Executive Summary

Counterproliferation Program Review Committee

April 2000

Report on Activities and Programs for Countering Proliferation and NBC Terrorism

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Executive Summary

Congress directed, in the 1994 National Defense Authorization Act (NDAA), that the Counterproliferation Program Review Committee (CPRC) be established to review activities and programs related to countering proliferation within the Office of the Secretary of Defense (OSD), Department of Energy (DOE), U.S. Intelligence, and the Joint Chiefs of Staff (JCS). The high-level national commitment to counter proliferation threats is reflected in the CPRC's membership. It is chaired by the Secretary of Defense and composed of the Secretary of Energy (as Vice Chair), the Director of Central Intelligence (DCI), and the Chairman of the Joint Chiefs of Staff (CJCS). The CPRC is chartered to make and implement recommendations regarding interdepartmental activities and programs to address shortfalls in existing and programmed capabilities to counter the proliferation of nuclear, biological, and chemical (NBC) weapons of mass destruction (WMD) and their means of delivery. In the 1997 NDAA, Congress broadened the CPRC's responsibilities and specified that the CPRC also review activities and programs of the CPRC-represented organizations related to countering paramilitary and terrorist NBC threats. The findings and recommendations of the CPRC's annual review for 2000 are presented in this, its seventh annual report to Congress.

Organizationally, the Deputy Secretary of Defense has been designated by the Secretary of Defense to perform the duties of CPRC Chairman, and the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs (ATSD(NCB)) has been designated by Congress as CPRC Executive Secretary. The CPRC Standing Committee, established in 1996, meets regularly and is actively working to perform the duties and implement the recommendations of the CPRC. 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 Nonproliferation; the Deputy Director for Strategy and Policy, Joint Chiefs of Staff (Plans and Policy, J-5); and the Assistant Secretary of Defense for Special Operations/Low-Intensity Conflict (ASD(SO/LIC)). The Standing Committee has since expanded to include numerous participating members. These members include the Assistant Secretary of Defense for Strategy and Threat Reduction (ASD/S&TR); the Assistant Secretary of Defense for Command, Control, Communications and Intelligence (ASD/C3I); the Assistant Secretary of Defense for Reserve Affairs (ASD/RA); the Assistant to the Secretary of Defense for Civil Support (ATSD-CS); Director, Defense Advanced Research Projects Agency (DARPA); Director, Defense Threat Reduction Agency; Director, White House Office of Science and Technology Policy; and Department of State (DOS), Director of Technology and Assessments, Bureau of Verification and Compliance, (TA/VC). The decision to include these organizations was based on the recognition of their significant contributions to the overall counterproliferation mission and responsibilities embodied within the CPRC. For example, the inclusion of the ASD(C3I)—who serves as the Secretary of Defense's principal advisor on C3, intelligence, surveillance, reconnaissance, information operations, critical infrastructure and numerous other areas—will facilitate better coordination between the DoD and the Intelligence Community in supporting CP and addressing shortfalls identified by the DoD Inspector General's report on intelligence support to CP. The addition of other organizations also enhances the level of coordination within the CPRC and between the CPRC and other government organizations, such as the Interagency Weapons of Mass Destruction Preparedness Group (WMDP), which includes the ATSD-CS.

To guide its program review process, the CPRC established the Areas for Capability Enhancements (ACEs) to characterize those areas where progress is needed to enhance both the warfighting capabilities of the Combatant Commanders and the overall ability to satisfy the demands of U.S. nonproliferation and counterproliferation policy. The ACEs are based on the 1998 Commanders-in-Chief (CINC) Counterproliferation Requirements. The ACEs define those priority areas where additional capabilities are needed to meet the challenges posed by the proliferation of NBC weapons and their means of delivery (NBC/M), including those posed by paramilitary and terrorist NBC threats. They also serve as a basis to assess progress in meeting the mission needs of the CPRC-represented organizations for countering proliferation. The ACEs are reviewed annually to ensure that they continue to reflect the warfighting needs of the CINCs and the overarching national security objectives the CINCs support.

Table 1: The Counterproliferation ACEs for 2000

ACE Priorities			Areas for Capability Enhancements (ACEs)
DoD	DOE	US INTELL	
1	-	-	Enable sustained operations in an NBC environment through decontamination and individual and collective protection
2	3	2	Detection, identification, characterization, and warning of CBW agents
3	-	-	Medical protection against NBC agents, to include vaccine stockpile availability
4	7	1	Collection, analysis, and dissemination of actionable intelligence to counter proliferation
5	-	8	Ballistic and cruise missile active defense
6	2	5	Support for Special Operations Forces and defense against paramilitary, covert delivery, and terrorist NBC threats
7	-	6	Target planning for NBC/M targets
8	-	7	Detection, characterization, and defeat of hard and/or deeply buried targets with minimal collateral effects
9	1	4	Detection, tracking, and protection of NBC/M and NBC/M-related materials and components
10	6	3	Detection, characterization, and defeat of NBC/M facilities with minimal collateral effects
11	-	11	Prompt mobile target detection and defeat
12	4	-	Provide consequence management for terrorist use of NBC weapons (including civil support in response to domestic WMD contingencies)
13	8	10	Support export control activities of the U.S. government
14	5	9	Support inspection and monitoring activities of arms control agreements and regimes and other nonproliferation initiatives

