the consequences of WMD use against our population
- Respond to effects of WMD use against our forces
- Respond to effects of WMD use against our friends and allies.

## **INTELLIGENCE CAPABILITIES COMMISSION REGARDING WEAPONS OF MASS DESTRUCTION**

The *Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction*, Report to the President of the United States, March 31, 2005, provides the results of the Commission's review of intelligence findings and pre-war judgments. A DoD interim response to the WMD Commission's recommendations will be provided as soon as the Department has had an opportunity to evaluate the report findings and implications of the recommendations. The Commission's report was released too late for the CPRC to evaluate it for this year's report. The CPRC will include its evaluation in the 2006 CPRC Report to Congress.

## **INTERAGENCY EFFORTS TO COMBAT WEAPONS OF MASS DESTRUCTION**

Integration of security efforts to combat WMD/M proliferation and WMD terrorist threats is the responsibility of U.S. national-level interagency organizations that address critical policy, strategy, and research, development, and acquisition (RDA) objectives. Since 1994, the CPRC has ensured that interdepartmental RDA activities and programs of three departments—DoD, DOE, and the IC—respond to U.S. policy and strategy objectives for countering WMD/M proliferation and WMD terrorism. Other interagency organizations—including the Nonproliferation and Arms Control Technology Working Group, the Technical Support Working Group (TSWG), the National Security Council–led Counterterrorism and National Preparedness Policy Coordinating Committee, the Community Nonproliferation Committee, and the Measurement and Signatures Intelligence Biological Warfare Technology Steering Group—address complementary aspects of national policy and strategy objectives associated with countering WMD/M proliferation and WMD terrorist threats. The National Security Council and Homeland Security

Council have also established a joint Policy Coordinating Committee on Domestic Nuclear Detection. Commonly, the departments themselves also have their own internal committees to meet their specific requirements for counterproliferation (CP)- and combating terrorism (CT)-related demands. The CPRC focus is on maximizing synergies to combat WMD and WMD terrorism by coordinating activities among DoD, DOE, the Joint Staff, and the IC.

The Intelligence Reform and Terrorism Prevention Act of 2004 (Public Law 108–458) requires, within 18 months of enactment, the establishment of a National Counterproliferation Center, taking into account all appropriate government tools to prevent and halt the proliferation of WMD, their delivery systems, and related materials and technologies. The President may waive this requirement if it is determined that the center would not materially improve the ability of the U.S. Government to prevent and halt such proliferation. CPRC member organizations will support the President in this determination.

## **CPRC AREAS FOR CAPABILITY ENHANCEMENT**

To respond effectively to its charter, the CPRC established Areas for Capability Enhancement (ACEs). The ACEs are tied to the three pillars of *National Strategy to Combat Weapons of Mass Destruction*—nonproliferation, counterproliferation, and consequence management. They also have linkages to the combating WMD requirements of each combatant commander (COCOM). The ACEs serve as a means to categorize areas where progress is needed to enhance the combating WMD capabilities of the U.S. The ACEs also define and prioritize the capabilities, across the CPRC departments and agencies, including, most prominently, DOE and the IC, which are required to counter the persistent threat from proliferation and NBC terrorism. The ACEs provide:

- A unified framework for reviewing progress and assessing combating WMD requirements
- Broad guidance for RDA investment involving combating WMD activities and programs.

Each year the CPRC staff evaluates the ACE structure to ensure that it properly reflects and responds to current guidance or developments, proposing changes if necessary. The eight combating WMD ACEs for 2005 and their respective organizational priorities are listed in Table 1. These priorities are the result of a formal prioritization session by the five CPRC Standing Committee (SC) members. After reviewing each of the proposed 2005 ACEs and considering the overall national strategy in this area, each organization voted its own strategic direction in answering the U.S. Government’s combating WMD mission. This resulted in an overall SC priority as well as a specific prioritization for each individual organization (DoD, DOE, IC).

Each ACE is critical to the success of the combating WMD mission. Together they constitute a layered defense against the WMD threat. The ACEs are prioritized to respond to congressional direction to prioritize combating WMD efforts. Their priority is not tied to the budget required to make progress in that area. For example, Active Defense is primarily missile defense, which has a budget much larger than the other areas, but it is not the highest importance for additional investments. The priorities of any organization are based not only on national importance but also on the specific missions of the organization doing the budget planning. Each organization has its own missions that determine its priorities and investments. Although an objective of the prioritization table was to help inform investment decisions, factors other than

national priorities, such as the ability to make progress with investments, must also be considered. Some of the ACEs with high priorities are best addressed through policy and process improvements that may not require large investments. Other ACEs are more amenable to technology improvements through the investment of higher levels of funding.

Since the ACEs this year have been defined commensurate with the Joint Staff mission areas, they are directed at more military operations aspects to define combating WMD applications and capability needs. Since the ACEs are not descriptive of homeland security missions and do not directly apply to the Department of Homeland Security (DHS), they could not provide a DHS-centric priority. Therefore, we have not included a DHS column in Table 1. DHS was invited to join the CPRC as a formal member but declined. However, DHS does participate in the CPRC action officer and SC meetings. DHS also conducts interagency reviews of homeland security research and development to address duplication concerns and to take advantage of synergies. DHS will report its efforts through other congressional committees.

**Table 1: 2005 ACEs and ACE Priorities of CPRC-Represented Organizations**

ACE Priorities				Areas for Capability Enhancements
SC*	DoD	DOE	IC	
1	1	3	2	<b>Interdiction.</b> Conduct operations to track, intercept, search, divert, seize, or stop trafficking of WMD, delivery systems, related material, technologies, and expertise to/from state and/or nonstate actors of proliferation concern. Operations will include redirection of international shipments of unauthorized WMD, related material, or WMD development information sources.
2	2	4	1	<b>Elimination.</b> Conduct operations to support the systematic seizure, security, removal, disablement, or destruction of a state or nonstate actor's capability to research, develop, test, produce, store, deploy, or employ WMD, delivery systems, related technologies, infrastructure, and/or technical expertise.
3	5	1	5	<b>Safety and Security.</b> Monitor and assess to ensure that WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment possessed by allies, cooperating nations, or other entities are safe and secure from theft, sabotage, or accidental or unintentional discharge. Measures will ensure that WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment possessed by the U.S. are safe and secure from theft, sabotage, or accidental or unintentional discharge.
4	3	**	7	<b>Passive Defense.</b> Measures, including medical, taken by key host nation (HN) installations, any U.S. installation and facility, and ports of embarkation and debarkation to reduce the vulnerability and minimize the effects of WMD. Measures may include early and avoidance warning, operations security, dispersion, individual and collective protection, WMD medical response, detection, reporting, and decontamination.
5	7	2	3	<b>Treaties and Agreements.</b> Support the employment of the full range of diplomatic, economic, informational, and military instruments of national power to establish global norms against the proliferation of WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment. Efforts should focus on supporting the strengthening of alliances, ensuring the compliance of treaties and agreements, and establishing new treaties to dissuade or impede the proliferation of WMD, as well as slowing and making more costly the access to sensitive technologies, material, and expertise.
6	4	**	4	<b>Offensive Operations.</b> Conduct operations to eliminate WMD threat, deter the use, and when necessary, respond to the use of WMD, while being prepared to defend against the use and effects of WMD.
7	6	**	6	<b>Active Defense.</b> Employ actions to prevent the conventional and unconventional delivery of WMD. Measures include: detect, divert, and destroy adversary WMD and delivery means while en route to their targets. This may include offensive and defensive counterair operations against aircraft and missiles, and security operations to defend against conventionally delivered WMD.
8	8	5	8	<b>Consequence Management.</b> Measures to restore essential government services, such as the public health system, and provide emergency relief to governments, businesses, and individuals affected by the consequences of a WMD event.

\*Integrated Standing Committee priorities based on input from five members: OSD(NCB), Joint Staff, DOE, WINPAC, and OSD(SO/LIC).

