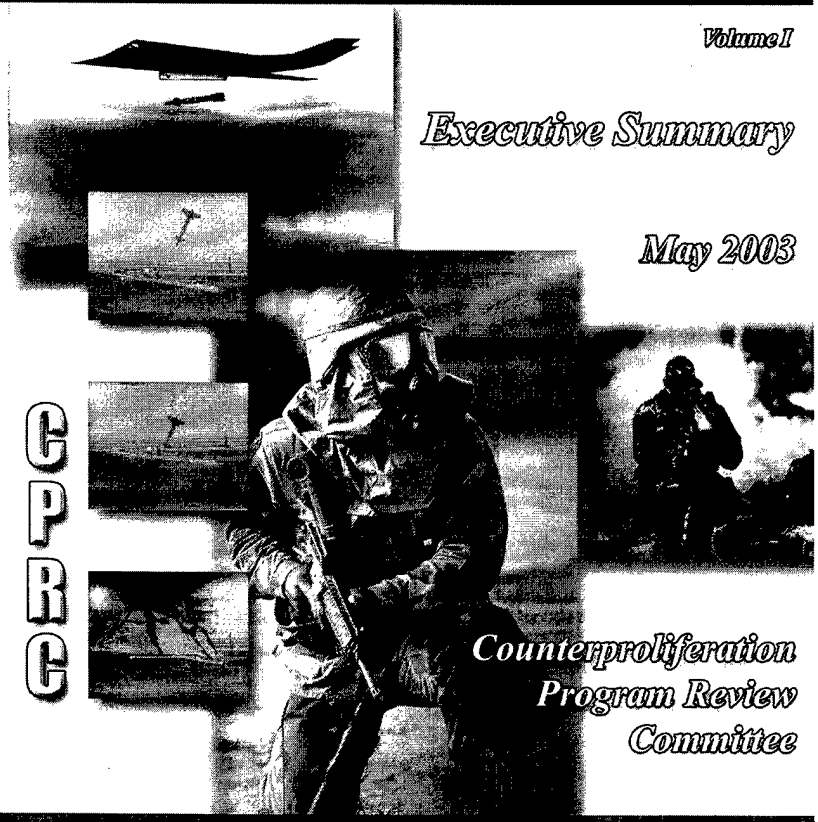
Report on Activities and Programs for Countering Proliferation and NBC Terrorism

Volume I

Executive Summary

May 2003



Counterproliferation Program Review Committee

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Report on Activities and Programs for Countering Proliferation and NBC Terrorism

EXECUTIVE SUMMARY

May 2003

Counterproliferation
Program
Review
Committee

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EXECUTIVE SUMMARY

ESTABLISHMENT OF THE COUNTERPROLIFERATION PROGRAM REVIEW COMMITTEE

In the 1994 National Defense Authorization Act (NDAA) (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 NBC threats. The CPRC is chaired by the Secretary of Defense (SECDEF); 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, DoD, DOE, JCS, 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 (NBC)—and their means of delivery (NBC/M). The findings and recommendations of the CPRC's annual review for 2003 are presented in this, its tenth annual report to Congress.

COMPOSITION OF THE CPRC AND STANDING COMMITTEE

The Deputy Secretary of Defense has been designated by the SECDEF 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 (War on Terrorism, J-5); 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 WMD has three pillars: *Counterproliferation To Combat WMD Use; Strengthened Nonproliferation To Combat WMD Proliferation; 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, *counterproliferation*, entails:

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

The second pillar, *strengthened nonproliferation,* entails:

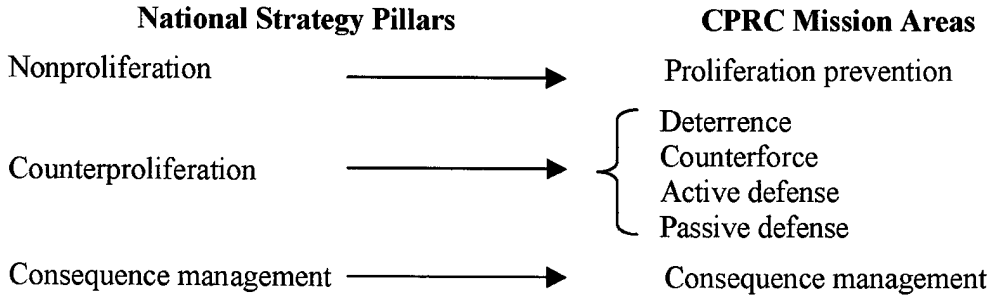
- Active nonproliferation diplomacy
- Multilateral regimes (arms control and other agreements)
- Nonproliferation and threat reduction cooperation
- Controls on nuclear materials
- U.S. export controls
- Nonproliferation sanctions (i.e., proliferation prevention).

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.

INTERAGENCY EFFORTS TO COUNTER PROLIFERATION

(U) 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. The new National Security Council (NSC)-led Counterproliferation Technology Coordinating Committee (CTCC) will integrate counterproliferation efforts across the government. 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 (NPAC TWG), the Technical Support Working Group (TSWG), the NSC-led Counterterrorism and National Preparedness Policy Coordinating Committee, the Community Nonproliferation Committee (CNPC), and the Measurement and Signatures Intelligence (MASINT) Biological Warfare (BW) 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-related demands. The CPRC focus is on maximizing synergies to counter proliferation and combat 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 CP 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. counterproliferation policy. The ACEs are derived from the COCOM Counterproliferation Requirements. 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 CP ACEs for 2003 are listed in Table 1.

