

Report on
**Activities and Programs for
Countering Proliferation and
NBC Terrorism**

**Executive
Summary**

Volume I

May 2004



Counterproliferation Program Review Committee

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EXECUTIVE SUMMARY VOLUME I

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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). Together they represent the four organizations that make up the committee.

The CPRC is chartered to make and implement recommendations regarding interdepartmental (specifically, Department of Defense, Department of Energy, Joint Chiefs of Staff, and the intelligence community (IC)) activities and programs to address shortfalls in capabilities to counter the proliferation of weapons of mass destruction (WMD)—nuclear, biological, and chemical—and their means of delivery. The findings and recommendations of the CPRC's annual review for 2004 are presented in this, its eleventh annual report to Congress.

COMPOSITION OF THE CPRC AND STANDING COMMITTEE

The Deputy Secretary of Defense has been designated by the Secretary of Defense to perform the duties of CPRC Chairman. The Assistant to the Secretary of Defense for Nuclear, Chemical, Biological Defense Programs (ATSD(NCB)) has been designated by Congress as CPRC Executive Secretary. The Standing Committee is composed of the ATSD(NCB) (as chair); the Director, Office of Nonproliferation and National Security, DOE (as vice chair); the Special Assistant to the DCI for Weapons Intelligence, Nonproliferation, and Arms Control (WINPAC); the Deputy Director for the War on Terrorism, Joint Chiefs of Staff (J-5); and the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict.

NATIONAL STRATEGY TO COMBAT WEAPONS OF MASS DESTRUCTION

The 2002 *National Strategy To Combat WMD* 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. Serving to integrate the pillars are four cross-cutting enabling functions: 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 terrorists.

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 (including counterforce)
- 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:

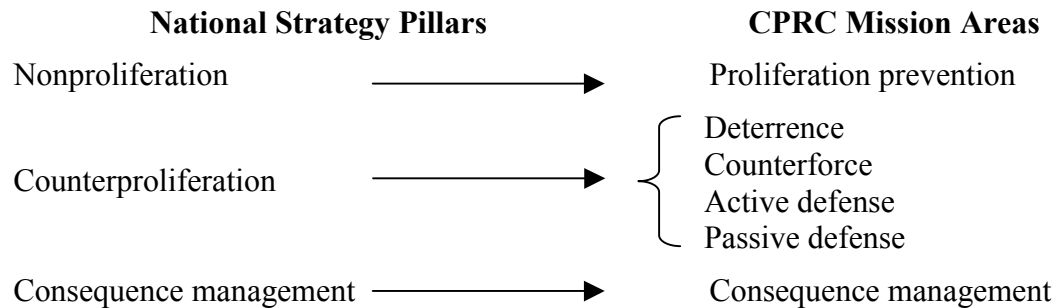
- Minimize the consequences of WMD use against our population
- Respond to effects of WMD use against our forces
- Respond to effects of WMD use against our friends and allies.

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 (RD&A) objectives. Since 1994, the CPRC has ensured that interdepartmental RD&A 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, 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. Commonly, the departments themselves also have their own internal committees to meet their 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 CPRC leverages the investments already made in military forces and defense infrastructure necessary to defend the United States while ensuring that requirements for countering proliferation are also met.

The CPRC mission areas correspond to the three principal pillars of the 2002 National Strategy:



CPRC AREAS FOR CAPABILITY ENHANCEMENT

The CPRC established Areas for Capability Enhancement (ACEs) to describe combating WMD mission area requirements and to characterize areas where progress is needed to enhance warfighting capabilities of the combatant commanders (COCOMs) and the overall ability to satisfy the demands of U.S. combating WMD policy. The ACEs are derived from the COCOM combating WMD (CbtWMD) requirements but are not a one-for-one restatement of them. Instead, they reflect a more general statement of requirements, appropriate for a multidepartmental approach. The ACEs define priority areas where additional capabilities are needed to meet CP requirements. Each CPRC-represented organization individually prioritizes the ACEs in accordance with its own departmental mission needs. The 16 combating WMD ACEs for 2004 are listed in Table 1.