\*\*DOE did not rate Passive Defense, Offensive Operations, or Active Defense ACEs because they are not relevant to its mission.



Each of the eight ACEs selected for the 2005 report has a corresponding set of mission or operational activities. These missions/operations are derived from DoD Joint Publication (JP) 3-40, *Joint Doctrine for Combating Weapons of Mass Destruction*, and from the DoD *Combating WMD Enhanced Planning Procedures (EPP) Study*. They cover the spectrum of actions that might be undertaken to meet national policy guidance on a certain capability area. Table 2 depicts the ACEs and their respective mission/operational activities.

**Table 2: ACEs and Corresponding Missions/Operational Activities**

ACE (SC priority order)	Missions/Operational Activities
<p><b>1. Interdiction.</b> Conduct operations to track, intercept, search, divert, seize, or stop trafficking of WMD, delivery systems, related material, technologies, and expertise to/from state and/or nonstate actors of proliferation concern.</p>	<p>Detect and assess sale and/or transfer of WMD            Assess post-interdiction operations            Track and intercept WMD            Search and seize WMD            Isolate and secure WMD            Detect and characterize WMD            Transport WMD</p>
<p><b>2. Elimination.</b> Conduct operations to support the systematic seizure, security, removal, disablement, or destruction of a state or nonstate actor's capability to research, develop, test, produce, store, deploy, or employ WMD, delivery systems, related technologies, infrastructure, and/or technical expertise.</p>	<p>Monitor WMD programs            Assess post-elimination operations            Detect and characterize WMD            Isolate WMD programs            Secure and store foreign WMD            Exploit WMD programs            Defeat or neutralize material            Disable WMD            Transfer or demilitarize WMD</p>
<p><b>3. Safety and Security.</b> Monitor and assess to ensure that WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment possessed by allies, cooperating nations, or other entities are safe and secure from theft, sabotage, or accidental or unintentional discharge.</p>	<p>Store WMD            Secure WMD            Monitor WMD            Emplace and recover tags, sensors, and monitors</p>
<p><b>4. Passive Defense.</b> Measures, including medical, taken by key host nation (HN) installations, any U.S. installation and facility, and ports of embarkation and debarkation to reduce the vulnerability and minimize the effects of WMD.</p>	<p>Sense (provide early and continuous detection, identification, and warning about WMD threats)            Shape (describe the WMD threat and provide situational awareness)            Shield (protect the force from the effects of WMD threats)            Sustain (undertake decontamination and medical actions necessary to continue operations and restore combat power, essential functions, and/or pre-incident capabilities)</p>
<p><b>5. Treaties and Agreements.</b> Support the employment of the full range of diplomatic, economic, informational, and military instruments of national power to establish global norms against the proliferation of WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment.</p>	<p>Conduct surveillance and tracking of suspected WMD threats            Emplace and recover tags, sensors, and monitors            Maintain forward presence            Conduct joint and multinational exercises            Conduct information operations            Conduct military-to-military engagement            Provide security assistance</p>
<p><b>6. Offensive Operations.</b> Conduct operations to eliminate WMD threat, deter the use, and when necessary, respond to the use of WMD, while being prepared to defend against the use and effects of WMD.</p>	<p>Identify and characterize targets for attack            Conduct surveillance and tracking of known WMD threats            Attack WMD and related technologies in transit            Attack WMD targets            Attack WMD-related targets</p>

**Table 2: ACEs and Corresponding Missions/Operational Activities (continued)**

ACE (SC priority order)	Missions/Operational Activities
<b>7. Active Defense.</b> Employ actions to prevent the conventional and unconventional delivery of WMD. Measures include: detect, divert, and destroy adversary WMD and delivery means while en route to their targets.	Conduct surveillance and tracking Defend against missile threats Defend against air threats Conduct security operations
<b>8. Consequence Management.</b> Measures to restore essential government services, such as the public health system, and provide emergency relief to governments, businesses, and individuals affected by the consequences of a WMD event.	Assess Coordinate operations Provide health service support Decontaminate

## CPRC ASSESSMENT OF PROGRESS IN MEETING COMBATING WMD REQUIREMENTS

Each year the CPRC focuses on identifying key RDA program accomplishments and milestones; highlighting planned near-, mid-, and long-term capability improvements (e.g., Volume III, Figure C-1: Milestones of Proliferation Prevention); assessing where shortfalls exist in combating WMD capability; and making recommendations to improve capabilities. Progress strengthens U.S. capabilities for combating WMD and WMD terrorism and includes (1) the rapid fielding of essential capabilities; (2) coordinating and focusing interorganizational RDA activities; (3) expanding international cooperative activities; and (4) improving the integration, management, and oversight of activities and programs related to countering proliferation and WMD terrorism. The CPRC is able to report that progress continues to be made in all ACE priority areas, but some ACEs face greater challenges than others.

***CPRC Major Assessment Findings.*** Many useful efforts are underway, and several ACEs are experiencing considerable enhancement of capabilities with programs now in development. However, there are concerns in various ACEs. The CPRC believes these are the areas on which additional attention should be focused. Briefly, these areas include the need for (1) more capable sensors and detectors for chemical and biological agents and radiological material; (2) better intelligence and counterintelligence capabilities to identify adversaries' intentions and planned operations, including their activities in the U.S.; (3) continued development of missile defense technologies; and (4) continued development of technologies to bring foreign chemical, biological, radiological, and nuclear (CBRN) material under control and to protect it from theft and smuggling. Table 3 highlights selected issues that could constrain the ability to meet requirements in specific performance areas.

As Table 3 indicates, better sensors or detectors are a *technical* challenge in six of the eight 2005 ACEs: Interdiction, Safety and Security, Passive Defense, Offensive Operations, Active Defense, and Consequence Management ACEs. Current sensors do not yet meet the needs of the combating WMD community. Generally, technological difficulties also continue to stand in the way of the missile defense element of Active Defense. Intelligence, including counterterrorist intelligence is an enabling function that supports most ACEs and extends to interagency and international cooperation. The IC is acting, through technological and other means, to improve our capability to anticipate the actions of our adversaries.

**Table 3: Assessed Performance Area Challenges**

2005 ACEs (SC Priority Order)	Performance Areas*		
	Cost	Schedule	Technology
<b>Interdiction.</b> Conduct operations to track, intercept, search, divert, seize, or stop trafficking of WMD, delivery systems, related material, technologies, and expertise to/from state and/or nonstate actors of proliferation concern.		Evolving WMD elimination mission	Navy-hosted multinational Proliferation Security Initiative (PSI) wargames to explore operational capability and interoperability issue Counterterrorist intelligence (global target set difficult) Sensors (biological warfare (BW) threats difficult to detect—dual-use facilities)
<b>Safety and Security.</b> Monitor and assess to ensure that WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment possessed by allies, cooperating nations, or other entities are safe and secure from theft, sabotage, or accidental or unintentional discharge.			Counterterrorist intelligence (global target set difficult) Sensors (BW threats difficult to detect—dual-use facilities)
<b>Passive Defense.</b> Measures, including medical, taken by key host nation (HN) installations, any U.S. installation and facility, and ports of embarkation and debarkation to reduce the vulnerability and minimize the effects of WMD.	Lengthy program timelines for detection, identification, and characterization of nontraditional agents (NTAs), development of medical products for NTAs, and development of medical CBRN defense products	Lengthy program timelines for detection, identification, and characterization of nontraditional agents (NTAs), development of medical products for NTAs, and development of medical CBRN defense products	Counterterrorist intelligence (global target set difficult) Detection, identification, and characterization (standoff ranges insufficient) Prediction and battle management (insufficient information management “backbone”) Force protection (standoff explosive detection) Size, power, and weight limitations Medical defenses against biological, chemical, and radiological threats face technical challenges, as well as cost and schedule challenges
<b>Offensive Operations.</b> Conduct operations to eliminate WMD threat, deter the use, and when necessary, respond to the use of WMD, while being prepared to defend against the use and effects of WMD.	Actionable WMD intelligence for hard and deeply buried targets (HDBTs) and underground facilities (UGFs)	Evolving WMD elimination mission	Counterterrorist intelligence (global target set difficult) Sensors (BW threats difficult to detect—dual-use facilities and standoff detection sensor capability) Agent dispersion complexities difficult to model Prediction and battle management (insufficient information management “backbone”) Characterization models (physical layout difficult to characterize) Technology to detect and defeat mobile targets remains challenging
<b>Active Defense.</b> Employ actions to prevent the conventional and unconventional delivery of WMD. Measures include: detect, divert, and destroy adversary WMD and delivery means while en route to their targets.		Missile defense (critical technological challenges in boost phase) Evolving WMD elimination mission	Missile defense (critical technological challenges in boost phase) Counterterrorist intelligence (global target set difficult) Sensors (BW threats difficult to detect—dual-use facilities) Agent dispersion complexities difficult to model