Table 1: 2003 ACEs and ACE Priorities of CPRC-Represented Organizations

ACE Priorities			Areas for Capability Enhancements
DoD	DOE	IC	
1	7	1	Timely collection, analysis, and dissemination of strategic, operational, and tactical level actionable intelligence to support CP and CT
2	3	2	Detection, identification, characterization, location, prediction, and warning of CW and BW agents
3			Enable sustained operations in a WMD environment through decontamination, and individual and collective protection
4			Medical protection, training, diagnosis, treatment, surveillance and countermeasures against NBC agents, to include surge manufacturing capability and stockpile availability of vaccines, pretreatments, therapeutics and other medical products
5		7	Support for special operations including WMD/M interdiction
6	4	3	Defense against, and detection, characterization and defeat of paramilitary, covert delivery, and terrorist WMD capabilities (including protection of critical CONUS and OCONUS installations)
7		9	Ballistic and cruise missile active defense
8	5		Consequence management in response to use of WMD (including civil support in response to domestic WMD contingencies)
9	2	5	Detection, location, and tracking of WMD/M and related materials, components, and key personnel
10		6	Target planning for WMD/M targets
11	6	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	9	11	Support to export control activities of the U.S. Government
16	8	12	Support to inspection and monitoring activities of arms control agreements and regimes and other nonproliferation initiatives

CPRC ASSESSMENT OF PROGRESS IN MEETING CP 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 CP capability; and making recommendations to improve capabilities. Progress strengthens U.S. capabilities for countering proliferation 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 a few recurring trends in shortfalls applicable to several ACEs. The CPRC believes these are the areas in which additional attention is needed, including additional resources, in order to meet key counterproliferation requirements. 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 or shortfalls that could constrain the ability to meet requirements in specific performance areas. Only ACEs deemed to have the most serious potential for shortfalls are included in this table.

As Table 2 indicates, better sensors or detectors are a *technical* challenge in ACEs 2, 9, 11, and 12. Current sensors do not yet meet the needs of current conditions. Generally speaking, technological difficulties also continue to stand in the way of missile defense, ACE 7. In ACE 6, while efforts to anticipate the actions of adversaries are being addressed by the intelligence community through technological and other means, this goal is one of the hardest to address adequately.

Table 2: Assessed Performance Area Challenges

2003 ACEs (in DoD Priority Order)	Performance Areas*		
	Cost	Schedule	Technology
2. Detection, identification, characterization, location, prediction, and warning of CW and BW agents			Detect, identify, & characterize
4. Medical protection, training, diagnosis, treatment, surveillance, and countermeasures against NBC agents, to include surge manufacturing capability and stockpile availability of vaccines, pretreatments, therapeutics, and other medical products	Medical CB defense	Medical CB defense	
6. Defense against, and detection, characterization and defeat of paramilitary, covert delivery, and terrorist WMD capabilities			Counterterrorist intelligence

Table 2: Assessed Performance Area Challenges (continued)

2003 ACEs (in DoD Priority Order)	Performance Areas*		
	Cost	Schedule	Technology
7. Ballistic and cruise missile active defense		Missile defense	Missile defense
9. Detection, location, and tracking of WMD/M and related materials, components, and key personnel			Sensors
11. Detection, location, characterization, defeat, and elimination of WMD/M weapons and related facilities while minimizing collateral effects			Sensors
12. Detection, location, characterization, and defeat of HDBT while minimizing collateral effects			Sensors, characterization models
13. Prompt mobile target detection and defeat	Sensors		
14. Protection of WMD/M and WMD/M-related materials and components	Foreign protection		

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

From the standpoint of *cost* or *schedule*, several issues are problematic. Advanced development funding for medical chemical and biological defense has not been sufficient to rapidly transition mature technology base candidates into development. Vaccines against BW agents have been available only in limited amounts. The problem is being addressed, but U.S. Food and Drug Administration (FDA) licensing requirements could lead to scheduling risks. Another significant challenge is to bring under control and to protect from theft or smuggling the CBRN materials of proliferant states or nonstate actors. As U.N. inspections in Iraq made clear, merely discovering the presence of WMD material is an enormous challenge. Finding cost-effective methods of controlling and securing them from further distribution or use is equally challenging.

Capability Shortfall/Areas for Progress Survey. In FY03, the CPRC conducted a survey of capability shortfalls and areas for progress to assess the current status of performance area challenges. CPRC organizations were asked to assess previously identified capability shortfalls based on their knowledge of existing counterproliferation programs from two aspects: the technology maturity of a given program and the effectiveness of a program in addressing a particular capability shortfall. Although specifics of the survey results are classified, the survey responses offered two important findings. First, it verified that certain areas remain a challenge. In particular, CPRC organizations indicated that sensors and data fusion technologies need improvement, both in terms of identifying promising new technologies and in the amount of time required to field products. Similarly, programs addressing the detection and protection of WMD/M-related materials in foreign nations remained a concern and a challenge. Second, the survey revealed capability shortfall areas that had not previously been identified by the CPRC. For example, existing technologies to support special forces and operations were rated lower than expected. In addition, survey participants recommended that decontamination technologies need to be improved and fielded more rapidly. The survey results are reflected in the assessments of areas for progress.