Table 1: 2004 ACEs and ACE Priorities of CPRC-Represented Organizations

ACE Priorities			Areas for Capability Enhancements
DoD	DOE	IC	
1		1	Timely collection, analysis, and dissemination of strategic, operational, and tactical level actionable intelligence to support CP and CT
2		2	Detection, identification, characterization, location, prediction, and warning of traditional and nontraditional CW and BW agents (including medical surveillance)
3		3	Defense against, and detection, characterization and defeat of paramilitary, covert delivery, and terrorist WMD capabilities (including protection of critical CONUS and OCONUS installations)
4	2	5	Detection, location, and tracking of WMD/M and related materials, components, and key personnel
5		7	Support for maritime, air, ground WMD/M interdiction, including special operations
6			Enable sustained operations in a WMD environment through decontamination, and individual and collective protection
7			Medical protection, training, diagnosis, treatment, and countermeasures against NBC agents, to include surge manufacturing capability and stockpile availability of vaccines, pretreatments, therapeutics and other medical products

Table 1: 2004 ACEs and ACE Priorities of CPRC-Represented Organizations (Continued)

ACE Priorities			Areas for Capability Enhancements
DoD	DOE	IC	
8		9	Ballistic and cruise missile active defense
9			Consequence management in response to use of WMD (including civil support in response to domestic WMD contingencies)
10		6	Target planning for WMD/M targets
11	3	4	Detection, location, characterization, defeat, and elimination of WMD/M weapons and related facilities while minimizing collateral effects
12		8	Detection, location, characterization, and defeat of HDBTs while minimizing collateral effects
13		10	Prompt mobile target detection and defeat
14	1		Protection of WMD/M and WMD/M-related materials and components
15	5	11	Support to export control activities of the U.S. Government
16	4	12	Support to inspection and monitoring activities of arms control agreements and regimes and other non-proliferation initiatives

CPRC ASSESSMENT OF PROGRESS IN MEETING COMBATING WMD REQUIREMENTS

Each year the CPRC focuses on identifying key RD&A program accomplishments and milestones; highlighting planned near-, mid-, and long-term capability improvements; assessing where shortfalls exist in CbtWMD 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 RD&A 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 United States, (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 2 highlights selected issues that could constrain the ability to meet requirements in specific performance areas.

As Table 2 indicates, better sensors or detectors are a *technical* challenge in ACEs 2, 4, 11, and 12. Current sensors do not yet meet the needs of current conditions. Generally, technological difficulties also continue to stand in the way of missile defense, ACE 8. In ACE 3, while efforts to anticipate the actions of adversaries are being addressed by the IC through technological and other means, this goal is one of the hardest to address adequately.

Table 2: Assessed Performance Area Challenges

2004 ACEs (in DoD Priority Order)	Performance Areas*		
	Cost	Schedule	Technology
2. Detection, identification, characterization, location, prediction, and warning of traditional and nontraditional CW and BW agents (including medical surveillance)	Program timelines for detection of nontraditional/4 th -generation agents are lengthy	Program timelines for detection of nontraditional/4 th -generation agents are lengthy	Detect, identify, and characterize (standoff ranges insufficient) Prediction and battle management (insufficient information management "backbone")
3. Defense against, and detection, characterization and defeat of paramilitary, covert delivery, and terrorist WMD capabilities			Counterterrorist intelligence (global target set difficult) Force protection (standoff explosive detection)
4. Detection, location, and tracking of WMD/M and related materials, components, and key personnel			Sensors (BW threats difficult to detect—dual use facilities)
6. Enable sustained operations in a WMD environment through decontamination, and individual and collective protection			Size, power, and weight limitations
7. Medical protection, training, diagnosis, treatment, and countermeasures against NBC agents, to include surge manufacturing capability and stockpile availability of vaccines, pretreatments, therapeutics, and other medical products	Medical chemical, biological, and radiological defense	Medical chemical, biological, and radiological defense	
8. Ballistic and cruise missile active defense		Missile defense (critical technological challenges in boost phase)	Missile defense (critical technological challenges in boost phase)
11. Detection, location, characterization, defeat, and elimination of WMD/M weapons and related facilities while minimizing collateral effects		Evolving WMD elimination mission	Sensors (BW threats difficult to detect—dual-use facilities) Agent dispersion complexities difficult to model
12. Detection, location, characterization, and defeat of HDBT while minimizing collateral effects			Sensors (Standoff detection sensor capability) Characterization models (physical layout difficult to characterize)
13. Prompt mobile target detection and defeat			Technology to detect and defeat mobile targets remains challenging

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

From the standpoint of *cost* or *schedule*, several issues are problematic. Vaccines against BW agents have been available only in limited amounts. The problem is being addressed, in part through the Department of Health and Human Service's work in vaccines (e.g., through 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 BW CP Impediments. The National Defense Act for FY03 legislated 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. Appendix M of Volume III of the 2003 CPRC Report to Congress provided the detailed discussion that focused on technological constraints that limit DoD's efforts. The detailed discussion is not repeated in this year's CPRC Report to Congress. However, the constraints identified in last year's report are still applicable to current BW CP efforts within DoD. In summary, the technical challenges remain in the areas of biological collection, detection and identification, quantification, sample processing, interferent (i.e., false positive and negative alarms) and ambient biological background rejection, and genetic probe development. Other challenging areas that still remain today are size, weight, and power reduction of detectors; power generation and consumption; development of integrated biological and chemical detection systems; and the fusion of sensor data with mapping, imagery, and other data for near-real-time display of events.