**Table 3: Assessed Performance Area Challenges (continued)**

2005 ACEs (SC Priority Order)	Performance Areas*		
	Cost	Schedule	Technology
<b>Consequence Management.</b> Measures to restore essential government services, such as the public health system, and provide emergency relief to governments, businesses, and individuals affected by the consequences of a WMD event.	Lengthy program timelines for detection, identification, and characterization of nontraditional agents (NTAs), development of medical products for NTAs, and development of medical CBRN defense products	Lengthy program timelines for detection, identification, and characterization of nontraditional agents (NTAs), development of medical products for NTAs, and development of medical CBRN defense products	Detection, identification, and characterization (standoff ranges insufficient) Prediction and battle management (insufficient information management "backbone") Size, power, and weight limitations Overarching IT system for C <sup>2</sup> for all levels of government

\*Could be impacted by a cost, schedule, or technology shortfall.

From the standpoint of *cost* or *schedule*, several issues are problematic. Vaccines against biological warfare (BW) agents have been available only in limited amounts and against a limited subset of validated BW agents. The problem is being addressed, in part through the Department of Health and Human Services' (DHHS) work in vaccines (e.g., the BioShield Program), but U.S. Food and Drug Administration (FDA) licensing requirements could lead to scheduling delays. Another significant challenge is to bring under control and to protect from theft or smuggling CBRN materials by proliferant states or nonstate actors. Finding cost-effective methods of controlling and securing them from further distribution or use is equally challenging.

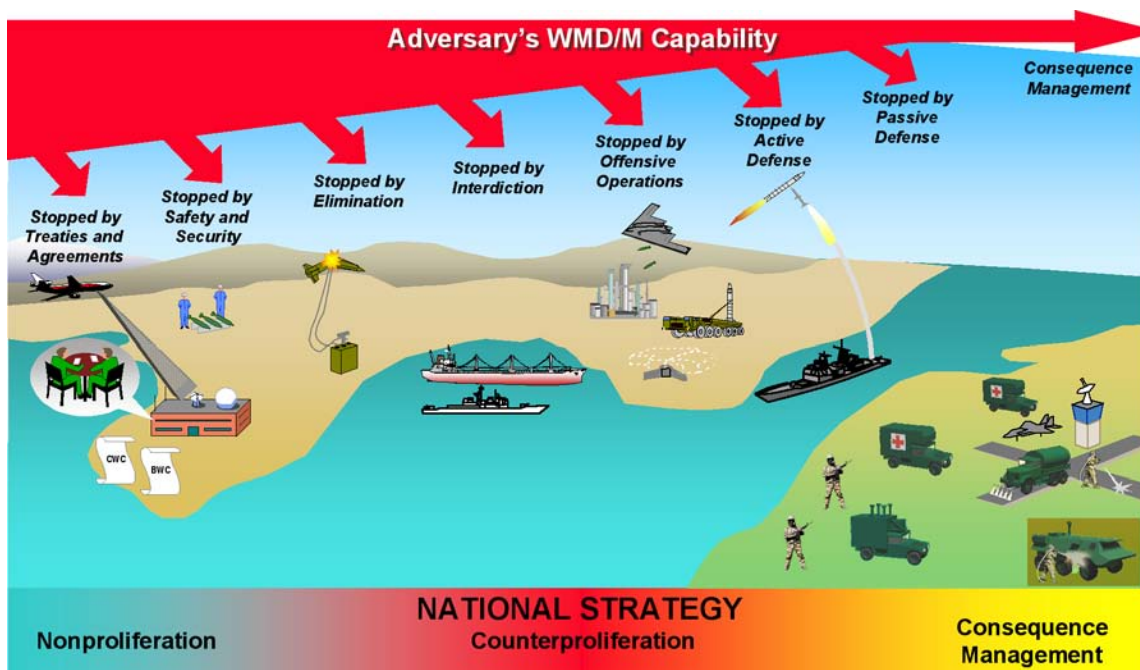
***DoD Biological Weapon Counterproliferation Impediments.*** The National Defense Authorization Act for FY03 provided that the CPRC report include a discussion of the limitations and impediments to the BW CP efforts of DoD and recommendations to mitigate the impediments. Although U.S. Government organizations continue to make progress in addressing counter-BW capabilities, technical challenges remain in the areas of biological agent detection, collection, and identification; quantification; sample processing; interferents (i.e., false positive and negative alarms); ambient biological background rejection; and genetic probe development. Other remaining challenges are size, weight, and power reduction of detectors; power generation and consumption; development of integrated biological and chemical detection systems; and fusion of sensor data with mapping, imagery, and other data for near-real-time display of events. Volume II of this report presents detailed discussions that focus on the technical constraints that limit DoD's efforts.

One of the critical factors affecting continued progress toward meeting technical challenges is consistent and robust funding for the biological defense research efforts in all technological areas. There is no single countermeasure to the biological threat. Rather, an integrated approach is needed that incorporates detection technologies, medical countermeasures, and other technological approaches integrated with policy and operational responses. To address technological countermeasures, one of the critical needs is a consistent, programmed level of funding provided to DoD research laboratories and research centers to ensure progress toward solving the complex and difficult technical challenges. Program stability ensures a robust technology base that will support continued development.

***CPRC Detailed ACE Assessments.*** Volume II of this report contains more detailed assessments of all ACEs.

## KEY DOD COMBATING WMD ACTIVITIES

Figure 1 depicts the proliferation threat environment and the combating WMD mission areas to prevail against it.



**Figure 1: DoD's Multitiered Approach to Combating WMD**

**DoD Combating WMD Guidance.** The key elements of combating WMD include supporting U.S. diplomacy, arms control, and export controls; maintaining a strong deterrent capability; developing capabilities to identify, characterize, destroy, and interdict the production, transfer, storage, and weaponization of NBC; developing active defenses to interdict delivery means; developing passive defenses to provide detection, medical countermeasures, and individual and collective protection; training and equipping U.S. forces to operate effectively in an NBC-contaminated environment; developing the ability to restore operations and manage the consequences of NBC use; and encouraging U.S. allies and coalition partners to make CP a part of their military planning. The U.S. combating WMD strategy is articulated to COCOMs through the Joint Strategic Planning System and through joint doctrine. Key documents include JP 3-11, *Joint Doctrine for Operations in Nuclear, Biological and Chemical (NBC) Environments*; JP 3-40, *Joint Doctrine for Combating Weapons of Mass Destruction*; and JP 3-41, *Joint Tactics, Techniques, and Procedures for CBRNE Consequence Management* (under development).