The ACEs reflect evolving needs and shortfalls that change as threats evolve and become better understood and as research and development (R&D) and acquisition (RD&A) programs mature, enabling new operational capabilities. Updated and current ACEs serve to improve the focus of future programmatic and managerial efforts to counter NBC/M proliferation and NBC terrorist threats. Each CPRC-represented organization individually prioritizes the ACEs in accordance with their own departmental mission needs to more accurately reflect each organization's response to countering proliferation and NBC terrorism. The counterproliferation ACEs for 2000 are listed in Table 1.

The CPRC focused its annual activity and program reviews on identifying key RD&A program accomplishments and milestones highlighting planned near-, mid-, and long-term capability improvements. The CPRC has determined that a prudent, time-phased response to the challenges posed by NBC/M proliferation and NBC terrorist threats is in place and solidly under way. Although it will take several years to achieve the goals and objectives of the numerous programs responding to these challenges, the CPRC can report that progress continues to be made in many ACE priority areas. This progress continues to strengthen U.S. capabilities for countering proliferation and NBC terrorism and includes: a) the rapid fielding of essential capabilities; b) coordinating and focusing interorganizational RD&A activities; c) expanding international cooperative activities; and d) improving the integration, management, and oversight of activities and programs related to countering proliferation and NBC terrorism.

Commensurate with the seriousness of the threat, the Department of Defense (DoD), DOE, and U.S. Intelligence have each made serious commitments to enhance national capabilities to counter the proliferation of NBC/M and NBC terrorist threats. The combined DoD-DOE investment for Fiscal Year (FY) 2001 is over $8 billion compared to over $6.2 billion in FY 2000, approximately a 29% increase. DoD's investment for FY 2001 is over $7.3 billion, approximately a 30% increase from last year's investment of more than $5.7 billion. DoD budgets the bulk of its counterproliferation investment in the areas of missile defense (DoD ACE priority 5); individual and collective protection against NBC agents to enable sustained operations on the NBC battlefield (DoD ACE priority 1); supporting the inspection, monitoring, and verification of arms control agreements (DoD ACE priority 14); detection, identification, characterization, and warning of chemical/biological warfare (CBW) agents (DoD ACE priority 2); supporting Special Operations Forces (SOF) and defending against paramilitary, covert delivery, and terrorist NBC threats (DoD ACE priority 6); consequence management of terrorist use of NBC weapons (DoD ACE priority 12); medical protection against NBC agents (DoD ACE priority 3); and target planning for NBC/M targets (DoD ACE priority 7). It must be emphasized that counterproliferation efforts leverage the substantial investments made in maintaining the requisite military forces and defense infrastructure necessary to provide for the basic common defense of the United States. All budget figures in this report are from the President's Budget.

DOE continues to increase its investment in nonproliferation activities with $577.6 million requested for FY 2001, a $57 million increase over last year. As part of its core national nonproliferation program, DOE focuses on the tracking and control of nuclear-weapons-related materials and components (DOE ACE priorities 1, 7, and 8), supporting the inspection and monitoring of arms control agreements (DOE ACE priority 5), and defending against and managing the consequences of covert delivery and NBC terrorist threats (DOE ACE priorities 2 and 4).

DOE is also continuing its technology development efforts in the detection, identification, and characterization of CBW agents (DOE ACE priorities 3 and 6).

Since the May 1999 CPRC report was submitted, the following key activities have been undertaken and accomplishments achieved by DoD, DOE, and U.S. Intelligence to enhance the interdepartmental response to countering NBC/M proliferation and NBC terrorist threats.

Summary of Key DoD Activities

- ***DoD's Counterproliferation Initiative.*** The DoD Counterproliferation Initiative (CPI) is the DoD-wide effort to address the threats posed by the proliferation of NBC/M. The CPI supports our national counterproliferation policy, first by contributing to U.S. government efforts to prevent the acquisition of NBC weapons or reverse it when it has occurred. If prevention fails, DoD must have the capabilities needed to deter the use of NBC weapons and to defend against their use. Finally, DoD wants to ensure that U.S. forces are equipped and trained to prevail in future Smaller-Scale Contingencies (SSCs) and Major Theater Wars (MTWs) wherever they may face NBC/M threats.