CPRC DETAILED ACE ASSESSMENTS

Volume II of this report contains more detailed assessments of all ACEs.

DOD COMBATING WMD POLICY AND PLANNING ACTIVITIES

Figure 1 depicts the proliferation threat environment and the CbtWMD mission areas to prevail against it—*proliferation prevention, deterrence, counterforce, active defense, passive defense, restoration of operations, and consequence management.*

DoD Combating WMD Guidance. The key elements of CbtWMD 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, 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. CbtWMD strategy is articulated to COCOMs through the Joint Strategic Planning System and through joint doctrine. Key documents include Joint Publication (JP) 3-11, *Joint Doctrine for Operations in Nuclear, Biological and Chemical (NBC) Environments*; and JP 3-40, *Joint Doctrine for Combating Weapons of Mass Destruction* (Final Coordination Draft, November 2003).



Figure 1: DoD's Multitiered Approach to Combating WMD

Joint Combating WMD Doctrine. JP 3-11, *Joint Doctrine for Operations in Nuclear, Biological, and Chemical (NBC) Environments*, provides combatant commanders, subunified commanders, joint task force commanders, and components of these commands with strategic and operational-level concepts and guidelines for how to effectively plan and execute joint and multinational NBC military operations 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 Counterproliferation Operations (2000)*, established the conceptual linkages necessary to support COCOMs' planning and execution of CP tasks and missions. JP 3-40 is currently under revision to reflect the CbtWMD National Strategy, and is to be titled *Joint Doctrine for Combating Weapons of Mass Destruction*.

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 lead federal 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*, provides guidance and taskings for domestic CM operations.

Combating WMD Support to Combatant Commands. DoD agencies have focused their expertise in chemical and biological defense, nuclear science, information management, intelligence collection, battlefield surveillance, strategic weapons dismantlement, arms control technologies, and numerous other fields, to provide new core capabilities to support the warfighter. Multiple capabilities mentioned in the CPRC report provide support to warfighters before, during, and after the conflict to identify, destroy, and dismantle or otherwise eliminate WMD weapons and associated material in the area of operations.

CPRC Chemical/Biological Defense Focus Group. The CPRC Chemical and Biological Defense (CBD) Research, Development, and Acquisition Focus Group is developing integrated CBD RD&A plans for CBD technology areas; such plans have already been developed for biological point detection technologies. The integration process and roadmap model developed in conjunction with the biological point detection integrated plan is being used as a template to facilitate development of integration plans for other technology areas such as chemical point detection, CB standoff detection, decontamination, and modeling and simulation.

Ongoing ACTDs. Several noteworthy Advanced Concept Technology Demonstrations (ACTDs) 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 Contamination Avoidance at Seaports of Debarkation ACTD; and the Restoration of Operations (RestOps) ACTD (residual support phase).

DoD Programs. Well over 150 DoD programs (see Appendix G, Volume III) are strongly supporting national efforts to combat WMD/M and NBC terrorist threats. 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 3.

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.