The Chairman, Joint Chiefs of Staff promulgated CJCS Instruction 3170.01D, *Joint Capabilities Integration and Development System (JCIDS)*, on March 12, 2004, establishing business processes for joint warfighting capabilities development. The procedures established in JCIDS support the CJCS and the Joint Requirements Oversight Council (JROC) in identifying, assessing, and prioritizing joint military capability needs. JCIDS is a capabilities-based process founded on concepts that will allow joint forces to meet the full range of military challenges in the future. The result of the joint concepts-centric JCIDS analytical process is robust, cross-component analysis of warfighting and required capabilities. The process is designed to

leverage interagency expertise and resources across the U.S. Government and eliminate redundancies within DoD.

The JCIDS analytic process consists of a methodology that defines capability gaps, capability needs, and solution sets within a specified functional area. The analyses are based on national defense policy and are centered on common joint warfighting constructs. The analyses initiate the development of integrated, joint capabilities from a common understanding of joint force operations and doctrine, organization, training, materiel, leadership, personnel, and facilities (DOTMLPF) capabilities and capability gaps. The *Joint Operations Concept* (JOpsC) defines the common understanding for the joint force. A set of Joint Functional Concepts derives specific content from the JOpsC and promotes common attributes in sufficient detail to conduct experimentation and measure effectiveness. The Joint Functional Concepts are Battlespace Awareness, Joint Command and Control, Force Application, Protection, Focused Logistics, Net-Centric Environment, Joint Training, and Force Management.

On January 6, 2005, the Secretary of Defense assigned Commander, U.S. Strategic Command (USSTRATCOM) as the Department's lead COCOM to integrate and synchronize DoD activities in combating WMD. As of the release of this report to Congress, USSTRATCOM is reviewing the assessment of the Interdiction and Elimination Functional Needs Analysis conducted by the Joint Staff J-8 Joint Requirements Office and beginning assessments of the other functional areas with CJCS tasking. USSTRATCOM will:

- Provide military representation, as directed, to U.S. national and international agencies for matters related to treaties and agreements.
- Assess and integrate all DOTMLPF requirements and activities and synchronize all deliberate plans to deter, dissuade, prevent transfer, or use of WMD, delivery systems, technologies, and materials.
- Recommend organizational structures for elimination and interdiction.
- Advocate desired combating WMD capabilities and priorities through the DoD requirements, planning, budgeting, and execution processes.
- Work with U.S. Joint Forces Command to develop necessary combating WMD concepts, doctrine, training, and exercise capabilities with initial focus on WMD interdiction.
- Synchronize DoD operations for combating WMD with the IC.
- Support the combatant commanders for the execution of combating WMD operations by ensuring its global intelligence, surveillance, and reconnaissance (ISR), strike, missile defense, and information operations planning and integration efforts supporting the combating WMD mission.

***Joint Combating WMD Doctrine.*** JP 3-11, *Joint Doctrine for Operations in Nuclear, Biological, and Chemical (NBC) Environments*, provides COCOMs, subunified commanders, joint task force commanders, and components of these commands with strategic and operational-level concepts and guidelines for how to plan and execute joint and multinational NBC military operations effectively throughout the entire battlespace. It provides joint operational doctrinal concepts to better integrate the effective use of passive defense capabilities, including medical



capabilities, to enable U.S. military forces to survive, fight, and win in an NBC-contaminated environment. This operational doctrine is centered on the principles of avoidance, protection, and restoration of combat operations. JP 3-11 also provides the same strategic and operational-level guidance for peacetime, crisis, conflict, post-conflict, and military operations other than war.

Joint Publication 3-40, *Joint Doctrine for Combating Weapons of Mass Destruction*, established the conceptual linkages necessary to support COCOMs' planning and execution of combating WMD tasks and missions. JP 3-40 is a complement to JP 3-11 and addresses joint military actions to eliminate the threat of WMD/M against the United States, its forces, and its allies. This operational doctrine responds to each of the three combating WMD National Strategy pillars—nonproliferation, counterproliferation, and consequence management.

**Ongoing ACTDs.** Several noteworthy Advanced Concept Technology Demonstrations (ACTDs) (see Volume III, Appendix F) are underway to accelerate the fielding of advanced technologies and capabilities to counter WMD/M threats: the Agent Defeat Warhead ACTD, which will demonstrate new capabilities to destroy chemical and biological agents at high rates while minimizing collateral damage through unique low-pressure dispersal characteristics; the Tunnel Target Defeat ACTD, which will provide interoperable characterization, planning, and weaponizing tools to defeat strategic hard and deeply buried targets; the Counter Bomb/Counter Bomber ACTD, which will evaluate standoff and portal explosive detection technologies to protect U.S. forces from the evolving threat from terrorist improvised explosive devices; the Thermobaric Weapons ACTD; the CBRN Unmanned Ground Reconnaissance ACTD, which will demonstrate contamination detection capability; and the Epidemic Outbreak Surveillance ACTD, which will establish an operational prototype medical surveillance and diagnostic system.

**DoD Programs.** Well over 150 DoD programs (see Volume III, Appendix G) are strongly supporting national efforts to combat WMD/M and NBC terrorist threats and provide support to the warfighting COCOMs. Over the past several years, substantial progress has been made in these programs and other activities to (1) improve fielded counterproliferation, nonproliferation, and NBC counterterrorism capabilities to respond to newly identified shortfalls; and (2) establish the necessary groundwork for continued advances. Selected accomplishments of these activities and programs are highlighted in Table 4.

**CJCS Guidance and Contingency Plan (CONPLAN) 0500.** CJCSI 3125.01, *Military Assistance to Domestic Consequence Management Operations in Response to a Chemical, Biological, Radiological, Nuclear, or High-Yield Explosive Situation*, provides operational and policy guidance and instructions for U.S. military forces supporting a coordinating agency's domestic consequence management (CM) operations. Developed from this instruction, CJCS CONPLAN 0500-98, *Military Assistance to Domestic Consequence Management Operations in Response to a Chemical, Biological, Radiological, Nuclear, or High-Yield Explosive Situation* (currently being updated by the U.S. Northern Command), provides guidance and tasks for domestic CM operations.

**DoD Medical NBC Training and R&D Programs.** Advanced clinical medical NBC training programs are provided by the U.S. Army Medical Department Center and School, U.S. Army Medical Research Institute of Chemical Defense, U.S. Army Medical Research Institute of Infectious Diseases, U.S. Army Center for Health Promotion and Preventive Medicine, and Armed Forces Radiobiology Research Institute. Courses are offered at these facilities, at the

requesting unit's site, via distance education courses, or through the training method selected by the unit to best meet its requirements.

***U.S. Army Forces Command (FORSCOM) 20<sup>th</sup> Support Command (CBRNE).*** This unit, activated October 2004, is a DoD-unique, dedicated Army operational headquarters, led by a general officer that manages and conducts full-spectrum chemical, biological, radiological, nuclear, and high-yield explosive (CBRNE) operations, especially related to unique aspects of WMD nonproliferation and counterproliferation activities. This unit will be the primary Army force provider of tailored CBRNE forces in support of combatant and joint force commanders, and other federal and state agencies.