- ***Defense Threat Reduction Agency.*** As a result of the Defense Reform Initiative (DRI), the DoD formed the Defense Threat Reduction Agency (DTRA) from several key elements of DoD with responsibilities for countering proliferation of NBC weapons. DTRA was established on 1 October 1998 to serve as a single contact point for the full spectrum of activities involved with reducing the threat of NBC weapons, such as protecting critical technologies, controlling NBC/M through treaties and agreements, providing advanced capabilities to actively prevent the proliferation of and deny sanctuary to NBC, and helping sustain our nuclear deterrent. The director of DTRA reports to the Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L) through the Director, Defense Research and Engineering (DDR&E). DTRA's Counterproliferation Support and Operations Directorate and the DTRA Chemical Biological Defense Directorate now embody many of the activities formerly under execution by the Counterproliferation Support Program (CPSP). The programmatic responsibilities of the CPSP devolved to DTRA during the DRI process. Oversight of these programs is still provided by ATSD(NCB) and the deputy for Counterproliferation and Chemical and Biological Defense (DATSD(CP/CBD)).

- ***The Counterproliferation Concept Plan (CONPLAN) 0400.*** The CJCS' *Counterproliferation CONPLAN 0400*, which directs CINC planning to implement national-level counterproliferation policy in terms of operational objectives and supporting tasks, has been coordinated by the Joint Staff. The CJCS CONPLAN 0400 was used by the CINCs to develop their own area-specific counterproliferation CONPLANs. The five-theater CINC CONPLANs were approved in August 1999. As part of the continuing process to improve the CINCs' counterproliferation capabilities, the Joint Staff will review and update the CJCS CONPLAN 0400 in FY 2000.

- ***Key Counterproliferation Studies, Analyses, and Doctrine Development.*** There were a number of counterproliferation studies and analyses initiated or completed since the May 1999 report, including:

- ***Joint NBC Defense Program Assessment.*** The Joint NBC Defense (JNBCD) Program Assessment was initiated at the direction of the Joint Requirements Oversight Council (JROC). The goal of the assessment is to identify CINC passive defense requirements, RDT&E, Procurement, and Operations and Maintenance (O&M) issues not identified or prioritized in JNBCD and Service programs.
- ***Coalition Capability Assessment.*** This assessment was initiated as a result of CENTCOM's request for the JROC to assess coalition partners' CBW defense capabilities and potential contribution to the joint force structure.
- ***Navy Studies.*** In 1999, the Navy and USMC completed an assessment of their ability to conduct an amphibious assault in a chemical or biological environment. The study recommended that additional "proof-of-concept exercises/experiments" should be conducted to revalidate doctrine and equipment and to identify capability shortfalls.
- ***Air Force Counter-NBC Readiness and Doctrine Development.*** The *Fighting the Base Study*, completed in April 1999, surveys current Air Force concepts, plans, and procedures for operations in NBC environments. The third *Counter-CBW Operations Roadmap*, completed in July 1999, provides the Air Force an investment strategy for counter-CBW programs and a cross-functional plan to increase capabilities to sustain combat operations in a CBW environment. The *Counter-NBC Operations Readiness Initiative* is an ongoing effort that sets Air Force-wide standards for readiness and capabilities to cope with NBC attacks, and recommends reporting and evaluation initiatives to assess capabilities and identify and fix shortfalls. The *Air Force Doctrine Document 2-1.8, Counter-NBC Operations*, to be published in Fall 2000, will describe the impact of the NBC threat on Air Force mission accomplishment and the need for a balanced and integrated approach using proliferation prevention, counterforce, active defense, and passive defense operations to overcome this threat. The second phase of the *Air Mobility Study*, the *Sustaining Intra-Theater Air Mobility Operations in a WMD Environment*, is in progress and will focus on the NBC threat to intra-theater airlift capabilities in support of combat operations in a major theater war.

- ***U.S. Strategic Command Counterproliferation Activities.*** U.S. Strategic Command (STRATCOM) provides a deliberate counterproliferation planning support capability to the Theater CINCs. The centerpiece of this program is the Unified Command-accepted Counterproliferation Analysis and Planning System (CAPS), jointly managed and funded by STRATCOM and DTRA. CAPS is a classified planning resource created by Lawrence Livermore National Laboratory to support near-real-time nodal analyses and collateral effects predictions for counterproliferation missions.

- ***Ongoing Advanced Concept Technology Demonstrations (ACTDs).*** To accelerate the fielding of advanced technologies and capabilities to counter NBC/M threats, three active ACTDs are ongoing: a) the Counterforce CP2 ACTD is providing expanded options for defeating hardened and underground NBC/M targets while minimizing collateral effects; b) the Joint Biological Remote Early Warning System (JBREWS) ACTD is providing enhanced capabilities for early warning of BW attacks; and c) the approved Restoration of Operations (RestOps) ACTD has completed a background visit at the designated demonstration site, Osan Air Base, and is preparing for FY 2000 starts of joint biological and chemical field trials.

- ***Hard and Deeply Buried Target Defeat (HDBTD) Programs.*** The CP1 Counterforce ACTD was completed in FY 1999 and technologies that were successfully demonstrated are being transitioned to Service procurement/acquisition. The CP2 Counterforce ACTD will be demonstrating in the near term the addition of a penetrating warhead to the Air Force Conventional Air Launched Cruise Missile (CALCM Block II Penetrator). The Air Force and Navy and HDBTD Program Analysis of Alternatives (AoA) was completed. DTRA's Hard Target Defeat Program will conduct a series of attack demonstrations for missile operations tunnel facilities in FY 2000.