Table 3: Highlights of DoD Response to CbtWMD ACEs

DoD ACE Priority	Selected Accomplishments in DoD Combating WMD Programs
1. Timely collection, analysis, and dissemination of strategic, operational, and tactical level actionable intelligence to support CP and CT	Developed standoff ID capability through the use of inherent signatures for Special Operations Forces (SOF) Developed improved remote sensor controller mission life
2. Detection, identification, characterization, location, prediction; and warning of traditional and nontraditional CW and BW agents (including medical surveillance)	Deployed 237 Joint Portal Shield Systems to 22 overseas sites DARPA is developing a BW agent sensor system (TIGER) capable of significant bacterial discrimination
3. Defense against, and detection, characterization and defeat of paramilitary, covert delivery, and terrorist WMD capabilities (including protection of critical CONUS and OCONUS installations)	Conducted over 100 Balanced Survivability Assessments to date. Conducted 595 Joint Staff Integrated Vulnerability Assessments of key government sites Identified, recovered, and exploited 663 ordnance items during Operation Enduring Freedom in 2003
4. Detection, location, and tracking of WMD/M and related materials, components, and key personnel	Conducted radiological detection and response courses with Estonia, Latvia, and Romania
5. Support for maritime, air, ground, WMD/M interdiction, including special operations	Continued development and deployment of specialized technologies and equipment prototypes to assist SOF and explosive ordnance disposal (EOD) teams in countering WMD/M threats Delivered 5 shipments of improvised explosive device defeat equipment to EOD forces in support of Operation Iraqi Freedom (OIF) (14 technologies and over 200 items)
6. Enable sustained operations in a WMD environment through decontamination, and individual and collective protection	Continued deployment of critical NBC detection and warning, individual and collective protection, and decontamination systems for use throughout battlespace Conducted RestOps final demonstration, which demonstrated CW/BW defense procedures to restore fixed-site operations Conducted a Large Frame Aircraft Decontamination Demonstration to determine procedures for effective decontamination Fielded 26,000 pocket radiation detection, indication, and computation devices to active duty forces and WMD Civil Support Teams
7. Medical protection, training, diagnosis, treatment, and countermeasures against NBC agents, to include surge manufacturing capability and stockpile availability of vaccines, pretreatments, therapeutics, and other medical products	Produced 4.2 million doses of Anthrax Vaccine Adsorbed (AVA) Developed new class of antibiotics (DNA methylation) that kills broad spectrum of bacteria (DARPA)
8. Ballistic and cruise missile active defense	Tested Terminal High-Altitude Area Defense (THAAD) components in various field exercises Tested Airborne Laser models and simulations in test facilities Proceeded with development of Forward-based X-Band radar under development OSD approved Army Cruise Missile Defense (CMD) acceleration— will field initial CMD capability by FY10 Achieved great success with PATRIOT in OIF—intercepted 9 of 9 ballistic missiles Commenced joint (OSD-Army) effort to merge PATRIOT and Medium Extended Air Defense System programs into a single, more efficient international effort
9. Consequence management in response to use of WMD (including civil support in response to domestic WMD contingencies)	Continued to leverage improvements and doctrine from DoD to emergency responders Defense Threat Reduction Agency (DTRA) established 24/7 WMD technical reachback capability to provide analytical modeling support to combatant commanders, civil support teams, and other governmental entities including first responders

Table 3: Highlights of DoD Response to CbtWMD ACEs (Continued)

DoD ACE Priority	Selected Accomplishments in DoD Combating WMD Programs
10. Target planning for WMD/M targets	<p>DTRA deployed targeting teams in support of OIF operations and other combatant command exercises and planning activities to provide WMD expertise and consequence of target execution modeling analysis</p> <p>DTRA's 24/7 technical reachback capability conducted targeting analysis and plume modeling in support of the IC and combatant command deliberate and contingency planning</p>
11. Detection, location, characterization, and defeat, and elimination of WMD/M weapons and related facilities while minimizing collateral effects	<p>DTRA/TD operationally demonstrated unmanned aerial vehicle-based standoff CW detection and collection/identification capability in the Chemical Combat Assessment System (CCAS)</p> <p>DTRA/TD developed and delivered quick-reaction BLU-119/B (CrashPAD) weapons in support of OIF</p> <p>DTRA/TD operationally demonstrated the Tactical Tomahawk Penetrator Variant (TTPV) cruise missile</p> <p>DTRA/TD developed and demonstrated prototype architecture for the Integrated Weapons of Mass Destruction Toolset in 1st quarter FY04</p>
12. Detection, location, characterization, and defeat of HDBT while minimizing collateral effects	<p>Operationally demonstrated the TTPV and CCAS against a chemical target</p> <p>Completed CCAS operational demonstration</p>
13. Prompt mobile target detection and defeat	<p>Demonstrated operational utility of command, control, communications, computers, and intelligence systems for rapid dissemination of intelligence to users</p>
14. Protection of WMD/M and WMD/M-related materials and components	<p>Continued development of technologies with Russian Federation under the Cooperative Threat Reduction (CTR) treaty Nuclear Warhead Safety and Security and Biological Weapons Proliferation Prevention programs</p> <p>Completed the Fissile Materials Storage Facility</p> <p>Secured nerve agents at 2 Russian storage sites</p>
15. Support to export control activities of the U.S. government	<p>Reviewed 25,000 export license applications for military and dual-use technologies</p> <p>IC conducted significant number of risk analyses on foreign end users of U.S. goods in support of U.S. licensing and export</p>
16. Support to inspection and monitoring activities of arms control agreements and regimes and other nonproliferation initiatives	<p>As of December 31, 2003, under the CTR treaty in the former Soviet Union, destroyed 527 intercontinental ballistic missiles (ICBMs), eliminated 455 ICBM silos, eliminated 408 submarine-launched ballistic missile launchers, and eliminated 124 heavy bombers</p> <p>Began construction of the Chemical Weapons Destruction Facility</p> <p>Assisted Ukraine, Belarus, and Kazakhstan to become nonnuclear states</p>

KEY DOE 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 United States and Russia.

Activities that address DOE's nonproliferation mission include:

- 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 detonations.
- Facilitating the shutdown of the remaining plutonium production reactors in the Russian Federation.
- Downblending surplus highly enriched uranium (HEU) for peaceful use as commercial reactor fuel.
- Providing technical support for nuclear safeguards programs of the International Atomic Energy Agency (IAEA).