DoD BW CP Implements. The National Defense Act for FY03 legislates that this year's 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 provides the discussion that focuses on technological constraints that limit DoD's efforts. In summary, the

technical challenges are 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 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 COUNTERPROLIFERATION POLICY AND PLANNING ACTIVITIES

Figure 1 depicts the proliferation threat environment and the CP mission areas to prevail against it—*proliferation prevention, deterrence, counterforce, active defense, passive defense, restoration of operations,* and *consequence management.* This taxonomy was developed by DoD in 1994 and has been operationalized and steadily refined since then.

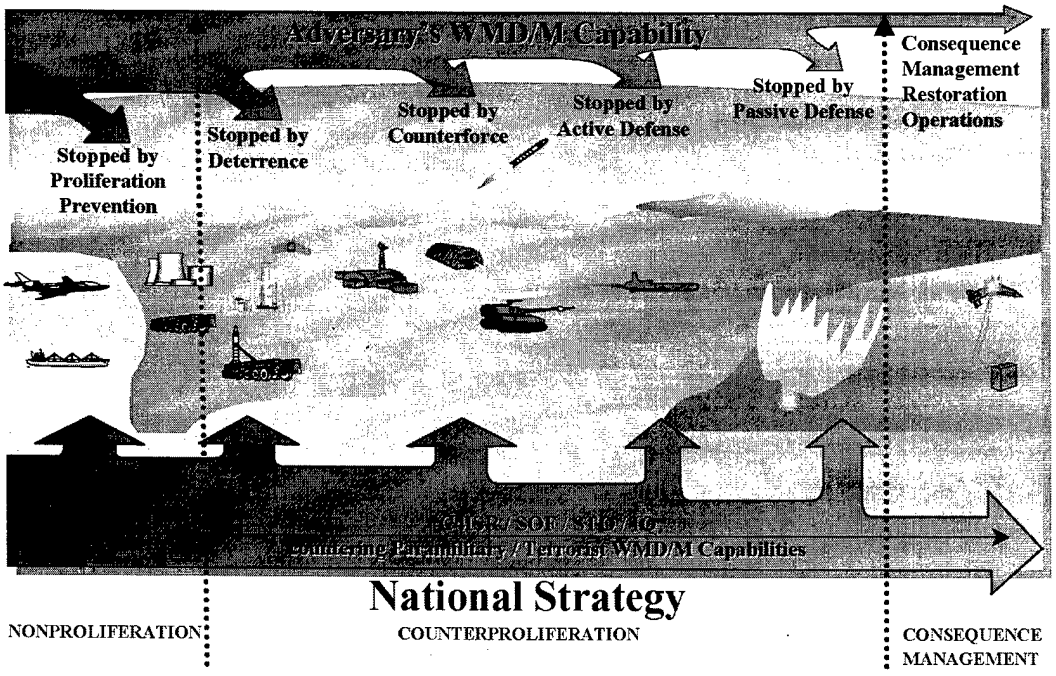


Figure 1: DoD's Multitiered Approach

DoD Counterproliferation Guidance. The key elements of CP include supporting U.S. diplomacy, arms control, and export controls; maintaining a strong deterrent; 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. CP strategy is articulated to combatant commanders through the Joint Strategic Planning System and through joint doctrine. Key documents include the CJCS Contingency Plan (CONPLAN) 0400-96, *Counterproliferation of Weapons of Mass Destruction*; the recently updated Joint Publication (JP) 3-11, *Joint Doctrine for Operations in Nuclear, Biological and Chemical (NBC) Environments;* JP 3-40, *Joint Doctrine for Counterproliferation Operations;* the *CP Charter;* the *CP Strategy*; and the ongoing *CP Operational Architecture* effort.

Joint CP 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,* establishes the conceptual linkages necessary to support COCOMs' planning and execution of CP tasks and missions.

CJCS Guidance and CONPLANs 0400 and 0500. CJCS CONPLAN 0400 fulfills all requirements from CJCS Instruction (CJCSI) 5113.02, *CJCS Counterproliferation Charter.* It describes the four phases of the CP campaign and provides guidance and tasking for conduct of CP operations in each phase. A section of the plan lists the deterrence options available to the United States in countering proliferation and describes how U.S. military operations are a part of the overall implementation of option sets. Expanded sections of the plan address information operations, medical support, and DoD support to foreign consequence management (CM) operations. COCOMs prepare regional supporting CONPLANs. 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 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.

CP 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 Counterproliferation II ACTD, which is providing expanded options for defeating hardened and underground WMD/M targets while minimizing collateral effects; the Thermobaric Weapons ACTD; the Agent Defeat Warhead ACTD; the Contamination Avoidance at Seaports of Debarkation (CASPOD) ACTD; and the Restoration of Operations (RestOps) ACTD, which has completed joint biological and chemical field trials that demonstrated tools and technologies to mitigate the effects of CB attacks on fixed sites.