- ***Key Active Defense Activities.*** Following a family of systems (FoS) approach, DoD continues to press forward with development and deployment of systems for improving active defense against ballistic and cruise missile threats. These Active Defense Systems are grouped into two general capability categories: Lower Tier (LT) and Upper Tier (UT) systems. LT systems (those that engage threats endo-atmospherically or inside the atmosphere) are the Patriot Advanced Capability-3 (PAC-3), the Navy Area Defense System (NADS) and the Medium Extended Air Defense System (MEADS). The first two, PAC-3 and NADS, are being developed by the United States without allied participation. They are scheduled for fielding starting in FY 2001 and FY 2003, respectively. In contrast, MEADS is a United States-Germany-Italy cooperative development effort with fielding slated to begin after FY 2010. UT systems (those that operate entirely or predominantly outside the atmosphere) are the Theater High Altitude Area Defense (THAAD), and the Navy Theater Wide (NTW) systems. The Airborne Laser (ABL), another missile defense system, is designed for intercepts during the boost phase of a threat missile trajectory. The PAC-3 system (minus the missile) is undergoing operational testing with a fielding decision to be made in FY 2001. As part of the NADS, the AEGIS weapons system is undergoing modifications and the Standard Missile Block IVA missile is being modified and tested in the Engineering, Manufacturing and Development (EMD) phase of the acquisition cycle. The ABL program has received delivery of its first aircraft, which is undergoing structural modifications before being fitted with laser equipment. The National Missile Defense (NMD) program has begun testing of the exoatmospheric kill vehicle at the Pacific Missile Range with two intercept test flights to date. The NMD program is proceeding toward a fourth quarter FY 2000 Deployment Readiness Review (DRR), to be followed by an Administration deployment decision. The Space Based Infrared System (SBIRS) is being developed to replace the existing Defense Support Program (DSP) to detect and track threat missile launches in order to provide the earliest opportunity to engage and negate the threat of NBC release over allied or friendly territory.

- ***CPRC Chemical Biological Defense Focus Group.*** The CPRC established the CBD Research, Development and Acquisition Focus Group in 1999. The purpose of the focus group is to identify common requirements and the appropriate technology development efforts to address them, resulting in a joint high-level roadmap for coordinated development of CBD technology. In the Spring of 2000, the focus group delivered to Congress a report on its CBD RD&A integration activities.

- ***DoD Medical NBC Training and Research and Development Programs.*** Medical NBC training programs are funded by the U.S. Army and provided by the U.S. Army Medical

Department Center and School (USAMEDDC&S), U.S. Army Medical Research Institute of Chemical Defense (USAMRICD), the U.S. Army Medical Research Institute of Infectious Disease (USAMRIID), Center for Health Promotion and Preventive Medicine (CHPPM), and the Armed Forces Radiobiology Research Institute (AFRRI). Training courses were offered at these facilities, at the requesting unit's site, and via distance education courses to meet unit requirements and take advantage of the characteristics of each training method. During FY 1999, over 45,000 Army, Navy, Marine, Air Force, DoD civilian, non-DoD, and non-U.S. personnel received some form of Medical NBC training via these courses. Among the personnel trained over the past year were members of the 10 WMD Civil Support Teams (CSTs) (formerly known as the National Guard RAID Teams).

- ***DARPA BW Defense Program.*** DARPA is pursuing the development and demonstration of new biological warfare (BW) defense capabilities. The *Advanced Medical Diagnostics Program* seeks to develop the capability to rapidly detect the presence of infection by biological threat agents. The *External Protection Program* focuses on destroying/neutralizing pathogens and toxins before they enter the body. The *Medical Countermeasures Program* is developing revolutionary medical countermeasures against pathogenic micro-organisms and/or their pathogenic products. Other BW defense programs are on-going.

- ***Assistant to the Secretary of Defense for Civil Support (ATSD-CS).*** In October 1999, the Secretary of Defense appointed an ATSD-CS as the Department's focal point for coordinating DoD support to civil authorities in domestic consequence management contingencies involving WMD. The ATSD-CS is responsible for providing civilian oversight for the development and implementation of planning guidance, policies, and procedures for the Joint Task Force for Civil Support, the newly established headquarters element subordinate to CINC, Joint Forces Command.

- ***Joint Task Force for Civil Support (JTF-CS).*** In January 1999, the CJCS directed CINC, U.S. Atlantic Command to coordinate the establishment of a Joint Task Force for Civil Support by 1 October 1999. The JTF-CS would have the "responsibility for planning and executing Military Assistance to Civil Authorities (MACA) for consequence management of WMD incidents with the U.S., its territories, and possessions." The JTF-CS was officially stood up on 1 October, concurrent with the re-designation of U.S. Atlantic Command to the U.S. Joint Forces Command (JFCOM), as directed by the President through the 1999 Unified Command Plan. As the DoD execution agent for WMD Consequence Management operations, JTF-CS plays a leading role in doctrine development, training and exercise management, and the promotion of interoperability.

