



**Center for the Study of Weapons of Mass Destruction
National Defense University**



**2010 Annual Symposium
WMD and National Security:
*Implications of the Posture and Strategy Reviews***

Key Themes

This paper discusses key themes from the National Defense University Center for the Study of Weapons of Mass Destruction's tenth annual symposium, WMD and National Security: Implications of the Posture and Strategy Reviews, held at NDU on May 5-6, 2010. The views presented here do not necessarily reflect those of the National Defense University, the Department of Defense, or any other U.S. Government agency.

This paper was prepared by Paul Bernstein of Science Applications International Corporation.

The United States has adopted a new approach to strategic security designed to implement the President's agenda for reducing nuclear dangers and pursuing a world without nuclear weapons.

This agenda was first articulated by President Obama in his April, 2009 speech in Prague, and has now been operationalized in the 2010 Nuclear Posture Review (NPR). The NPR places highest priority on preventing nuclear proliferation and nuclear terrorism and reducing the role and numbers of U.S. nuclear weapons consistent with deterrence requirements. The NPR also calls for significant new investment to sustain a safe, secure, and effective nuclear arsenal without requiring the development of new nuclear warheads or underground explosive testing. The many policy initiatives embodied in the NPR reflect a broad-based effort to forge a new domestic and international consensus on nuclear weapons, nuclear proliferation, and nuclear energy.

Enhanced Global Nuclear Security. In Prague the President called for securing all vulnerable nuclear materials globally at the source as a principal means to prevent nuclear terrorism. The Global Nuclear Lockdown initiative seeks to accomplish this in four years. To mobilize others to advance this initiative, the President hosted a Nuclear Security Summit in April 2010 at which 46 governments committed to enhance the security of nuclear materials and take other steps to reduce the threat of nuclear terrorism. The United States will expand and accelerate international cooperative programs that minimize the use of highly enriched uranium in research reactors, dispose of surplus plutonium, secure and remove at-risk nuclear materials, upgrade on-site security, provide security training, establish Centers for Nuclear Security in partner countries, and help

foreign governments strengthen their capacity to counter nuclear and radiological smuggling.

A Stronger Nonproliferation Regime. Moving toward a nuclear free world will not be possible without corresponding progress in halting further proliferation. The immediate challenge is to roll back or prevent proliferation in problem states like North Korea and Iran while taking steps to make the nonproliferation regime a more effective instrument for preventing the additional spread of nuclear capabilities. Years of multilateral diplomacy have yet to reverse the nuclear ambitions and programs of these states. Yet dealing successfully with North Korea and Iran – whether through engagement or pressure – remains vitally important for several reasons: to deny nuclear weapons to hostile, aggressive regimes; to limit prospects for a “cascade” of proliferation in East Asia and the Greater Middle East; and to demonstrate the international community’s will to enforce compliance with the Nuclear Non-Proliferation Treaty (NPT). The recent review conference of the NPT, which occurred after the symposium, reaffirmed the treaty’s basic goals of nonproliferation, disarmament, and peaceful uses of nuclear energy, and produced a consensus final document that calls for a number of practical steps to achieve further progress in all three areas. But the outcome fell short of making the progress sought by the United States on some key issues, especially those related to strengthening nonproliferation rules. This is potentially significant given that a key premise of the U.S. policy to embrace the goal of nuclear abolition is that the international community – embodied, in part, by institutions like the NPT – will respond by delivering greater cooperation and stronger support to efforts to prevent and rollback proliferation.

Looking beyond the NPT, the United States will work to extend the international nonproliferation treaty regime by seeking ratification and early entry into force of the Comprehensive Test Ban Treaty (CTBT) and commencement of negotiations on a verifiable Fissile Material Cutoff Treaty (FMCT). These treaties would provide, respectively, qualitative and quantitative constraints on the ability of states to expand their nuclear weapons capacities, and thus are considered important to reducing reliance on nuclear weapons and limiting nuclear competition. Outside the treaty framework, a major proliferation challenge remains illicit trade in sensitive equipment and materials that could be used to develop nuclear weapons. Impeding this commerce more systematically requires improved capabilities to identify and disrupt covert proliferation networks and black markets, stronger export and technology controls, tighter border and anti-smuggling controls, and continued cooperative efforts to interdict suspect shipments and transfers. Toward this end, the NPR supports a stronger effort to implement United Nations Security Council Resolution 1540 and making the Proliferation Security Initiative a durable international institution.