**Table 4: Highlights of DoD's Response to Combating WMD ACEs**

DoD ACE Priority	Selected Accomplishments in DoD Combating WMD Programs
<p><b>1. Interdiction.</b> Conduct operations to track, intercept, search, divert, seize, or stop trafficking of WMD, delivery systems, related material, technologies, and expertise to/from state and/or nonstate actors of proliferation concern.</p>	<p>Led U.S. efforts in the PSI Operational Experts Group and hosted multinational PSI wargames to explore authorities, operational capability, and interoperability issues.</p> <p>Enhanced maritime and border forces/capabilities in Ukraine, Azerbaijan, and Uzbekistan. DoD International Counterproliferation Program will deliver 48 courses with the Federal Bureau of Investigation (FBI) and Department of Homeland Security's (DHS) Customs and Border Protection (CBP) in FY05.</p> <p>USJFCOM coordinated resource requirements and capabilities and recommended DOTMLPF capabilities with priority of effort on WMD interdiction (maritime followed by land and air).</p>
<p><b>2. Elimination.</b> Conduct operations to support the systematic seizure, security, removal, disablement, or destruction of a state or nonstate actor's capability to research, develop, test, produce, store, deploy, or employ WMD, delivery systems, related technologies, infrastructure, and/or technical expertise.</p>	<p>Stood up U.S. Army Forces Command (FORSCOM) 20<sup>th</sup> Support Command (CBRNE), the mission of which is to support all aspects of regional/functional COCOM support regarding crisis and consequence management as well as CBRNE elimination.</p> <p>USSTRATCOM Army component led interservice efforts in coordinating development of WMD elimination.</p> <p>Cooperative Threat Reduction (CTR) Biological Weapons Proliferation Prevention Program is destroying the BW production capability at Stepnogorsk, Kazakhstan and Tabaxmela, Georgia.</p> <p>Initiated a project to eliminate chemical weapons in Albania.</p>
<p><b>3. Passive Defense.</b> Measures, including medical, taken by key host nation (HN) installations, any U.S. installation and facility, and ports of embarkation and debarkation to reduce the vulnerability and minimize the effects of WMD.</p>	<p>Continued R&amp;D into conventional and unconventional medical products and treatments to protect service personnel against biological and chemical agents.</p> <p>Transitioned plasma-derived human butyrylcholinesterase nerve agent bioscavenger to DHHS for advanced development (Milestone A approval) under BioShield program.</p> <p>Transitioned Improved Nerve Agent Treatment System (INATS) to advanced development (Milestone A approval). INATS will use existing delivery system and will include a more effective oxime replacement for 2-PAM and expanded indications for soman nerve agent pretreatment pyridostigmine (SNAPP).</p> <p>Continued to develop and produce advanced decontamination systems, protective materials, chemical and biological detection, and modeling and simulation systems.</p> <p>Fielded 6 National Guard Full-Spectrum Integrated Vulnerability Assessment (FSIVA) Teams.</p> <p>Delivered 14 shipments of improvised defeat equipment to explosive ordnance disposal (EOD) forces in support of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) (14 technologies and over 2,000 items).</p> <p>Continued deployment of critical NBC detection and warning, individual and collective protection, and decontamination systems for use throughout battlespace.</p> <p>Conducted final demonstration of Contamination Avoidance of Seaports of Debarkation (CASPOD) ACTD, which demonstrated CW/BW defense procedures to restore fixed-site operations at seaports of debarkation.</p> <p>Produced 2.9 million doses of Anthrax Vaccine Adsorbed.</p> <p>Defense Advanced Research Projects Agency (DARPA) developed new class of antibiotics (DNS monethylation) that kills broad spectrum of bacteria.</p>



**Table 4: Highlights of DoD's Response to Combating WMD ACEs (continued)**

DoD ACE Priority	Selected Accomplishments in DoD Combating WMD Programs
<p><b>3. Passive Defense.</b> Measures, including medical, taken by key host nation (HN) installations, any U.S. installation and facility, and ports of embarkation and debarkation to reduce the vulnerability and minimize the effects of WMD. (continued)</p>	<p>Published Large-Frame Aircraft Decontamination Demonstration final report to detail procedures for effective decontamination.</p> <p>Fielded CB detection, emergency response, and consequence management capabilities at nine DoD installations as part of Joint Service Installation Pilot Project.</p> <p>Deployed 237 Joint Portal Shield Systems to 22 overseas sites (part of restoration of operations (RestOps) Advanced Concept Technology Demonstration (ACTD)).</p> <p>DARPA continued development of a BW agent sensor system (Triangulation Identification for Genetic Evaluation of Risks (TIGER)) capable of significant bacterial discrimination.</p> <p>DTRA continued development of BW agent detection and response network for standup in Uzbekistan, Kazakhstan, and Georgia to provide for syndromic disease surveillance.</p> <p>DTRA continued to execute cooperative biological research projects in Russia, Georgia, Kazakhstan, and Uzbekistan to support enhancement of medical countermeasures and knowledge of diseases.</p>
<p><b>4. Offensive Operations.</b> Conduct operations to eliminate WMD threat, deter the use, and when necessary, respond to the use of WMD, while being prepared to defend against the use and effects of WMD.</p>	<p>Developed U.S. Pacific Command (USPACOM) WMD Combat Assessment Concept of Operations (CONOPS).</p> <p>Continued development and testing of systems and technologies to find, characterize, and strike underground and hardened targets.</p> <p>Stood up Weapons of Mass Effects (WME) Battle Laboratory.</p> <p>Expanded ongoing efforts within the Agent Defeat, Deny, Disrupt program, including improving the CrashPAD system and examining weapon payloads.</p> <p>Expanded ongoing efforts within Agent Defeat, Deny, Disrupt (AD<sup>3</sup>) Program, tested penetrating versions of Agent Defeat Warhead being developed by U.S. Air Force (Shredder), and continued R&amp;D of improved agent defeat weapon payloads to effectively deactivate active biological agent in target weapon or facility.</p> <p>Continued feasibility studies of USAF nuclear deterrence capabilities.</p> <p>Released beta versions of USAF Simulated Environment and Response Program Execution Nesting Tool (SERPENT) and Empirical Lethality Model (ELM) planning tools for counterforce operations. Alpha version of tools used extensively to support analysis prior to and during OIF.</p> <p>Continued Agent Defeat Initiative (ADI) efforts, including development of ADI roadmap.</p>
<p><b>5. Safety and Security.</b> Monitor and assess to ensure that WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment possessed by allies, cooperating nations, or other entities are safe and secure from theft, sabotage, or accidental or unintentional discharge.</p>	<p>Continued ongoing security efforts in Russia under the BW Proliferation Prevention Program.</p> <p>Continued security enhancements at nine Russian nuclear weapon storage sites and three rail transfer points. Continued working with Ministry of Defense (MOD) to identify next set of sites to receive upgrades.</p> <p>CTR Biological Weapons Proliferation Prevention Program is consolidating, securing, and monitoring dangerous pathogens in Georgia, Uzbekistan, and Kazakhstan.</p>
<p><b>6. Active Defense.</b> Employ actions to prevent the conventional and unconventional delivery of WMD. Measures include: detect, divert, and destroy adversary WMD and delivery means while en route to their targets.</p>	<p>Continued development and construction of the Sea-Based X-Band Radar (SBX).</p> <p>Continued upgrade of Early Warning radar (EWR) sites at Beale AFB, CA, and at Fylingdales, UK.</p> <p>Emplaced Ground-Based Interceptors (GBIs) at Ft. Greely, AK and Vandenberg AFB, CA.</p> <p>Successfully tested improvements to SM-3.</p> <p>Successfully tested Arrow Weapons System at U.S. test facility.</p> <p>Commenced coproduction of Arrow missile.</p> <p>Established interoperability between Israeli Arrow weapon system and U.S. BMDS.</p> <p>Fielded Aegis BMD Long-Range Surveillance and Track capability as part of Ballistic Missile Defense System (BMDS).</p> <p>Continued with limited defensive operations and test bed for BMDS.</p> <p>Combined Patriot Missile Advanced Capability (PAC-3) and Medium Extended Air Defense System (MEADS) into single Combined Aggregate Program (CAP). PAC-3 production/fielding is on schedule and within budget.</p> <p>Airborne Laser (ABL) completed laser integration and successful "first light" lasing on ground. ABL aircraft returned to flight testing with beam control system onboard.</p> <p>Progressing toward long-duration, full-power lasing on ground and performance demonstration of beam control system in actual flight environment.</p> <p>Restructured Kinetic Energy Interceptor (KEI) Land Program (FY05-07) with emphasis on risk reduction testing, and scaled back planning for sea-basing and international efforts.</p>