Table 2: Highlights of DoD's Response to the Counterproliferation ACEs

DoD ACE Priority	Selected Accomplishments in DoD Counterproliferation Programs
1. Enable sustained operations in an NBC 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 the battlespace • Initiated RestOps ACTD • Continuing advances in NBC medical defense RDT&E • Continued RDT&E of Modular Decontamination System • Continued procurement of M17 Lightweight Decontamination System • Sorbent decontaminant transitioned and approved for incorporation in M295 • Completed installation, started optimization of Decade Radiation Test Facility
2. Detection, identification, characterization, and warning of CBW agents	• Accelerated development of advanced early warning BW agent detection systems • Continued RDT&E in simultaneous chemical and biological detection and identification
3. Medical protection against NBC agents, to include vaccine stockpile availability	• Fulfilled DoD-prescribed stockpile level of anthrax vaccine • Decision to vaccinate U.S. forces against anthrax; vaccinations under way • Trained more than 1,100 DoD medical personnel world-wide for WMD incident response
4. Collection, analysis, and dissemination of actionable intelligence to counter proliferation	• ATHENA counterproliferation intelligence "information space" under development to support mission planning and operations
5. Ballistic and cruise missile active defense	• THAAD and ABL components exercised in various field exercises • MEADS funding increased from $140M to $860M between FY 00 and FY 05; Proof-of-Principle Demo scheduled completion is FY03 • JLENS program restructure approved by OIPT and EXCOM, Jan. 99; contingency capability developed by FY10 • Two PAC-3 intercepts achieved, Missile low rate initial production (LRIP) decision made; on line for 4QFY01 FUE • NMD missile intercept achieved • Navy Area TBMD "Linebacker" software deployed on 2 ships • Flight testing of the SM-2 blk IVA is to begin in 2000; delivery of missiles to begin inFY02 • NTW continues with ALI flight test program and risk reduction activities
6. Support Special Operations Forces and defense against paramilitary, covert delivery, and terrorist NBC threats	• Continued development of specialized technologies and equipment prototypes to assist SOF and Explosive Ordnance Disposal teams in countering NBC/M threats • Solidified cooperation with Joint Service and SOCOM communities through an MOA • Force Protection facility assessments undergoing improvements with additional team and specialty personnel (CB defense, RN, and C4)
7. Target planning for NBC/M targets	• CBW agent defeat models for planning tools under development • Counterproliferation Analysis and Planning System (CAPS) • Dragon Fury/ATHENA
8. Detection, characterization, and defeat of hard and/or deeply buried targets with minimal collateral effects	• Completed construction on the full-scale Tunnel Defeat Demonstration test bed • Completed strike operations plan to obtain weapon delivery and effectiveness against tunnels
9. Detection, tracking, and protection of NBC/M and NBC/M-related materials and components	• Integrated Specific Emitter Identification device into Fleet • Conducted training sessions for Kazakhstan, Kyrgyzstan, Uzbekistan, Georgia, and Moldova border guards
10. Detection, characterization, and defeat of NBC/M facilities with minimal collateral effects	• CP1 ACTD completed; residual items included the AUP with the HTSF, TUGS, TMSF, and TFPM
11. Prompt mobile target detection and defeat	• Demonstrated operational utility of C4I systems for rapid dissemination of intelligence to users
12. Provide consequence management for terrorist use of NBC weapons (including civil support in response to domestic WMD contingencies)	• Established and executed the Domestic Preparedness training initiative, designed to enhance existing metropolitan response capabilities • Continued to leverage improvements and doctrine from DoD to emergency responders • Assisted enhanced installation hardness and response capabilities to meet CB terrorist threat • Stood up Joint Task Force-Civil Support/Joint Tactical Augmentation Cell.
13. Support export control activites of the U.S. government	• Reviewed more than 25,000 export license applications for military and dual-use technologies • Chartered the Space Launch Monitoring Division (DTRA/STS) to monitor compliance with space-related exports from the U.S. & the manufacture and launch of satellites & related items
14. Support inspection and monitoring activities of arms control agreements and regimes and other nonproliferation initiatives	• Technology R&D for CBW, NPT, and START implementation, monitoring, and verification • Continued inspection, monitoring, and escort support for NBC arms control treaties • Continued development of a global continuous threshold monitoring network and data fusion knowledge base and communications network for CTBT verification • Under CTR in the FSU, 380 ICBMs dismantled; 354 ICBM silos destroyed; 224 SLBM launchers eliminated; 57 heavy bombers dismantled

- ***Other Key DoD Activity and Program Accomplishments.*** Well over 100 DoD programs are strongly supporting national efforts to counter NBC/M proliferation and NBC terrorist threats. Over the past five years, substantial progress has been made in these programs and other activities to improve fielded counterproliferation, nonproliferation, and NBC counterterrorism capabilities and to establish the necessary groundwork for continued advances. Selected accomplishments of these activities and programs are highlighted in the table above.