Biological Defense Operational Concept. In response to a tasking by the Secretary of Defense, the Joint Staff is developing a tailored BW Operational Concept for Joint Task Forces. This operational concept is currently being staffed and should be ready as a Chairman's Memorandum for signature by early 2003. This new operational concept, tailored for BW, will provide the foundation for follow-on joint, multiservice, and service doctrinal revisions as well as requirements generation.

DoD Programs. Well over 100 DoD programs are strongly supporting national efforts to counter WMD/M proliferation and NBC terrorist threats. Over the past 6 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.

Table 3: Highlights of DoD Response to the Counterproliferation ACEs

DoD ACE Priority	Selected Accomplishments in DoD Counterproliferation Programs
1. Timely collection, analysis, and dissemination of strategic, operational, and tactical level actionable intelligence to support CP and CT	Established IC programs in cooperation with DoD to improve capability to identify, characterize, and defeat hard and deeply buried targets (HDBTs) Developed first operational prototype of Specific Emitter Identification (SEI)
2. Detection, identification, characterization, location, prediction; and warning of CW and BW agents	Accelerated development of advanced early warning BW agent detection systems Deployed 237 Joint Portal Shield Systems to 22 overseas sites Established National Capital Region Silver Standard laboratory for biodetection DARPA developed BW agent sensor system (TIGER) capable of significant bacterial discrimination.
3. 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 5 RestOps vignettes to demonstrate CW/BW defense procedures to restore fixed-site operations Fielded 24,000 pocket radiation detection, indication, and computation (RADIAC) devices to active duty forces and WMD Civil Support Teams (CSTs)

Table 3: Highlights of DoD Response to the Counterproliferation ACEs (continued)

DoD ACE Priority	Selected Accomplishments in DoD Counterproliferation Programs
4. Medical protection, training, diagnosis, treatment, surveillance, and countermeasures against NBC agents, to include surge manufacturing capability and stockpile availability of vaccines, pretreatments, therapeutics, and other medical products	Continued to maintain stockpile of investigational new drug (IND) vaccine products and produce baseline stockpiles of Joint Vaccine Acquisition Program products Implemented OSD-mandated immunization program for anthrax vaccine BioPort Corporation became fully FDA compliant Delivered 2.1 million doses of Anthrax Vaccine Adsorbed (AVA) since FDA approval of renovated licensed facility Continued production of anthrax vaccine now at 7 days/week, 365 days/year Pyridostigmine bromide (PB) approved by FDA as pretreatment against Soman Nerve Agent (GD) intoxication Improved diagnostic laboratory capability Improved theater medical surveillance Antidote Treatment Nerve Agent Autoinjector (ATNAA) FDA approved and available for fielding Skin Exposure Reduction Paste Against Chemical Warfare Agents (SERPACWA) FDA approved and in production Reactive Skin Decontamination Lotion (RSDL) cleared for use by FDA to decontaminate skin surfaces exposed to chemical warfare agents
5. Support for Special Operations (including WMD/M interdiction)	Continued development of specialized technologies and equipment prototypes to assist Special Operations Forces (SOF) and explosive ordnance disposal (EOD) teams in countering WMD/M threats
6. Defense against, and detection, characterization and defeat of, paramilitary, covert delivery, and terrorist WMD capabilities (including protection of critical CONUS and OCONUS installations)	Force protection facility assessments undergoing improvements with additional team and specialty personnel Joint-Service EOD procedures program disabled 62 items during Operation Enduring Freedom (OEF) for exploitation Supported COCOMs through WMD Assessment and Analysis Center using analytic models; HAZMAT database to provide weapon effects information
7. Ballistic and cruise missile active defense	Missile Defense Agency (MDA) organized January 2002 Theater High-Altitude Air Defense (THAAD) components exercised in various field exercises; Airborne laser (ABL) components exercised in test facilities Medium Extended Air Defense System (MEADS) funding increased from FY00 leading to proof-of-principle demo scheduled for completion in FY04 Joint Land-Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) program restructure approved by Operational Integrated Process Team (OIPT) and Executive Committee (EXCOM) in January 1999; contingency capability under development Ten Patriot Advanced Capability (PAC-3) intercepts achieved, three against current missile surrogates; missile low-rate initial production (LRIP) decision made; achieved first unit equipped (FUE) during 4QFY01 Fourth Ground-Based Midcourse Defense (GMD) missile intercept achieved ABL models and simulations exercised Aegis ballistic missile defense (BMD) successfully completed Aegis Lightweight Exo-Atmospheric Intercept (ALI) project with two successful hits of ballistic missile target in Jan 02 (FM-2) and Jun 02 (FM-3); commenced Aegis BMD Block 2004 Flight Testing with successful ascent phase intercept in Nov 02 (FM-4) Two THAAD intercepts allowed program to enter acquisition, engineering, manufacturing, and development phase Sea-based and space-based boost projects were combined into single kinetic energy (KE) boost project C^2BMC Block 04 under development; C^2BMC-X established Fourteen PAC-3 batteries deployed to Southwest Asia for Operation Iraqi Freedom

Table 3: Highlights of DoD Response to the Counterproliferation ACEs (continued)