**Table 4: Highlights of DoD's Response to Combating WMD ACEs (continued)**

DoD ACE Priority	Selected Accomplishments in DoD Combating WMD Programs
<p><b>6. Active Defense.</b> Employ actions to prevent the conventional and unconventional delivery of WMD. Measures include: detect, divert, and destroy adversary WMD and delivery means while en route to their targets (continued)</p>	<p>Continued progress in Command and Control, Battle Management, and Communications (C<sup>2</sup>BMC) by developing system interfaces and communications links among BMDS components.</p> <p>Delivered first Terminal High-Altitude Area Defense (THAAD) launcher and radar to White Sands Missile Range for testing.</p> <p>Continued development of Forward-Based X-Band Radar—Transportable (FBX-T).</p> <p>U.S. Northern Command participated in DHS-led Interagency Security Program (ISP) to enhance deterrence during election high-threat period.</p> <p>Launched DSP-22 and continued development of Space Based Infrared System.</p>
<p><b>7. Treaties and Agreements.</b> Support the employment of the full range of diplomatic, economic, informational, and military instruments of national power to establish global norms against the proliferation of WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment.</p>	<p>DTRA continued development of BW agent detection and response network for standup in Uzbekistan, Kazakhstan, and Georgia to provide for syndromic disease surveillance.</p> <p>Continued development of technologies with Russian Federation (R.F.) under CTR's Nuclear Warhead Safety and Security, and Biological Weapons Proliferation Prevention programs.</p> <p>Continued development of technologies with R.F. in addition to Georgia, Kazakhstan, and Uzbekistan under warhead safety and security exchange agreement.</p> <p>Secured nerve agents at two R.F. storage sites.</p> <p>Processed Chemical Weapons Convention (CWC) inspection teams and provided national escorts for inspections of DoD-declared facilities.</p> <p>Provided support to Bilateral Implementation Commission of the Moscow Treaty.</p> <p>Began Phase I and II monitoring implementation of Mayak Transparency Protocol.</p> <p>Led U.S. efforts in Proliferation Security Initiative (PSI) Operational Experts Group to develop plans and procedures to interdict WMD, related materials, and their means of delivery.</p> <p>Cooperative Threat Reduction (CTR) treaty activities in Russia and the former Soviet Union (FSU) as of October 27, 2004: deactivated 3,172 warheads; destroyed 444 intercontinental ballistic missiles (ICBMs); eliminated 127 ICBM silos; destroyed 14 ICBM mobile launchers; eliminated 541 submarine-launched ballistic missiles (SLBMs); eliminated 408 SLBM launchers; destroyed 27 nuclear ballistic missile submarines; eliminated 44 bombers.</p> <p>Continued construction at Shuchuch'ye chemical weapons destruction facility.</p>
<p><b>8. Consequence Management.</b> Measures to restore essential government services, such as the public health system, and provide emergency relief to governments, businesses, and individuals affected by the consequences of a WMD event.</p>	<p>Fielded 12 National Guard CBRNE Enhanced Response Force Packages (CERFPs) as proof of concept.</p> <p>Drafted initial National Nuclear/Radiological Attribution Program Plan.</p> <p>Conducted Kunsan Focused Effort exercises.</p> <p>Established standalone Foreign Consequence Management (FCM) CBRNE training and exercises for U.S. European, Central, and Pacific Commands.</p> <p>Contributed to drafting of National Response Plan (NRP).</p> <p>Fielded 32 certified WMD Civil Support Teams (CSTs).</p> <p>Fielded Domestic Response Reconnaissance Equipment Sets and trained 12 U.S. Army Reserve (USAR) Chemical Platoons.</p> <p>Fielded Domestic Response Casualty Decontamination Systems and trained 75 USAR Chemical Platoons.</p> <p>DTRA established 24/7 WMD technical reachback capability to provide analytical modeling support to COCOMs, WMD Civil Support Teams, and other governmental entities, including first responders.</p> <p>Fielded CB detection, emergency response, and consequence management capabilities at nine DoD installations as part of Joint Service Installation Pilot Project.</p>

## KEY DOE COMBATING WMD ACTIVITIES

Based on its highly specialized scientific, technical, analytical, and operational capabilities, DOE's National Nuclear Security Administration (NNSA) and its national laboratories are uniquely qualified to provide leadership in national and international efforts to reduce the danger

to U.S. national security posed by the proliferation of WMD. NNSA's Office of Defense Nuclear Nonproliferation plays the key role to accomplish this mission by (1) *preventing* the spread of WMD materials, technology, and expertise; (2) *detecting* the proliferation of WMD worldwide; (3) *reversing* the proliferation of nuclear weapon capabilities; (4) *eliminating, securing, or storing* surplus fissile materials in a safe manner pending disposition; and (5) *disposing* of surplus materials in accordance with terms set forth in agreements between the U.S. and Russia.

Activities that address DOE's nonproliferation mission include:

- Applying unique policy and technical expertise to promote WMD dismantlement, transparency, and effective verification; deny terrorist acquisition of WMD through export controls and countering illicit technology trade; strengthen treaties and other proliferation barriers, including international institutions; and promote cooperation in regions of concern.
- Developing technologies and systems to detect the proliferation of WMD and to monitor and verify existing treaties.
- Providing unique and in-depth policy and technical expertise as part of the U.S. Government's integrated efforts to monitor for nuclear explosions.
- Facilitating the shutdown of the remaining plutonium production reactors in the Russian Federation (R.F.).
- Developing and implementing transparency measures to verify the downblending of surplus highly enriched uranium (HEU) for peaceful use as commercial reactor fuel.
- Preventing adverse migration of WMD expertise by engaging weapon experts in commercially oriented, nonmilitary efforts and by helping to downsize the nuclear weapons infrastructure.
- Working in Russia and other regions of concern to secure and eliminate vulnerable nuclear weapons and weapon-usable material, and install detection equipment at border crossings and megaports to prevent and detect the illicit transfer of nuclear material.
- Supporting U.S. Government efforts to eliminate surplus Russian plutonium and surplus U.S. plutonium and HEU.
- Identifying, securing, removing, or facilitating the disposition of high-risk, vulnerable nuclear and radiological materials.

DOE strongly supports the combating WMD missions of DoD and the IC primarily through its nuclear proliferation prevention and counterterrorism activities. DOE plays a critical role, through its core nuclear work, in addressing ACE priorities supporting inspection and monitoring activities of arms control agreements and regimes; protection of WMD/M and WMD/M-related materials and components; detection and tracking of these materials and components; and export control activities. DOE is working closely with DoD and the IC to detect, characterize, and defeat WMD/M facilities.

Selected accomplishments of DOE combating WMD programs are shown in Table 5.