Summary of Key DOE Activities

- ***Chemical and Biological Agent Detection R&D.*** This program was established in recognition of the Department's significant expertise in the chemical and biological sciences resident at the National Laboratories. The development and selection of R&D projects is closely coordinated with DoD and U.S. Intelligence. Projects have been funded based on the Laboratories' expertise and potential to address CBW military defense needs and the consequence management needs of civilian first responders.

- ***Detecting and Characterizing Worldwide Production of Nuclear Materials and Weapons.*** DOE, in support of DOE ACE priority 1, continued development of both remote and on-site complementary tools to detect and characterize foreign nuclear materials production activities. Acquisition of special nuclear materials is the most important step for a potential nuclear weapons proliferator to accomplish. The ability to detect production is, therefore, a critical proliferation prevention capability and the ability to detect such production remotely is a powerful deterrent to proliferation.

- ***Monitoring Worldwide Nuclear Testing.*** Fulfilling the President's Comprehensive Test Ban Treaty (CTBT) Safeguards program, the DOE's nuclear explosion monitoring mission is to carry out research and engineering for the U.S. agencies responsible for monitoring compliance with the CTBT and for operating the U.S. National Data Center for CTBT monitoring. DOE's program is broader than the CTBT and encompasses all nuclear explosion monitoring whether or not the CTBT comes into force. DOE provides technologies, algorithms, hardware, and software for systems that will detect, locate, identify, and characterize nuclear explosions in a cost-effective manner. In addition, DOE's CTBT R&D program supports the international Preparatory Commission in numerous ways, such as supplying experts in all technical areas including on-site inspection and supporting U.S. policy efforts. Program initiatives include: a) prototyping and commercializing infrasound and radionuclide monitoring systems; b) improving hydroacoustic data analysis; c) supplying on-site inspection technology expertise; d) building automated data processing tools including development of a Knowledge Base to manage regional and monitoring-station-specific parameters that can be accessed by automated processing systems and human analysts at the U.S. National Data Center; e) developing enhanced regional seismic propagation parameters for regions of high monitoring interest that will facilitate improved location and discrimination algorithms, especially for low-magnitude underground events; and f) continuing design and production of satellite-based nuclear detonation detection systems for deployment on Air Force Global Positioning System (GPS) and Defense Support Program (DSP) satellites. These satellite systems include optical, X-ray, gamma ray, neutron, and electromagnetic pulse (EMP) sensors.

- ***Materials, Technology, and Expertise in Securing Nuclear Materials in Russia and States of the Former Soviet Union (FSU).*** Material protection, control, and accounting (MPC&A) cooperation is now under way at more than 55 sites across Russia and the FSU, providing improved security for approximately 650 metric tons of weapons-useable nuclear material. This is enough material to produce more than 40,000 nuclear weapons. In addition, transportation, training, and regulatory development projects are under way to assist Russia in its nuclear materials management infrastructure.

    - *Initiative for Proliferation Prevention with Russia and FSU States.* The main objectives of this program are to identify and develop non-military applications for defense technologies and create long-term jobs for FSU weapons scientists and engineers. To date, more than 375 projects have been initiated, including more than 300 laboratory-to-laboratory projects and more than 75 industry cost-sharing projects, including 16 poised for commercialization in 2000. About 85% involve institutes in the Russian Federation, with the balance in Kazakhstan, Belarus, and Ukraine. While emphasis remains on nuclear technology, the scope of the program includes chemical and biological technologies as well. Because of this program, more than 3,000 former weapons-related technical personnel are now engaged in non-weapons-related projects involving materials science, biotechnology, instrumentation, and medical isotopes.

    - *Nuclear Cities Initiative.* DOE has launched the Nuclear Cities Initiative to help develop commercial enterprises in the closed cities which constitute the nuclear weapons complex. This program assists in the reconfiguration of the Russian nuclear weapons complex and furthers U.S. nonproliferation goals by helping Russian nuclear weapons experts to remain gainfully employed in the civilian workplace. Work in 1999 included the identification of technology that could form the basis for commercial development and improvement of telecommunications and business infrastructure conducive to commercial development. The program is currently active in Sarov, Snezhinsk, and Zheleznogorsk.

- ***Strengthening the Nuclear Nonproliferation Regime.*** DOE's efforts have helped to promote adherence to the Nuclear Non-Proliferation Treaty (NPT), increase the effectiveness and efficiency of the International Atomic Energy Agency (IAEA), and promote regional nonproliferation measures. DOE, with support from the National Laboratories, provided equipment and technical support to the IAEA Iraq Action Team. The Action Team did not have access to Iraq after December 1998, and DOE technical support concentrated on planning for ongoing monitoring and verification when the Action Team again has access to Iraq. DOE also worked with the IAEA to plan for verification of the completeness and accuracy of the North Korean (DPRK) nuclear declaration when the DPRK provides sufficient access for such an assessment.