A New Framework for International Civil Nuclear Cooperation. Civilian nuclear power will continue to expand globally as nations seek to meet growing electricity demand in ways that reduce the political, environmental, and climate risks associated with dependence on fossil fuels. The United States seeks to promote this expansion while managing its proliferation risks. Historically, the development of civilian nuclear power

infrastructures has entailed the spread of enrichment and reprocessing (ENR) technologies that can be diverted to the production of weapons-usable material. Going forward, the goal is to reduce incentives for countries seeking nuclear energy to acquire indigenous fuel cycle facilities by providing them with reliable and affordable nuclear fuel services based on some combination of the commercial market, international fuel banks, and multilateral guarantees for both fuel supply and disposition. The United States is pursuing specific concepts for a regulated global market for nuclear fuel through a reconfigured Global Nuclear Energy Partnership (GNEP), which now has 25 partner and 31 observer nations. Some countries have recently pledged to accept fuel cycle services from outside sources, though others have refused. Because such pledges are voluntary and reversible, skeptics of fuel service schemes question whether they can reliably limit the spread of the most sensitive technologies as nuclear power expands. Some are calling for alternative approaches that emphasize more robust restraints, such as legally binding commitments by states to either forego or phase out national ENR facilities under a Fissile Material Cutoff Treaty.

Revised Declaratory Policy. A principal objective of the NPR is to reduce the role of nuclear weapons in U.S. security policy and in deterring non-nuclear attacks. Toward this end, the NPR declares that “the United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the Nuclear Non-Proliferation Treaty and in compliance with their nuclear nonproliferation obligations.” This revised declaratory policy broadens Negative Security Assurances by eliminating exceptions for states allied with nuclear weapons powers and for chemical and biological attacks by states in compliance with their nuclear nonproliferation obligations. It puts on notice those whose compliance is in question that they remain subject to nuclear reprisal for some types of conventional, chemical, or biological attack against the United States or its allies. The United States is not, through this revised policy, stating a greater willingness to use nuclear weapons; such use remains an option only *in extremis*. Rather, the intent is to convey to problem states whose non-compliance poses a significant danger, such as Iran, that they are not free of nuclear risk simply because they remain in the NPT.

By clarifying the circumstances under which nuclear use would be contemplated, the intent, as well, is to complement other actions that demonstrate U.S. compliance with its NPT Article VI obligations and thereby reinforce the incentives of other states to abide by their nonproliferation pledges and remain non-nuclear. For some observers, the NPR’s revised declaratory policy is a welcome corrective to the anxieties created in recent years by perceptions, valid or not, that the United States was increasing the role of nuclear weapons in its security strategy. For others, the new policy creates added risk precisely because it narrows the circumstances of possible nuclear use. For still others, the new policy represents only a modest innovation and retains the essential features of earlier “calculated ambiguity” formulations, especially given language in the NPR reserving the right to revisit the biological weapons exclusion in light of developments in that threat.

Reduced Force Levels Through a Revived Arms Control Process. In addition to reducing the role of nuclear weapons, the NPR calls for reducing the size of the U.S. nuclear arsenal. The goal is to maintain strategic deterrence and stability at lower force levels, and the means to achieve this is a revitalized arms control process with the Russian Federation. This process has yielded the New START agreement (NST), which lowers aggregate limits for strategic warheads and delivery systems below those codified in the 1991 START agreement and the 2002 Moscow Treaty. For the United States, a principal virtue of NST is its flexibility: its central obligations are general in nature, allowing each side to compose the strategic force that best suits its needs. The limits on launchers should permit the United States to maintain much of its current force structure configured around the triad of land- sea- and air-based systems. U.S. officials point to a number of innovative measures in NST, including counting rules that will account for the actual number of warheads carried on deployed ICBMs and SLBMs (as well as public exchange of this data in aggregate), a “living database” of each side’s strategic forces, unique alphanumeric identifiers to facilitate monitoring of delivery vehicles, and more intrusive onsite inspections of re-entry vehicles than allowed under START. Together, these and related provisions will provide for transparency and predictability in Russian strategic nuclear forces. Finally, the treaty places no explicit constraints on the development, testing or deployment of current or planned missile defense systems. Nor does it place any practical constraints on current U.S. plans for deploying global strike capabilities.