DOE strongly supports the CbtWMD 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 (DOE ACE priority 4); and protection of WMD/M and WMD/M-related materials and components, detection and tracking of these materials and components, and export control activities (DOE ACE priority 1, 2, and 5). DOE is working closely with DoD and the IC to detect, characterize, and defeat WMD/M facilities (DOE ACE priority 3).

Selected accomplishments of DOE CbtWMD programs are shown in Table 4.

Table 4: Highlights of DOE Response to CbtWMD ACEs

DOE ACE Priority	Selected Accomplishments in DOE Programs
1. Protection of WMD/M and WMD/M-related materials and components	<p>Secured 77% of the 39 Russian Navy warhead sites</p> <p>Initiated materiel, protection, control, and accounting upgrades at 16% of the 25 Russian Strategic Rocket Forces sites</p> <p>Secured 22% of the 600 metric tons (MT) of weapon-useable nuclear material</p> <p>Converted 16% of the 27 MT of HEU to low-enriched uranium</p> <p>Secured 8 radiological dispersion device program sites</p> <p>Installed radiation detection equipment at 39 (Second Line of Defense) sites</p>
2. Detection, location, and tracking of WMD/M and related materials, components, and key personnel	<p>Engaged 7,600 former Soviet weapon scientists, engineers, and technicians; 20 technologies have been commercialized or businesses created, which attracted \$23M of venture capital; met 49% of nuclear complex reduction targets at 6 weapon facilities</p>
3. Detection, location, characterization, elimination, and defeat of WMD/M facilities with minimal collateral effects	<p>Tested 4 advanced radiation and remote sensing technologies to detect early stages of nuclear weapon programs</p> <p>Delivered 4 advanced technologies and operational systems (e.g., satellite payloads and seismic station calibration data sets) to U.S. national security users to improve accuracy and sensitivity of nuclear weapon test monitoring</p>
4. Support to inspection and monitoring activities of arms control agreements and regimes and other nonproliferation initiatives	<p>Completed 39% of work to convert 98 targeted research and test reactors; completed design of suitable pin-type fuel for Russian-supplied research reactors</p> <p>Expanded bilateral physical protection visits, physical protection training, and IAEA's International Physical Protection Advisory Service to help protect WMD facilities around the world against terrorist attack and sabotage; conducted 5 physical protection training courses</p> <p>Operated 2 Blend-Down Monitoring Systems in Russia and conducted 22 monitoring visits to 4 HEU-to-LEU processing facilities</p> <p>Administered 11 cooperative agreements, including sister-lab agreements, with foreign countries and organizations and completed 5 tasks</p> <p>Developed agreements for HEU research reactor fuel purchase and transportation arrangements</p> <p>Made progress toward shutdown of 3 remaining plutonium production reactors in Russia</p> <p>Expedited retrieval of spent fuel from central Asia</p> <p>Finalized decisions on technical path forward for disposing of surplus Russian weapon-grade plutonium</p>
5. Support to export control activities of the U.S. Government	<p>Worked with U.S. Customs and Border Protection personnel to familiarize them with nuclear equipment, material, and technology, and to improve real-time analysis of suspected shipments</p> <p>Reviewed 100% of U.S. nuclear-related transfers and 50% of missile technology and chemical and biological-related exports</p>

KEY IC ACTIVITIES

Selected IC accomplishments of IC CbtWMD programs are highlighted in Table 5.