Table 3: Highlights of DOE's Response to the Counterproliferation ACEs

DOE ACE Priority	Selected Accomplishments in DOE Counterproliferation Programs
1. Detection, tracking, and protection of NBC/M and NBC/M-related materials and components	• Providing Russia with modern safeguards systems and MPC&A training at its nuclear sites • Provided security upgrades at 16 civilian Russian sites and the Aktau BN-350 site in Kazakhstan • Security upgrades were completed on 33 railcars used to transport nuclear material • Near-complete canning of North Korea's spent nuclear fuel • Relocated nuclear material from Republic of Georgia to the United Kingdom
2. Support Special Operations Forces and defense against paramilitary, covert delivery, and terrorist NBC threats	• Maintaining NEST as an emergency response asset in the event of a nuclear or terrorism incident
3. Detection, identification, characterization, and warning of CBW agents	• Continued development of CBW atmospheric transport models for use in complex urban terrain • Continued development of DNA-based technologies for detecting biotoxins and microseparation technologies for detecting biotoxins and CW agents • Continued development of rapidly deployable, environmentally benign CBW decontamination technologies
4. Provide consequence management for terrorist use of NBC weapons (including civil support in response to domestic WMD contingencies)	• Developed environmentally sensitive decontamination techniques • Improved techniques for detecting BW agents • Developed models to predict hazard zones following an NBC attack in urban areas
5. Support inspection and monitoring activities of arms control agreements and regimes and other nonproliferation initiatives	• FORTE satellite is demonstrating radio frequency technologies for monitoring nuclear test ban treaties • Delivered operational prototype Automated Radio Xenon Sample Analyzer • Developed optically stimulated luminescence system for imaging warheads • Developed 2 techniques for more effective cooling of radiation detectors, making them more economical for remote field use
6. Detection, characterization, and defeat of NBC/M facilities with minimal collateral effects	• Demonstrated airborne infrared hyperspectral sensor and long-range LIDAR sensor
7. Collection, analysis, and dissemination of actionable intelligence to counter proliferation	
8. Support export control activites of the U.S. government	• Fiber optic neutron and gamma ray detector technology successfully transferred to commercial sector; currently in use on Austrian-Hungarian border • Equipped Astrakhan seaport with ability to detect/deter smuggling of nuclear material • Continued support for the Nuclear Suppliers' Group international export control agreement

Summary of Key U.S. Intelligence Counterproliferation Activities

Many U.S. Intelligence programs and special activities cannot be described in this document. Several key successes and activities are summarized below:

- ***Intelligence Community (IC) Support for Counterproliferation.*** In response to the CJCS' Missions and Functions Study and the Counterproliferation CONPLAN 0400, U.S. Intelligence continues to work closely with the Joint Staff in support of the CINCs. The Defense Intelligence Agency's (DIA) Office for Counterproliferation Support, which operates as the

Joint Staff's (J-2, Intelligence) executive agent for counterproliferation issues, continues to implement its CJCS-approved Military Intelligence Action Plan.

- ***Strategic Planning Process.*** U.S. Intelligence continues to improve its corporate strategic planning and evaluation process to support counterproliferation efforts. The strategic planning and evaluation process contributes to the National Foreign Intelligence Program (NFIP), the Joint Military Intelligence Program (JMIP), and the Tactical Intelligence and Related Activities (TIARA) Program and Planning Guidance. A major benefit of, and contribution to, this process has been the placement of a number of personnel from DoD within the Director of Central Intelligence's (DCI) Nonproliferation Center (NPC). This has had the beneficial effect of integrating intelligence considerations into DoD's planning for counterproliferation needs and actions. In addition, several people are on rotations with such organizations as DOS, Commerce, and Defense, the National Security Council (NSC), and the Central Measures and Signatures Intelligence (MASINT) Office (CMO).

- ***Operational Planning Process.*** DIA is linking counterproliferation intelligence production more directly to the CINCs planning process. DIA is taking guidance from the Joint Strategic Capabilities Plan and direction from the CINCs' J-2s, J-3s (Operations), and J-5s enabling U.S. Intelligence to more clearly define and satisfy the intelligence requirements necessary to support CINC counterproliferation contingency planning and operations.

- ***Intelligence Successes.*** Some intelligence successes that can be described here include:
  - Support to DOS efforts to provide actionable information to international regimes involved in inspection and monitoring activities, and to foreign governments and nonproliferation regimes in support of NBC/M interdiction activities;
  - Accomplishments in identifying elements and progress of Iran's program to develop the Shahab-3 missile;
  - Implementation of an expanded intelligence strategy against BW proliferation. This effort is well under way with a leading biotechnology industry expert now in place, serving as the DCI's Senior Science and Technology Advisor to increase the Community's ability to address BW issues;
  - Characterization of CW agents to allow assessments that provided a reliable intelligence baseline for DoD planners to make decisions on CW detection and medical countermeasure acquisitions;
  - Completion of more than 7,000 foreign end-use checks in support of the U.S. licensing and export process, checks that the Department of Commerce considered vital to its review of U.S. export licenses; and
  - Accurate assessment of the West Nile Virus outbreak in the northeastern United States that indicated the outbreak probably was not deliberately introduced.