DoD ACE Priority	Selected Accomplishments in DoD Counterproliferation Programs
8. 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 Assisted enhanced installation hardness and response capabilities to meet chemical and biological (CB) terrorist threat Developed and conducted WMD Installation Emergency Responder Training Course SECDEF has certified all 32 WMD CSTs as trained and ready for operations 28 U.S. Army Reserve (USAR) chemical units have been specially trained and equipped to provide domestic response CBRN Reconnaissance and Casualty Decontamination
9. Detection, location, and tracking of WMD/M and related materials, components, and key personnel	Conducted WMD detection and interdiction training in Azerbaijan and related training in other former Soviet Union (FSU) states Commenced fielding of underwater RADIAC device to EOD teams
10. Target planning for WMD/M targets	Completed analysis on priority WMD/M programs Counterproliferation Analysis and Planning System (CAPS) level 4 analysis of 26 facilities and level 5 analysis of 5 facilities completed
11. Detection, location, characterization, and defeat, and elimination of WMD/M weapons and related facilities while minimizing collateral effects	Demonstrated standoff CW detection in unmanned aerial vehicle (UAV) Completed Tactical Missile System—Penetrator (TACMS-P) critical design review (CDR)
12. Detection, location, characterization, and defeat of HDBT while minimizing collateral effects	Completed Divine Kingfisher operational defeat demonstrations against operations tunnel Fielded AGM-86/D hard and deeply buried target (HDBT) defeat munitions DTRA Target Defeat has provided more than 100 underground facility characterizations in support of OEF
13. Prompt mobile target detection and defeat	Demonstrated operational utility of command, control, communications, computers, and intelligence (C^4I) systems for rapid dissemination of intelligence to users
14. Protection of WMD/M and WMD/M-related materials and components	Continued development of technologies with Russian Federation under warhead safety and security exchange agreement
15. Support to export control activities of the U.S. government	Reviewed 25,000 export license applications for military and dual-use technologies Reviewed $5.5 billion in Iraqi oil-for-food contracts resulting in holds being placed on 10 percent due to potential proliferation IC conducted significant number of risk analyses on foreign end users of U.S. goods in support of U.S. licensing and export
16. Support to inspection and monitoring activities of arms control agreements and regimes and other nonproliferation initiatives	Continued data collection, storage, fusion, and distribution technology for International Data Center Continued development of global continuous threshold monitoring network data fusion knowledge base Under cooperative threat reduction (CTR) in FSU, dismantled 497 intercontinental ballistic missiles (ICBMs), destroyed 438 ICBM silos, eliminated 377 submarine-launched ballistic missile (SLBM) launchers, and dismantled 104 heavy bombers

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 (USAMEDDC&S), U.S. Army Medical Research Institute of Chemical Defense (USAMRICD), U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), and the Armed Forces Radiobiology Research Institute (AFRRI). Training courses are offered at these facilities, at the requesting unit's site, via distance education courses, or through the method selected by the unit to best meet its requirements.

KEY DOE ACTIVITIES

Based on the highly specialized scientific, technical, analytical, and operational capabilities of the Department of Energy (National Nuclear Security Administration) and its national laboratories, DOE is uniquely suited to provide leadership in national and international efforts to reduce the danger to U.S. national security posed by the proliferation of WMD. The Office of Defense Nuclear Nonproliferation plays the key role in accomplishing 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) *disposing* of surplus materials in accordance with terms set forth in agreements between the United States and Russia; and (5) *storing* surplus fissile materials in a safe manner pending disposition.

Activities that address this nonproliferation mission include:

- Conducting the government-to-government and laboratory-to-laboratory programs of cooperation between U.S. nuclear experts and their counterparts at nuclear facilities and institutes in the FSU to improve materials protection, control, and accountability.
- Working with the private sector to engage WMD weapon scientists, engineers, and technicians in the FSU nuclear cities in activities that reduce the proliferation threat and promote their transition to nondefense sector employment.
- Assisting Russia and the Newly Independent States (NIS) in establishing and enhancing nuclear material export control systems.
- Developing technologies and systems to detect the proliferation of WMD and to monitor and verify existing treaties.
- Providing technical support for nuclear safeguards and emergency programs of the International Atomic Energy Agency (IAEA).
- Providing unique and in-depth policy and technical expertise as part of the U.S. Government's integrated efforts to monitor for nuclear explosions.
- Downblending surplus U.S. highly enriched uranium (HEU) for peaceful use as commercial reactor fuel.
- Supporting U.S. Government efforts to implement the U.S.-Russia Plutonium Management and Disposition Agreement, including international financing and support to Russian development and implementation of disposition technologies.

DOE strongly supports the counterproliferation 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 8); 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 9); and providing consequence management for terrorist use of NBC weapons, including civil support in response to domestic WMD contingencies (DOE ACE priority 5). DOE is working closely with DoD and the IC to detect and identify CW and BW agents and to detect, characterize, and defeat

WMD/M facilities (DOE ACE priorities 3 and 6) as well as to detect and characterize worldwide nuclear proliferation (DOE ACE priority 7). In addition to its core nuclear nonproliferation activities, the DOE Chemical and Biological National Security Program (CBNP) (now moved to the Department of Homeland Security) supports the detection, identification, and characterization of CBW agents (DOE ACE priority 3).