Table 5: Highlights of IC Response to CbtWMD ACEs

IC ACE Priority	Selected Accomplishments in IC Programs
1. Timely collection, analysis, and dissemination of strategic, operational, and tactical level actionable intelligence to support CP and CT	<p>IC continued to work closely with Joint Staff in response to CONPLAN 0400</p> <p>IC produced a wide range of estimates and analytical products in support of OIF</p> <p>DIA 's Strategic Multilayered Analysis program supported operational efforts during OIF</p> <p>IC personnel deployed forward to provide real-time support to the warfighter during and after OIF</p> <p>IC is supporting Iraq Survey Group in its efforts to determine status of Iraq's WMD programs.</p> <p>IC assisted Department of State in providing actionable information to international inspection and monitoring regimes, nonproliferation regimes, and foreign governments</p>
2. Detection, identification, characterization, location, prediction, and warning of traditional and nontraditional CW and BW agents (including medical surveillance)	<p>IC characterized traditional and nontraditional CW and BW agents</p> <p>IC produced wide range of estimates and analytical products</p>
3. Defense against, and detection, characterization, and defeat of paramilitary, covert delivery, and terrorist WMD capabilities (including protection of critical CONUS and OCONUS installations)	<p>IC provided assistance in the deterrence of possible illicit WMD proliferation</p> <p>IC produced wide range of estimates and analytical products to include terrorists' potential NBC capabilities</p>
4. Detection, location, characterization, defeat, and elimination of WMD/M weapons and related facilities while minimizing collateral effects	<p>IC produced wide range of estimates and analytical products</p> <p>DIA improved Athena information space and facility analysis database</p>
5. Detection, location, and tracking of WMD/M and related materials, components, and key personnel	<p>IC characterized CW and BW agents</p> <p>IC produced wide range of estimates and analytical products</p> <p>IC continued to work on databases to track and link key WMD personalities</p> <p>Office of Naval Intelligence identified and tracked WMD-related shipments</p>
6. Target planning for WMD/M targets	<p>IC provided analysis and support to various COCOMs in support of WMD/M target planning</p>
7. Support for maritime, air, and ground WMD/M interdiction, including special operations	<p>IC produced wide range of estimates and analytical projects</p> <p>DIA improved Athena information space and facility analysis database</p> <p>U.S.-led Proliferation Security Initiative expanded cooperation in international community to impede and stop flow of WMD/M</p>
8. Detection, location, characterization, and defeat of HDBT while minimizing collateral effects	<p>IC produced wide range of estimates and analytical projects to include physical vulnerability analysis</p> <p>DIA improved Athena information space and facility analysis database</p>
9. Ballistic and cruise missile active defense	<p>IC provided early warning of imminent missile tests</p> <p>IC produced estimates and technical analysis of various missile systems</p>
10. Prompt mobile target detection and defeat	<p>IC provided early warning of imminent missile tests</p>
11. Support to export control activities of the U.S. Government	<p>WINPAC coordinated with Department of Commerce to provide export control support</p> <p>DIA conducted 20,000 end-user checks for DOC export licenses on dual-use items</p>
12. Support to inspection and monitoring activities of arms control agreements and regimes and other nonproliferation initiatives	<p>Improved global monitoring of nuclear detonations in atmosphere through advances in modeling and simulation of Global Positioning System/Nuclear Detonation Detection System constellation</p> <p>IC provided early warning of imminent missile tests</p> <p>WINPAC coordinated IC input to diplomatic and other nonproliferation efforts</p>

FUNDING OF CPRC-MONITORED PROGRAMS

CbtWMD efforts build on the substantial investments made in the military forces and defense infrastructure necessary for the security of the United States. The combined DoD-DOE investment in CP programs for FY05 is over \$15.2 billion compared with over \$14 billion in FY04. All FY05 budget figures in this report are from the President's Budget.

DoD's investment for FY05 is \$13.78 billion. DoD budgets the bulk of its CbtWMD investment in the areas of missile defense (DoD ACE priority 8); detecting, identifying, characterizing, locating, predicting, and warning of traditional and nontraditional CW and BW agents (DoD ACE priority 2); and supporting the inspection, monitoring, and verification of arms control agreements (DoD ACE priority 16).

DOE continues its heavy investment in nonproliferation activities with \$1.43 billion requested for FY05 compared with the FY04 level of \$1.41 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 (DOE ACE priorities 1, 2, and 5); and supporting the inspection and monitoring of arms control agreements and other nonproliferation initiatives (DOE ACE priority 4).

CPRC FINDINGS AND RECOMMENDATIONS

As evidenced by the numerous program and activity accomplishments cited in this report, the CPRC continues to find that the seriousness of WMD/M proliferation and WMD terrorist threats, and the need to enhance capabilities to combat them, are recognized throughout DoD (including OSD, the Joint Staff, the services, and the COCOMs), DOE, the intelligence community, and the U.S. interagency community. Indeed, *combating WMD* remains an established and institutionalized priority within each of the CPRC-represented organizations. The development of capabilities to counter WMD terrorist threats is receiving attention throughout DoD, DOE, and the IC. 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, 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 2004 are summarized below:

- Support the President's FY05 budget for CPRC organizations.
- Continue to address CbtWMD and WMD terrorism requirements as high-priority items in annual budget processes, including in support of homeland defense.
- Continue to integrate the Under Secretary of Defense for Intelligence (USD(I)) into the CPRC process and continue dialog with the IC to address support requirements.