**Table 5: Highlights of DOE's Response to Combating WMD ACEs**

DOE ACE Priority*	Selected Accomplishments in DOE Programs
<p><b>1. Safety and Security.</b> Monitor and assess to ensure that WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment possessed by allies, cooperating nations, or other entities are safe and secure from theft, sabotage, or accidental or unintentional discharge.</p>	<p>Tested advanced radiation and remote sensing technologies against simulated, real-world proliferation targets. Airborne hyperspectral imaging system demonstrated real-time capability for detection and identification of gas plumes; ultraviolet lidar detector testing at Dugway Proving Ground; and radiation detection, synthetic aperture radar, and persistent wide-area search technologies evaluated against key proliferation signatures.</p> <p>Signed contracts for all remaining material protection, control, and accounting (MPC&amp;A) upgrades to Russian Navy warhead sites. Completed MPC&amp;A upgrades to first two Russian Strategic Rocket Forces (SRF) sites, and signed rapid MPC&amp;A upgrades contracts for all remaining approved sites. Signed comprehensive MPC&amp;A upgrade contracts for five Russian SRF sites.</p> <p>Completed MPC&amp;A upgrades at first two RosAtom Weapons Complex sites. Commissioned second large RosAtom Civilian fuel site. Completed installations at 20 additional sites in Russia and 4 sites in Greece.</p> <p>Began negotiations with Kazakhstan, Ukraine, Turkey, and Slovenia regarding implementation of Second Line of Defense (SLD) program. Completed installation of radiation detection at first two Megaports; began installation in one additional port and initiated discussions with over 20 additional countries.</p> <p>Worked with Russia to develop a licensing approach for Russian mixed oxide (MOX) facility, and began site characterization work.</p> <p>Accelerated work to develop higher density low enriched uranium (LEU) fuels in order to enable conversion of remaining targeted research reactors. Completed feasibility study for conversion of reactors in Libya, Vietnam, and U.S. (at Texas A&amp;M).</p> <p>Completed shipments of 17 kilograms of fresh HEU fuel from Bulgaria and about 17 kilograms of fresh HEU from Libya and 3 kilograms of fresh HEU from Uzbekistan to Russian Federation.</p> <p>Signed U.S./Russian Federation Government-to-Government Agreement concerning cooperation for return of Soviet- or Russian-origin research reactor fuel to Russia. Signed U.S./Romania implementation agreement for spent fuel return. Repatriated to U.S. 307 fuel assemblies from Japan, 293 fuel assemblies from Indonesia, and 126 fuel assemblies from Germany.</p> <p>Recovered over 10,000 orphan sources since 1997. Disposed of 38 civilian radioisotope thermoelectric generators. Security upgrades currently in progress at 149 facilities. Completed security enhancements at 69 facilities.</p>
<p><b>2. Treaties and Agreements.</b> Support the employment of the full range of diplomatic, economic, informational, and military instruments of national power to establish global norms against the proliferation of WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment.</p>	<p>Delivered first unit of next-generation nuclear detonation sensor package addressing revalidated and more-demanding national security requirements to monitor entire Earth from space with greater sensitivity. Support provided for launch and initial checkout of three previously delivered operational nuclear detonation sensor packages, including one that contained demonstration/validation experiment for next-generation optical sensor. Delivered regional seismic monitoring station calibration data sets and improved analysis tools for operational users to address emerging proliferation threats.</p> <p>Monitored conversion of 30 metric tons of HEU at four Russian uranium processing facilities. Completed exchange on portable nondestructive assay equipment for improved monitoring. Installed Blend-Down Monitoring System (BDMS) equipment at Siberian Chemical Enterprise. Retrieved BDMS data from two Russian uranium processing sites.</p>

**Table 5: Highlights of DOE's Response to Combating WMD ACEs (continued)**

DOE ACE Priority*	Selected Accomplishments in DOE Programs
<p><b>2. Treaties and Agreements.</b> Support the employment of the full range of diplomatic, economic, informational, and military instruments of national power to establish global norms against the proliferation of WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment. (continued)</p>	<p>Established Cooperative Monitoring Center in Amman, Jordan, to apply technical measures to regional security and nonproliferation challenges. Initiated 15 joint technology development projects with Russia in areas of counter nuclear terrorism and nuclear warhead safety, security, and transparency.</p> <p>Engaged 8,200 FSU weapon scientists, engineers, and technicians. Commercialized 36 technologies and created or expanded businesses. Obtained \$24 million of non-U.S. funding contributions. Held trade show to showcase work of world-class scientists and engineers from Russia, Ukraine, and Kazakhstan.</p>
<p><b>3. Interdiction.</b> Conduct operations to track, intercept, search, divert, seize, or stop trafficking of WMD, delivery systems, related material, technologies and expertise to/from state and/or nonstate actors of proliferation concern.</p>	<p>Reviewed approximately 6,000 export licenses for proliferation concerns. Led U.S. efforts within Nuclear Suppliers Group to develop and implement presidential initiatives to strengthen nuclear export controls, and expanded its international assistance program to improve export control systems in emerging supplier and high-traffic transit states.</p>
<p><b>4. Elimination.</b> Conduct operations to support the systematic seizure, security, removal, disablement, or destruction of a state or nonstate actor's capability to research, develop, test, produce, store, deploy, or employ WMD, delivery systems, related technologies, infrastructure, and/or technical expertise.</p>	<p>Removed highly sensitive centrifuge enrichment components and other nuclear-related equipment from Libya and participated in cooperative dismantling of Libyan nuclear program. Helped coordinate removal of 1.77 metric tons of LEU from Iraq. Conducted physical protection assistance in five countries and at six facilities.</p>
<p><b>5. Consequence Management.</b> Measures to restore essential government services, such as the public health system, and provide emergency relief to governments, businesses, and individuals affected by the consequences of a WMD event.</p>	

\*DOE did not rate Passive Defense, Offensive Operations, or Active Defense ACEs because they are not relevant to its mission.

## KEY IC COMBATING WMD ACTIVITIES

Selected accomplishments of IC combating WMD programs are highlighted in Table 6.

**Table 6: Highlights of IC's Response to Combating WMD ACEs**

IC ACE Priority	Selected Accomplishments in IC Programs
<p><b>1. Elimination.</b> Conduct operations to support the systematic seizure, security, removal, disablement, or destruction of a state or nonstate actor's capability to research, develop, test, produce, store, deploy, or employ WMD, delivery systems, related technologies, infrastructure, and/or technical expertise.</p>	<p>Identified and characterized WMD and missile facilities.</p> <p>Supported Iraq Survey Group efforts to determine status of Iraq's WMD programs.</p> <p>Assisted Department of State in providing actionable information to international inspections.</p>
<p><b>2. Interdiction.</b> Conduct operations to track, intercept, search, divert, seize, or stop trafficking of WMD, delivery systems, related material, technologies; and expertise to/from state and/or nonstate actors of proliferation concern.</p>	<p>Identified and tracked WMD-related shipments (National Geospatial-Intelligence Agency and others also helped).</p> <p>Supported various PSI initiatives.</p> <p>Produced wide range of estimates and analytical projects.</p> <p>Continued work on databases to track and to link WMD proliferation.</p>

**Table 6: Highlights of IC's Response to Combating WMD ACEs (continued)**

IC ACE Priority	Selected Accomplishments in IC Programs
<b>3. Treaties and Agreements.</b> Support the employment of the full range of diplomatic, economic, informational, and military instruments of national power to establish global norms against the proliferation of WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment.	Coordinated IC input to diplomatic and other nonproliferation efforts (through WINPAC).
<b>4. Offensive Operations.</b> Conduct operations to eliminate WMD threat, deter the use, and when necessary, respond to the use of WMD, while being prepared to defend against the use and effects of WMD.	Produced wide range of estimates and analytical products to include terrorists' potential CBRN capabilities.
<b>5. Safety and Security.</b> Monitor and assess to ensure that WMD precursors, weapons, their means of delivery, and weapon manufacturing equipment possessed by allies, cooperating nations, or other entities are safe and secure from theft, sabotage, or accidental or unintentional discharge.	Provided support in assessing safety and security of WMD and delivery systems.
<b>6. Active Defense.</b> Employ actions to prevent the conventional and unconventional delivery of WMD. Measures include: detect, divert, and destroy adversary WMD and delivery means while en route to their targets.	Provided early warning of imminent missile tests. Produced estimates and technical analysis of various missile systems.
<b>7. Passive Defense.</b> Measures, including medical, taken by key host nation (HN) installations, any U.S. installation and facility, and ports of embarkation and debarkation to reduce the vulnerability and minimize the effects of WMD.	Characterized traditional and nontraditional CW and BW agents.
<b>8. Consequence Management.</b> Measures to restore essential government services, such as the public health system, and provide emergency relief to governments, businesses, and individuals affected by the consequences of a WMD event.	Characterized traditional and nontraditional CW and BW agents.

## FUNDING OF CPRC-MONITORED PROGRAMS

Combating WMD efforts build on the substantial investments made in the military forces and defense infrastructure necessary for the security of the U.S. The combined DoD-DOE investment in CP programs for FY06 is over \$14.6 billion compared with over \$15.2 billion in FY05. The drop in funding from last year is due to a decrease in missile defense funding. All FY06 budget figures in this report are from the President's Budget.