Selected accomplishments of DOE programs are shown in Table 4.

Table 4: Highlights of DOE Response to Counterproliferation ACEs

DOE ACE Priority	Selected Accomplishments in DOE Programs
1. Protection of WMD/M and WMD/M-related materials and components	Completed material protection, control, and accounting (MPC&A) comprehensive upgrades on 17% of the 600 MT of weapon-usable nuclear material, and on 40% of the estimated 4,000 Russian Navy nuclear warheads Completed conversion of 11% of 29 MT of weapon-grade highly enriched uranium (HEU) to low-enriched uranium (LEU) Initiated activities to locate, consolidate, and secure 9 orphan or surplus radioactive sources in Georgia Installed radiation detection equipment at 12 additional (20 total) strategic transit and border sites to detect and deter illicit trafficking in nuclear materials Initiated discussions on details of program for disposing of surplus Russian weapon-grade plutonium
2. Detection, location, and tracking of WMD/M and related materials, components, and key personnel	Signed closure agreement with Russia committing Minatom to cease nuclear weapon work at Avangard in 2003 Attracted $50 million of venture capital funding for commercializing 5 Initiatives for Proliferation Prevention projects
3. Detection, identification, characterization, location, prediction, and warning of CW and BW agents	
4. Defense against, and detection, characterization and defeat of paramilitary, covert delivery, and terrorist WMD capabilities	Conducted joint field tests with U.S. Army Night Vision Laboratory on optical fluorescence detection concept for nuclear materials
5. Consequence management in response to use of WMD (including civil support in response to domestic WMD contingencies)	
6. Detection, location, characterization, defeat, and elimination of WMD/M weapons and related facilities with minimal collateral effects	Conducted flight test of airborne remote sensing technology for proliferation signature detection and characterization
7. Timely collection, analysis, and dissemination of strategic, operational, and tactical level actionable intelligence to support CP and CT	
8. Support to inspection and monitoring activities of arms control agreements and regimes and other nonproliferation initiatives	Conducted critical design review for electromagnetic pulse sensor to be launched aboard GPS Block IIF satellites; delivered Knowledge Base Release 5 (calibrated data sets and analysis tools) for ground-based monitoring of nuclear explosions Conducted 18 Special Monitoring Visits to four Russian uranium processing facilities; 171.3 MT of HEU was converted to LEU from 1995 to 2002. Conducted first plutonium storage monitoring visit in Russia under Plutonium Production Reactor Agreement
9. Support to export control activities of the U.S. Government	Demonstrated digital camera for real-time analysis of suspected shipments, and materials analyzer to identify high-purity and dual-use items, in support of U.S. Customs inspections

KEY IC ACTIVITIES

Selected IC accomplishments in counterproliferation are highlighted in Table 5.

Table 5: Highlights of IC Response to Counterproliferation 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	IC continued to work closely with Joint Staff in response to CONPLAN 0400 IC produced wide range of estimates and analytical products DIA developed Strategic Multilayered Analysis (SMLA) program to support interdiction efforts National Ground Intelligence Center (NGIC) provided analysis of use of improvised explosive devices IC assisted DOS in providing actionable information to international inspection and monitoring regimes, nonproliferation regimes, and foreign governments
2. Detection, identification, characterization, location, prediction, and warning of CW and BW agents	IC characterized traditional and nontraditional CW and BW agents IC produced wide range of estimates and analytical products
3. Defense against, and detection, characterization, and defeat of paramilitary, covert delivery, and terrorist WMD capabilities (including protection of critical CONUS and OCONUS installations)	DoD and FBI expanded their CP assistance program in FSU states to deter possible illicit WMD proliferation IC produced wide range of estimates and analytical products NGIC assessed potential terrorist CW capabilities
4. Detection, location, characterization, defeat, and elimination of WMD/M weapons and related facilities while minimizing collateral effects	National Imagery and Mapping Agency (NIMA) produced products to monitor WMD research, development, test, and evaluation (RDT&E) worldwide IC produced wide range of estimates and analytical products DIA improved Athena information space and facility analysis datebase
5. Detection, location, and tracking of WMD/M and related materials, components, and key personnel	NIMA produced products to monitor WMD RDT&E worldwide IC characterized CW and BW agents IC produced wide range of estimates and analytical products IC began work on database to track key WMD personalities ONI identified and tracked WMD-related shipments
6. Target planning for WMD/M targets	DIA linked CP intelligence production more directly to COCOMs' planning process Increased DIA analyst interaction with combatant command planners Provided NGIC analytical support on foreign equipment performance NIMA produced products to monitor WMD RDT&E worldwide
7. Support for Special Operations including WMD/M interdiction	IC produced wide range of estimates and analytical projects NIMA produced products to monitor WMD RDT&E worldwide DIA improved Athena information space and facility analysis of database DIA developing modeling tools for BW agent production
8. Detection, location, characterization, and defeat of HDBT while minimizing collateral effects	IC produced wide range of estimates and analytical projects NIMA produced products to monitor WMD RDT&E worldwide DIA improved Athena information space and facility analysis of database DIA's Underground Facility and Analysis Center (UFAC) supported CENTCOM operations planning with analysis of Iraqi underground facilities
9. Ballistic and cruise missile active defense	IC provided early warning of imminent missile tests
10. Prompt mobile target detection and defeat	NGIC provided analytical support on foreign equipment performance IC provided early warning of imminent missile tests