- Continue previous coordination of chemical and biological defense in the CBD RD&A Focus Group by establishing comparable relationships with the Department of Homeland Security (DHS) Chemical and Biological National Security Program.
- Continue to integrate the Assistant Secretary of Defense for Homeland Defense into the CPRC process and expand communications and coordination with DHS and the U.S. Northern Command (USNORTHCOM).
- Continue to expand dialog and information sharing between CPRC organizations and other U.S. Government agencies—for example, DHS, Federal Bureau of Investigation (FBI), U.S. Department of Agriculture (USDA), state and local governments. Establish and promote mechanisms to leverage CbtWMD and CT R&D. Promote DoD, DHS, Department of Health and Human Services (DHHS), and the IC expanded dialog and information sharing on medical countermeasures for WMD to ensure a plan that includes development of an FDA-approved countermeasure for each high-priority threat agent.
- Continue to expand pursuit of international cooperation and partners in combating global proliferation of WMD/M and NBC terrorist threats.
- Continue to monitor, contribute to, and incorporate activities of the JCS CbtWMD architecture process and the CbtWMD Enhanced Planning Process (EPP).
- Assist DoD, DOE, and the IC to identify appropriate requirements to support the implementation of the 2003 Proliferation Security Initiative.
- Restructure and reprioritize ACEs based on a more analytic process tied to the development of COCOM CbtWMD required capabilities and the National Strategy for Combating WMD.

The FY05 President's Budget addresses priority activities and programs for combating WMD/M proliferation and WMD terrorism. Therefore, *the CPRC recommends that the FY05 President's Budget for each of the CPRC-represented organizations be authorized and appropriated by the Congress, and that the needs and requirements for CbtWMD and countering the WMD terrorist threat continue to receive high-priority status in the annual budget development process, including in support of the expanding homeland defense mission.*

Recognizing the critical need for intelligence in establishing an effective response to the proliferation of WMD/M, *the CPRC recommends the continued integration of the new USD(I) into the CPRC process. This position was established in 2003. Actionable intelligence remains the highest priority DoD ACE, which indicates the need for this integration and the need to continue dialog with the IC to address CbtWMD intelligence support requirements.*

One of the CPRC's primary responsibilities is to ensure coordination of CbtWMD activities among its representatives. To that end, *the CPRC recommends continued close coordination of DoD, DOE, and IC CbtWMD RD&A activities and programs, including the continued use of subgroups or focus groups.* The CPRC Chemical and Biological Defense RDA Focus Group has defined the process for integrating the CBD technology base programs and developing preliminary

integrated technology base roadmaps. This process will be used to coordinate RD&A in numerous future CBD programs. DOE's Chemical and Biological National Security Program (CBNP) was the primary DOE liaison with DoD in this focus group concerning chemical and biological defense. However, the CBNP has been transferred to DHS. The CPRC recommends that the working relationship with the CBNP—now in DHS—should continue.

The CPRC recognizes the growing threat of WMD terrorism in the United States and the potential contributions of the CPRC-represented organizations to the mission of supporting civil authorities. To facilitate awareness and the possible transfer of appropriate technologies to the first-response/domestic-response community, *the CPRC recommends that it continue to integrate communications and coordination with DoD's new Assistant Secretary for Homeland Defense, the new DHS, and USNORTHCOM.*

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, USDA, and state and local governments.* During the annual CPRC Program Review of DoD, DOE, and the IC CbtWMD programs, nontraditional CPRC organizations attended and benefited from the review. This expanded dialog includes DoD, DHS, DHHS, 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 CbtWMD and counterterrorism RD&A.*

Recognizing the global nature of WMD/M proliferation and WMD terrorist threats, *the CPRC recommends expanding the pursuit of international cooperative efforts to counter these threats by supporting expansion of existing cooperative activities in R&D, proliferation prevention, and WMD counterterrorism being conducted by DoD, DOE, DHS, and the IC; and by working with the policy community to engage international partners to participate in cooperative RD&A efforts in the future.* The CPRC's immediate goal is to support CPRC-represented organizations in encouraging the establishment of additional international cooperative R&D efforts (beyond the North Atlantic Treaty Organization) and expanding existing cooperative efforts; and, eventually, to explore possibilities for establishing joint acquisition programs. The CPRC continues to encourage and endorse cooperation with our international partners through joint activities and programs, including international information-sharing conferences and outreach programs addressing the threats of WMD/M proliferation and NBC terrorism.

The Joint Staff is developing an operational architecture that will result in a CbtWMD roadmap, capstone requirement documents for the CbtWMD mission areas (as required), and a CbtWMD investment strategy. The CbtWMD EPP, co-chaired by the Office of the Secretary of Defense for Program Analysis and Evaluation and the Joint Staff, serves as the framework to identify funding options needed for known and evolving WMD threats. Integrating the activities and results of this assessment will be a critical step in integrating interagency activities. Therefore, *the CPRC recommends that the activities of the CbtWMD EPP and JCS Integrated CbtWMD roadmap continue to be closely monitored, supported, and incorporated in CPRC member organization processes.*

In 2003, the President announced a new multilateral, international counterproliferation effort, the Proliferation Security Initiative (PSI). To execute this initiative, *the CPRC will support DoD, DOE, and the IC in identifying appropriate requirements to support the implementation of the PSI.*