Critics of the new treaty maintain that significant constraints on both missile defenses and global strike systems could, in fact, emerge, depending on how requirements and technology evolve. They argue that the limit on deployed launchers may be too low to ensure a resilient Triad and will encourage Russia to field land-based missiles with multiple warheads. They point out, as well, that NST does nothing to address Russia’s large numerical advantage in tactical nuclear weapons and abandons monitoring provisions that were important in verifying compliance with START.

Sustaining a safe, secure and effective nuclear arsenal. Some U.S. Senators have made clear that their vote to ratify New START will be conditioned on, among other things, a robust plan to sustain the existing nuclear arsenal and modernize the nation’s nuclear weapons complex. Indeed, there is wide acceptance of the importance of ensuring the reliability of remaining weapons as the overall stockpile is reduced and as the United States continues to eschew nuclear testing and the development of new warheads. In February, the President’s Budget for FY 2011 requested a 13.4% increase in funding for the National Nuclear Security Administration (NNSA) to support stockpile management and infrastructure modernization. The Administration also stated its intention to boost NNSA funding by \$5 billion over the next five years. As a core objective, the NPR outlines an approach to extend the lives of existing warheads consistent with the Congressionally-mandated Stockpile Management Program and U.S. nonproliferation objectives. In considering life extension solutions for specific warheads, strong preference will be given to refurbishing existing warheads or reusing components from different warheads; replacing nuclear components will be an option of last resort and will require Presidential and Congressional approval. The NPR also outlines investments

required to strengthen the science, technology and engineering base critical to stockpile stewardship, modernize the physical infrastructure of the nuclear complex, and maintain a highly skilled workforce. In May, subsequent to the symposium, the President provided to Congress a comprehensive, classified plan to sustain the nation's nuclear deterrent over the next decade. According to an official unclassified summary of the plan, it includes investments of \$100 billion to sustain and modernize delivery platforms, and \$80 billion to sustain the stockpile and modernize the weapons complex.

Ballistic missile defenses will emphasize a phased adaptive approach to short- and medium-range threats while maintaining and improving capabilities to defend against longer-range missiles.

The fundamental objectives of U.S. ballistic missile defense (BMD) policy remain to dissuade the acquisition of ballistic missiles, deter their use by diminishing their perceived utility, and defend against them if they are employed. By ensuring the dominance of defensive systems, the United States and its allies seek to deny an adversary the operational benefits of employing ballistic missiles and convince him to cease investing in these capabilities. The strategy to achieve these objectives, however, will change in significant ways as a result of the Administration's Ballistic Missile Defense Review (BMDR). The approach outlined in the BMDR is driven by growth in the short- and medium-range ballistic missile (SR/MRBM) threat and technology advances in systems such as the sea-based Aegis interceptor and new detection and tracking sensors. The dominant threat today to U.S. deployed forces and security partners comes from regional SR/MRBMs. At the same time, there is uncertainty as to when the U.S. homeland will face a credible long-range missile threat from states such as North Korea and Iran. As a result, U.S. missile defense efforts will emphasize countering the SR/MRBM threat while maintaining and improving the capability to defend the homeland.

The U.S. missile defense program is being rebalanced to reflect these priorities. For the foreseeable future, the current ground-based midcourse defense (GMD) system provides strong protection of the homeland against the projected long-range missile threat from North Korea and Iran. Going forward, this capability will be maintained at current levels and further developed technically in a deliberate manner. This will include completing the second field of Ground-Based Interceptor silos at Ft. Greeley, AK (without installing interceptors in these silos), deploying new forward-based sensors, increasing investment in systems to defeat countermeasures, and investing in GMD enhancements to hedge against unanticipated advances in the threat.