Table 5: Highlights of IC Response to Counterproliferation ACEs (continued)

IC ACE Priority	Selected Accomplishments in IC Programs
11. Support to export control activities of the U.S. Government	WINPAC coordinated with DOC to provide export control support DIA conducted 20,000 end-user checks for DOC export licenses on dual-use items
12. Support to inspection and monitoring activities of arms control agreements and regimes and other nonproliferation initiatives	Improved global monitoring of nuclear detonations in atmosphere through advances in modeling and simulation of Global Positioning System/Nuclear Detonation Detection System constellation. NGIC provided analytical support on foreign equipment performance and expertise for site visits IC provided early warning of imminent missile tests WINPAC coordinated IC input to diplomatic and other nonproliferation efforts

FUNDING OF CPRC-MONITORED PROGRAMS

Counterproliferation efforts build upon 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 FY04 is over $14 billion compared with over $12.5 billion in FY03. All FY04 budget figures in this report are from the President's Budget.

DoD's investment for FY04 is $12.65 billion. DoD budgets the bulk of its CP investment in the areas of missile defense (DoD ACE priority 7); detecting, identifying, characterizing, locating, predicting, and warning of CW and BW agents (DoD ACE priority 2); supporting the inspection, monitoring, and verification of arms control agreements (DoD ACE priority 16); medical protection against NBC agents (DoD ACE priority 4); and enabling sustained operations in a WMD environment through decontamination and individual and collective protection (DoD ACE priority 3).

DOE continues its heavy investment in nonproliferation activities with $1.41 billion requested for FY04 compared with the FY03 level of $1.19 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 9); supporting the inspection and monitoring of arms control agreements and other nonproliferation initiatives (DOE ACE priority 8); and defense against, and detection, characterization, and defeat of paramilitary, covert delivery, and terrorist WMD capabilities (DOE ACE 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 counter 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, *countering proliferation* 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 2003 are summarized below:

- Support the President's FY04 budget for CPRC organization.
- Continue to address CP and WMD terrorism requirements as high-priority items in annual budget processes, including in support of homeland defense.
- Integrate the Under Secretary of Defense for Intelligence (USD(I)) into the CPRC process and continue dialog with 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.
- Incorporate the Assistant Secretary of Defense for Homeland Defense (ASD(HD)) into the CPRC process and expand communications and coordination with DHS and U.S. Northern Command (NORTHCOM).
- Continue to expand dialog and information sharing between CPRC organizations and other U.S. Government agencies (e.g., FBI, DHS, USDA, state and local governments). Establish and promote mechanisms to leverage CP and CT R&D.
- Expand pursuit of international cooperation and partners in countering global proliferation of WMD/M and NBC terrorist threats.
- Continue to monitor, contribute to, and incorporate activities of JCS CP architecture process.
- Initiate the formal coordination of a DoD Directive on CP Acquisition Strategy.
- Support the newly established Interagency Counterproliferation Technology Coordination Committee.

The FY04 President's Budget addresses priority activities and programs for countering WMD/M proliferation and WMD terrorism. Therefore, *the CPRC recommends that the FY04 President's Budget for each of the CPRC-represented organizations be authorized and appropriated by the Congress, and that the needs and requirements for counterproliferation 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 integrating the new USD(I) into the CPRC process. This position has just been established in 2003. The elevation of actionable intelligence to the highest priority DoD ACE indicates the need for this integration and the need to continue dialog with the IC to address CP intelligence support requirements.*

One of the CPRC's primary responsibilities is to ensure coordination of counterproliferation activities among its representatives. To that end, *the CPRC recommends continued close*

coordination of DoD, DOE, and IC counterproliferation 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 Biological National Security Program was the primary DOE liaison with DoD in this focus group concerning chemical and biological defense. However, the CBNP has been transferred to the DHS. The CPRC recommends that the working relationship and 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 *establish and promote communications and coordination with DoD's new Assistant Secretary for Homeland Defense, the new DHS, and NORTHCOM.*

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's counterproliferation programs, nontraditional CPRC organizations attended and benefited from the review. The CPRC can further expand this type of dialog and communication by *establishing and promoting mechanisms to leverage CP 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 NATO) 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 a counterproliferation operational architecture that will result in a CP roadmap, capstone requirement documents (CRDs) for the CP mission areas (as required), and a CP investment strategy. This will provide integration, configuration control, standardization, and continuity management for CP mission areas and enablers through integration and validation of requirements, architectures, interoperability, DOTMLPF, and joint experimentation. 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 JCS Integrated CP roadmap continue to be closely monitored, contributed to, and incorporated in CPRC member organization processes.*

The CPRC also recommends *closeout of informal coordination and initiation of formal coordination of the DoD CP Acquisition Strategy.* Implementation of the DoD CP Acquisition Strategy will further leverage the efforts of this report to Congress. The CP Acquisition Strategy will guide and integrate DoD's CP activities by focusing on the counterproliferation shortfalls and areas for progress highlighted in the Annual CPRC Report to Congress.