DoD's investment for FY06 is \$12.9 billion. DoD budgets the bulk of its combating WMD investment in the areas of missile defense; detecting, identifying, characterizing, locating, predicting, and warning of traditional and nontraditional CW and BW agents; and supporting the inspection, monitoring, and verification of arms control agreements. Dollars are addressed in more detail in Volume II, Chapter 4.

DOE continues its heavy investment in nonproliferation activities with \$1.74 billion requested for FY06 compared with the FY04 level of \$1.43 billion. As part of its core national

nonproliferation program, DOE focuses on protection, tracking, and control of nuclear-weapon-related materials and components and export control activities; and supporting the inspection and monitoring of arms control agreements and other nonproliferation initiatives.

## CPRC FINDINGS AND RECOMMENDATIONS

*Combating WMD* remains an established and institutionalized priority within each of the CPRC-represented organizations. These efforts reflect the President's firm commitment to stem WMD/M proliferation and negate terrorist WMD threats. Moreover, as decisionmakers, policymakers, and warfighters continue to reprioritize their nonproliferation, counterproliferation, consequence management, and WMD counterterrorism policy and strategy objectives, the CPRC will continue to review related DoD, DOE, and IC activities and interagency programs to ensure that they meet evolving needs and requirements.

The CPRC's recommendations for 2005 are summarized below:

- Support the President's FY06 budget for CPRC organizations.
- Continue to refine CPRC processes in order to better influence the development of budget planning that will address CPRC-reported priorities and gaps.
- Have DoD work with the DoD JCIDS processes, and share with DOE and IC, to achieve optimal implementation of CPRC recommendations.
- Continue to expand dialog and information sharing between CPRC organizations and other U.S. Government agencies and international entities.

The FY06 President's Budget addresses priority activities and programs for combating WMD/M proliferation and WMD terrorism. Therefore, *the CPRC recommends that the FY06 President's Budget for each of the CPRC-represented organizations be authorized and appropriated by the Congress*, and that the needs and requirements for combating WMD continue to receive high-priority status in the annual budget development process, with emphasis on countering the WMD terrorist threat and defending the homeland.

The CPRC will continue to *refine its processes to better influence development of budget planning* that will address CPRC reported priorities and gaps. Approaches to enhance budget planning include the quantitative ACE prioritization methodology conducted by the Standing Committee this year, closer coordination with the Director of Defense Research and Engineering science and technology planners, and shortfall assessments to identify recommended solutions to key unfunded shortfalls.

The JCIDS analytical process is designed to leverage interagency expertise and resources across the U.S. Government. The OATSD(NCB) will utilize this DoD process to ensure the most effective implementation of recommendations from the CPRC.

One of the CPRC's additional responsibilities is *to expand dialog and information sharing between CPRC organizations and other governmental agencies such as the FBI, DHS, U.S. Department of Agriculture (USDA), and international agencies*. During the annual CPRC Program Review of DoD, DOE, and the IC combating WMD programs, nontraditional CPRC

organizations attended and benefited from the review. This expanded dialog includes DoD, DHS, and the IC on medical countermeasures for WMD to ensure a plan that includes development of an FDA-approved countermeasure for each threat agent. The CPRC can further expand this type of dialog and communication by establishing and promoting mechanisms to leverage combating WMD and counterterrorism RDA.

## **CONCLUSION AND OUTLOOK**

Improving integration and coordination for combating WMD remains an important goal for the U.S. Government and its various agencies and organizations. Leveraging the synergies among CPRC members is crucial to enhancing and improving the diverse portfolio of combating WMD capabilities already possessed by the U.S.

The CPRC member organizations continue to make great strides in further developing and fielding the refined plans and advanced technologies required to counter the threat posed by WMD. Yet challenges remain, and it will take continued vigilance, resolve, and determination on the part of the United States, its friends, and its allies to protect against and respond to a future WMD attack on their troops or their citizens.



## ABBREVIATIONS AND ACRONYMS

ABL	Airborne Laser
ACE	Area for Capability Enhancement
ACTD	Advanced Capability Technology Demonstration
ASD(SO/LIC)	Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict
ATSD(NCB)	Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs
BDMS	Blend-Down Monitoring System
BMDS	Ballistic Missile Defense System
BW	biological warfare
C <sup>2</sup> BMC	Command and Control, Battle Management, and Communications
CAP	Combined Aggregate Program
CASPOD	Contamination Avoidance at Seaports of Debarkation
CB	chemical and biological
CBP	Customs and Border Protection
CBRN	chemical, biological, radiological, and nuclear
CBRNE	chemical, biological, radiological, nuclear, and high-yield explosive
CERFP	CBRNE Enhanced Respose Force Package
CJCS	Chairman of the Joint Chiefs of Staff
CM	consequence management
COCOM	combatant commander
CONOPS	concept of operations
CONPLAN	contingency plan
CP	counterproliferation
CPRC	Counterproliferation Program Review Committee
CST	Civil Support Team
CT	counterterrorism
CTR	Cooperative Threat Reduction (treaty)
CW	chemical warfare
CWC	Chemical Weapons Convention
DARPA	Defense Advanced Research Projects Agency
DCI	Director of Central Intelligence
DHHS	Department of Health and Human Services
DHS	Department of Homeland Security
DoD	Department of Defense
DOE	Department of Energy
DOTMLPF	doctrine, organization, training, materiel, leadership, personnel, and facilities
EOD	explosive ordnance disposal
EPP	Enhanced Planning Process
EWR	Early Warning Radar
FBI	Federal Bureau of Investigation
FBX-T	Forward-Based X-Band Radar—Transportable
FCM	Foreign Consequence Management
FDA	Food and Drug Administration
FORSCOM	U.S. Army Forces Command
FSIVA	Full-Spectrum Integrated Vulnerability Assessment
FSU	former Soviet Union

FY	fiscal year
GBI	ground-based interceptor
HDBT	hard and deeply buried target
HEU	highly enriched uranium
HN	host nation
IAEA	International Atomic Energy Agency
IC	intelligence community
ICBM	intercontinental ballistic missile
INATS	Improved Nerve Agent Treatment System
ISP	Interagency Security Program
ISR	intelligence, surveillance, and reconnaissance
JCIDS	Joint Capabilities Integration and Development System
JCS	Joint Chiefs of Staff
JOpsC	Joint Operations Concept
JP	Joint Publication
JROC	Joint Requirements Oversight Council
KEI	Kinetic Energy Interceptor
LEU	low-enriched uranium
MEADS	Medium Extended Air Defense System
MOD	Ministry of Defense
MOX	mixed oxide
MPC&A	material protection, control, and accounting
MT	metric ton
NBC	nuclear, biological, and chemical
NNSA	National Nuclear Security Administration (DOE)
NRP	National Response Plan
NTA	nontraditional agent
OCONUS	outside the continental United States
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OSD	Office of the Secretary of Defense
PAC-3	Patriot Advanced Capability Level 3
PSI	Proliferation Security Initiative
R&D	research and development
RDA	research, development, and acquisition
SBX	Sea-Based X-Band Radar
SC	Standing Committee
SLBM	submarine-launched ballistic missile
SLD	Second Line of Defense
SNAPP	soman nerve agent pretreatment pyridostigmine
SRF	Strategic Rocket Forces

THAAD	Terminal High-Altitude Area Defense
TSWG	Technical Support Working Group
UGF	underground facilities
USAR	U.S. Army Reserve
USDA	U.S. Department of Agriculture
USPACOM	U.S. Pacific Command
USSTRATCOM	U.S. Strategic Command
WINPAC	Weapons Intelligence, Nonproliferation, and Arms Control
WMD	weapons of mass destruction
WMD/M	WMD and their means of delivery
WME	weapons of mass effects