Funding is increasing for regionally deployable BMD systems such as Aegis Ballistic Missile Defense and Terminal High Altitude Area Defense (THAAD). These systems will form the backbone of a phased adaptive approach to BMD that will be tailored to the requirements and characteristics of particular regions, making use of the best available technology. Concepts for a phased adaptive approach are most fully developed for Europe, where, in the near-term, U.S. planning envisions using existing sea-based interceptors to defend parts of southeastern Europe, Turkey, and the Middle East,

supported by a forward-based sensor capability. For the 2015 timeframe, an improved version of the Aegis SM-3 interceptor, based both at sea and in transportable, land-based mode, is expected to provide greater area coverage and enhanced ability to discriminate between warheads and decoys. These interceptors will be supported by an airborne infrared sensor mounted on unmanned aerial vehicles that can be deployed in numbers over a wide geographic area. Significantly more advanced versions of the SM-3 missile are planned for the 2018 and 2020 timeframes; these will defend all of Europe, and the most advanced model is expected to have some capability against long-range missiles, including a potential Iranian ICBM, should this threat emerge.

This approach is not without technical and schedule risk; clearly, much will depend on when the more advanced versions of the SM-3 interceptor proceed to flight and intercept testing, and how well they perform. Beyond these considerations, a recent analysis of the SM-3 test program by two scientists well known for past critiques of U.S. BMD programs raises questions about the reliability of the technology.¹ The DoD has rejected this analysis and stands by its claims regarding the capabilities of the SM-3 interceptor as demonstrated in its test program.

To counter biological threats, national strategy is shifting toward greater emphasis on preventing such threats from occurring through concerted international cooperation.

There is growing recognition that the global spread of capabilities required to create and employ biological warfare agents is already well advanced and cannot be turned back. By some accounts, the rate of progress in synthetic biology is doubling every two years. These capabilities are inseparable from those driving innovation in the life sciences, which promise tremendous benefits to global public health. As a result, nonproliferation strategies focused on technology denial and control are of declining utility. Likewise, strategies that emphasize mitigating the impact of biological attacks, while feasible, are very costly and disruptive. Going forward, the United States will give increased priority to reducing the likelihood that the life sciences will be misused in ways designed deliberately to cause harm. *The National Strategy for Countering Biological Threats* (November 2009) establishes the framework for action. Recognizing that the threat is evolving in unpredictable ways that defy any particular set of countermeasures, and that those with ill intent will become increasingly capable of exploiting advances in enabling technologies, the National Strategy seeks to (i) improve global access to the life sciences so that nations are better prepared to detect and respond to infectious disease regardless of its cause; (ii) strengthen norms against the misuse of the life sciences and reinforce a culture of responsibility, vigilance and safety among those working in the life sciences; and (iii) implement a set of integrated actions to improve threat identification and assessment, pathogen security, interdiction, microbial forensics and attribution, and international dialogue, including through a revitalized Biological and Toxin Weapons Convention (BWC).

¹ George A. Lewis and Theodore A. Postol, "A Flawed and Dangerous U.S. Missile Defense Plan," *Arms Control Today*, May 2010, available at: http://www.armscontrol.org/act/2010_05/Lewis-Postol