The Joint Staff, in developing CbtWMD-required capabilities, uses an objective process based on the *National Strategy To Combat WMD*. In the ACE development process of 2005, *the CPRC will examine a similar methodology to restructure and reprioritize ACEs.*

In addition to these recommendations, the CPRC, through its Standing Committee, will continue to review and update the CbtWMD ACEs, reprioritizing them as required. This process is central to ensure that the ACEs continue to reflect the integration of COCOM warfighting priorities and the overarching national security policy and strategy objectives they support. Updated and relevant ACEs assist the CPRC in meeting its program review responsibilities while improving the focus of future programmatic and managerial efforts among the CPRC-represented organizations to counter WMD/M proliferation and WMD terrorist threats.

In the 2003 report, the CPRC began a process to bring greater fidelity and utility to the ACEs through the introduction of additional granularity by delineating associated capability shortfalls with linked areas for progress for each of the ACEs. The CPRC will continue to implement this process to pursue the continued improvement of the fidelity, utility, and prioritization of the ACEs. This process will include a systematic review, revision, and refinement, where necessary, to incorporate provisions of current national-level guidance and rigorous prioritization methodologies to maximize objectivity.

The CPRC has historically used existing intra- and interdepartmental collection and prioritization mechanisms due to the interagency nature of the CPRC constituency. The mechanisms provide a data set that, although extensive, is not exhaustive and can benefit from the incorporation of improved methodologies. These improvements will refine and standardize the collection of programmatic data along with identification of alternative data sources to assist in the assessment of the comprehensiveness of the data submitted. The prioritization process will also continue to be refined to maximize the objectivity of the results.

CONCLUSION AND OUTLOOK

From a policy perspective, there is no single, simple solution to counter WMD weapons. Rather, an integrated CbtWMD strategy is required, with each component building on the strength of the others. The strategy must include nonproliferation efforts to prevent countries from acquiring WMD weapons, counterproliferation programs to deter or interdict the use of WMD weapons, and finally, consequence management efforts to respond to the use of WMD on U.S. territory, against U.S. forces abroad, and against U.S. friends and allies.

In the past several years, the CPRC member organizations have devoted much attention, and shifted significant resources, to deal with the threat posed by nuclear, biological, and chemical weapons. The CPRC has made considerable progress in a short time. But NBC weapon attacks

against U.S. troops overseas and citizens at home remains a threat to the security of the United States; hence U.S. and allied forces must be prepared to defend against the use of WMD weapons.

ABBREVIATIONS AND ACRONYMS

ACE	Area for Capability Enhancement
ACTD	Advanced Capability Technology Demonstration
ATSD(NCB)	Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs
BW	biological warfare
CB	chemical and biological
CBD	Chemical and Biological Defense (program)
CBNP	Chemical and Biological National Security Program (formerly DOE, now DHS)
CBRN	chemical, biological, radiological, and nuclear
CbtWMD	combating weapons of mass destruction
CCAS	Chemical Combat Assessment System
CJCS	Chairman of the Joint Chiefs of Staff
CM	consequence management
COCOM	combatant commander
CONPLAN	contingency plan
CONUS	continental United States
CP	counterproliferation
CPRC	Counterproliferation Program Review Committee
CT	counterterrorism
CTR	Cooperative Threat Reduction (treaty)
CW	chemical warfare
DARPA	Defense Advanced Research Projects Agency
DCI	Director of Central Intelligence
DHS	Department of Homeland Security
DOC	Department of Commerce
DoD	Department of Defense
DOE	Department of Energy
DTRA	Defense Threat Reduction Agency
EOD	explosive ordnance disposal
EPP	Enhanced Planning Process
FBI	Federal Bureau of Investigation
FDA	U.S. Food and Drug Administration
FY	fiscal year
HDBT	hard and deeply buried target
HEU	highly enriched uranium
IAEA	International Atomic Energy Agency
IC	intelligence community
ICBM	intercontinental ballistic missile
JCS	Joint Chiefs of Staff

LEU	low-enriched uranium
MT	metric ton
NBC NNSA	nuclear, biological, and chemical National Nuclear Security Administration
OCONUS OIF OSD	outside the continental United States Operation Iraqi Freedom Office of the Secretary of Defense
PSI	Proliferation Security Initiative
R&D RD&A RestOps	research and development research, development, and acquisition Restoration of Operations (ACTD)
SOF	Special Operations Forces
TTPV	Tactical Tomahawk Penetrator Variant
USDA USD(I) USNORTHCOM	U.S. Department of Agriculture Under Secretary of Defense for Intelligence U.S. Northern Command
WINPAC WMD WMD/M	Weapons Intelligence, Nonproliferation, and Arms Control weapons of mass destruction WMD and their means of delivery