Last, *the CPRC recommends that its member organizations support the newly established, NSC-initiated Counterproliferation Technology Coordination Committee.* The CTCC, consisting of senior representatives from all concerned agencies, will act to improve interagency coordination of U.S. Government counterproliferation research and development efforts. The committee will assist in identifying priorities, gaps, and overlaps in existing programs and in examining options for future investment strategies.

In addition to these recommendations, the CPRC, through its Standing Committee, will continue to review and update the counterproliferation 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.

CONCLUSION AND OUTLOOK

From a policy perspective, there is no single, simple solution—no "silver bullet"—to counter WMD weapons. Rather, an integrated counterproliferation 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 the threat of NBC weapon attacks against U.S. troops overseas and citizens at home remains a danger to the security of the United States; hence U.S. and allied forces must be prepared to defend against the use of WMD/M in any future conflict.

ABBREVIATIONS AND ACRONYMS

ABL	Airborne Laser
ACE	Area for Capability Enhancement
ACTD	Advanced Capability Technology Demonstration
AFRRI	Armed Forces Radiobiology Research Institute
ALI	Aegis LEAP (Lightweight Exo-Atmospheric Projectile) Interceptor
ASD(HD)	Assistant Secretary of Defense for Homeland Defense
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
AVA	Anthrax Vaccine Adsorbed
BMD	ballistic missile defense
BW	biological warfare
C^4I	command, control, communications, computers, and intelligence
CALCM	Conventional Air-Launched Cruise Missile
CAPS	Counterproliferation Analysis and Planning System
CASPOD	Contamination Avoidance at Seaports of Debarkation (ACTD)
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
CBW	chemical and biological warfare
CDR	critical design review
CHPPM	Center for Health Promotion and Preventive Medicine
CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CM	consequence management
CNPC	Community Nonproliferation Committee
COCOM	Combatant commander
CONPLAN	contingency plan
CONUS	continental United States
CP	counterproliferation
CPRC	Counterproliferation Program Review Committee
CRD	capstone requirements document
CST	Civil Support Team
CT	counterterrorism
CTCC	Counterproliferation Technology Coordination Committee
CTR	cooperative threat reduction
CW	chemical warfare
DARPA	Defense Advanced Research Projects Agency
DCI	Director of Central Intelligence
DHS	Department of Homeland Security
DIA	Defense Intelligence Agency
DOC	Department of Commerce
DoD	Department of Defense
DOE	Department of Energy
DOS	Department of State
DOTMLPF	doctrine, organization, training, material, leadership, personnel, and facilities

DTRA	Defense Threat Reduction Agency
EOD	explosive ordnance disposal
EXCOM	Executive Committee
FBI	Federal Bureau of Investigation
FDA	U.S. Food and Drug Administration
FSU	former Soviet Union
FUE	first unit equipped
FY	fiscal year
GPS	Global Positioning System
HDBT	hard and deeply buried target
HEU	highly enriched uranium
IAEA	International Atomic Energy Agency
IC	intelligence community
ICBM	intercontinental ballistic missile
IND	investigational new drug
JCS	Joint Chiefs of Staff
JLENS	Joint Land-Attack Cruise Missile Defense Elevated Netted Sensor System
JP	joint publication
LEU	light enriched uranimum
LRIP	low-rate initial production
MASINT	measurement and signatures intelligence
MDA	Missile Defense Agency (former BMDO)
MEADS	Medium Extended Air Defense System
MPC&A	material protection, control, and accounting
MT	metric ton
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, and chemical
NBC/M	NBC weapons and their means of delivery
NDAA	National Defense Authorization Act
NGIC	National Ground Intelligence Center
NIMA	National Imagery and Mapping Agency
NIS	Newly Independent States
NORTHCOM	U.S. Northern Command
NPAC TWG	Nonproliferation and Arms Control Technology Working Group
NSC	National Security Council
O&M	operation and maintenance
OCONUS	outside the continental United States
OEF	Operation Enduring Freedom
OIPT	Operational Integrated Process Team
OSD	Office of the Secretary of Defense
PAC-3	Patriot Advanced Capability—Phase 3

R&D	research and development
RADIAC	radiation detection, indication, and computation
RD&A	research, development, and acquisition
RDT&E	research, development, test, and evaluation
RestOps	Restoration of Operations (ACTD)
S&T	science and technology
SECDEF	Secretary of Defense
SEI	Specific Emitter Identification
SLBM	submarine-launched ballistic missile
SOF	Special Operations Forces
THAAD	Theater High Altitude Air Defense
TSWG	Technical Support Working Group
UAV	Unmanned Aerial Vehicle
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USAMEDDC&S	U.S. Army Medical Department Center and School
USAMRICD	U.S. Army Medical Research Institute for Chemical Defense
USAMRIID	U.S. Army Medical Research Institute for Infectious Disease
USDA	U.S. Department of Agriculture
USD(I)	Under Secretary of Defense for Intelligence
WINPAC	Weapons Intelligence, Nonproliferation, and Arms Control Center
WMD	weapons of mass destruction
WMD/M	WMD and their means of delivery