CPRC Findings and Recommendations

The CPRC finds, as evidenced by the numerous program and activity accomplishments cited in this report, that the seriousness of NBC/M proliferation and NBC terrorist threats, and the need to enhance capabilities to counter them, are recognized throughout DoD (including OSD, the

Recommendations of the CPRC 2000

The Counterproliferation Program Review Committee Recommends:

- **Support President's FY 2001 budget for CPRC organizations**
  - Continue to address needs and requirements for CP and WMD terrorism as high-priority items in annual budget development processes
- **Enhance cooperation/coordination between CPRC and interagency WMD Preparedness Group (WMDP)**
  - DoD WMDP and CPRC membership participation
- **Continue close coordination of DoD, DOE, and Intelligence Community CP RDA activities/programs, including focus groups in:**
  - Validation standards for NBC hazard prediction models
  - Chemical Biological Defense R&D Focus Group
    - Defining the process for integrating the CBD technology base programs
    - Developing preliminary integrated technology base roadmaps
- **Incorporate outputs of CP Mission Support Senior Oversight Group (CP-MS SOG) and other working groups to improve CP mission support to the CINCs**
- **Expand dialogue with Intelligence Community to address CP support shortfalls**
- **Monitor activities/incorporate results of JCS HDBTDC Capstone Requirements process and OSD HDBTD S&T Integrated Product Team**
- **Support efforts pursuing international cooperation and partners in countering global NBC/M proliferation and NBC terrorist threats**

Figure 1. CPRC Recommendations for 2000

Joint Staff, Services, and CINCs), DOE, and U.S. Intelligence. Countering proliferation is now an established and institutionalized priority within each of the CPRC-represented organizations. The development of capabilities to counter NBC terrorist threats is also beginning to receive added attention throughout DoD, DOE, and U.S. Intelligence. These efforts reflect the President's firm commitment to stem NBC/M proliferation and negate terrorist NBC threats. Moreover, as decision makers, policy makers, and warfighters continue to reprioritize their nonproliferation, counterproliferation, and NBC counterterrorism policy and strategy objectives, the CPRC will continue to review related DoD, DOE, and U.S. Intelligence activities and programs to ensure that they continue to meet evolving needs and requirements. The CPRC's recommendations for 2000 are summarized in Figure 1 and discussed below.

The FY 2001 President's budget addresses priority activities and programs for countering NBC/M proliferation and NBC terrorism. *Therefore, the CPRC recommends that the FY 2001 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.*

DoD, DOE, and the Intelligence Community recognize 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 and conducting consequence management activities in support of the lead federal agency. In order to improve the integration of CPRC activities with the first response/domestic response community, the CPRC recommends that it *enhance cooperation/coordination between itself and the interagency WMD Preparedness Group (IA WMDP, which is led by the NSC).* Coordination will be achieved through a variety of mechanisms, but primarily through the ATSD-CS, who represents DoD on the IA WMDP, and through DoD, DOE, and Intelligence Community representation on the IA WMDP subgroups. It is through the subgroups that the CPRC-represented organizations directly interface with first responders.

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/programs, including the continued use of sub-, or focus groups.* The activities of the subgroup on validation standards for NBC hazard prediction models continues. In addition, the CPRC recently established the Chemical and Biological Defense RDA Focus Group which will be defining the process for integrating the CBD technology base programs and developing preliminary integrated technology base roadmaps.

The CPRC recommends that represented organizations incorporate the outputs of the Counterproliferation Mission Support Senior Oversight Group (CP-MS SOG) and other working groups into their program planning and activities. The CP-MS SOG is responsible for providing counterproliferation mission support requirements guidance and advice to a number of DoD organizations, while other working groups are responsible for identifying shortfalls, developing

counterproliferation capabilities and ensuring that militarily useful technologies are delivered to the users.

Recognizing the critical need of Intelligence in establishing an effective response to the proliferation of NBC/M , *the CPRC recommends expanding the dialogue with the Intelligence Community in order to identify counterproliferation priorities and address counterproliferation intelligence support shortfalls.*

The CPRC recommends that the activities and results of the JCS Hard and Deeply Buried Target Defeat Capability (HDBTDC) Capstone Requirements process and the HDBTD science and technology integrated product team (IPT) be incorporated with overall counterproliferation activities and programs. An HDBTD Capstone Requirements Document (CRD) is expected to be validated and approved by June 2000 and the HDBTD IPT kicked off its activities in March 2000. Integrating the activities and results of these processes will be a critical step in integrating interagency activities and programs to address this mission area.

Recognizing the global nature of NBC/M proliferation and NBC terrorist threats, *the CPRC recommends supporting the pursuit of international cooperative efforts to counter these threats by supporting expansion of existing cooperative activities in R&D, proliferation prevention, and NBC counterterrorism being conducted by DoD, DOE, and U.S. Intelligence 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 facilitate a broad interagency discussion among CPRC-represented organizations to encourage the establishment of additional international cooperative R&D efforts (beyond NATO), while 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 NBC/M proliferation and NBC terrorism.

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