The hypothesis to be tested is that intensified international engagement across the spectrum of biological challenges will reduce the impact of chronic and emerging diseases, provide greater transparency regarding BW-relevant capabilities (and possibly intent), and lessen the likelihood that dual-use technologies and disease agents will be used to wage biological warfare or launch bioterror attacks. The premise is that health research can be a powerful tool for engaging partners, and a good example of “soft power” deployed to enhance influence and security. A major vector for such efforts is the DoD’s Cooperative Threat Reduction (CTR) activity, the expansion of which is directed by the 2010 Quadrennial Defense Review (QDR). The Biological Threat Reduction (BTR) program consolidates dangerous pathogens into safe and secure repositories, enhances threat agent surveillance, detection and response systems, and provides for collaborative research with former Soviet states. Budget growth in this program will support, in the near-term, the establishment of laboratories in Azerbaijan, Georgia, Kazakhstan, and Ukraine, as well as development and implementation of electronic disease surveillance systems in these and other nations such as Armenia, Russia, and Uzbekistan. The QDR also directs expanded assistance to help a broader range of countries (such as Afghanistan and Uganda) develop the infrastructure and capabilities to report and track the outbreak and spread of disease. As these capabilities improve, the goal is to create a global network for biological surveillance and response. A principal vehicle for this is the Cooperative Biological Engagement (CBE) program, which works collaboratively with partner countries to mitigate risks posed by infectious and emerging pathogens and diseases, including U.S.-designated select agents and related materials. The CBE program coordinates with other U.S. government agencies to help partner states comply with international health regulations and guidelines, consolidate dangerous pathogens, implement sustainable disease surveillance, diagnosis, and response capabilities, and integrate national systems into global networks.

Realizing the national strategy’s full vision for managing biological threats will require the concerted efforts of multiple federal agencies, state and local governments, the private sector, international partners, and even families and individuals. At the international level, integrating the work and shaping the attitudes of the health and security communities will be a major challenge; the former does not always see the national security risks inherent in biology, while the latter tends to see the proliferation problem principally through a nuclear lens. Thus, not all international partners share a common understanding or sense of urgency regarding biological threats. Even experienced leaders may be unfamiliar with infectious disease, the nature of epidemics, and biological warfare or terrorism, and the important ways in which public health and security intersect.

Even as the National Strategy seeks to mobilize the nation and the world to act more aggressively to prevent attacks using disease agents from occurring, there is a continuing effort to fill critical gaps in warning and medical countermeasures. The Department of Homeland Security is working to improve the BioWatch program and expand the number of cities where it is deployed from 30 to 50, based on risk factors. One goal of enhanced early warning is to maximize the time available to deploy medical countermeasures. In turn, the countermeasures community is working to reduce the time required to make

medical products available following the release of a threat agent. It is also working on improved products. Since the 2006 QDR, the DoD and interagency and industry partners have been investing through the Transformational Medical Technology Initiative (TMTI) in the development of broad spectrum anti-bacterials and anti-virals to respond to bio-engineered pathogens and emerging infectious diseases. From May to December 2009, emerging TMTI capabilities were tested for responsiveness against the recent H1N1 (Swine Flu) outbreak, with promising results; two new investigational drugs will undergo clinical trials beginning in 2011.

The Swine Flu outbreak highlighted the government's inability to develop and distribute in a timely way a sufficient amount of disease-specific vaccine. In his 2010 State of the Union address, President Obama exhorted the biodefense community to make significant improvements in the nation's ability to develop, license, and procure countermeasures against both man-made biological attacks and naturally-occurring infectious diseases. Toward this end, interagency initiatives are seeking to transform the medical countermeasures enterprise to enhance its performance and the return on government investment. This will require a new model of government support for industry's development of drugs where market mechanisms have proven inadequate. Where necessary, the government must be more of a strategic partner rather than simply a source of funding. In other cases, a venture capital approach may enhance commercial viability.

Two of the Quadrennial Defense Review's six priority mission areas address WMD threats, and the QDR directs several near-term initiatives to fill key capability gaps.

Failed and Fragile States. The DoD must prepare for contingencies requiring the containment of WMD threats from states that are fragile or failing, or from ungoverned spaces where political authority is weak or non-existent. Such contingencies could well extend beyond the area of responsibility of a single Combatant Command, adding a degree of complexity to the mission to locate, secure, and interdict WMD and WMD-related materials and components. The QDR calls for a concept of operations for geographical containment that will require the armed forces to integrate the capabilities of interagency and coalition partners across multiple zones of engagement – inside and on the periphery of the state of concern, in the global commons, and at the point of destination (to include the United States).

Non-traditional Agents. Non-traditional chemical agents (NTA) pose unique challenges to existing defense capabilities. The QDR directs increased resources for research and development of countermeasures in collaboration with interagency partners, with the goal of fielding improved NTA defenses. Priorities for R&D include gaining a stronger understanding of the science underlying NTA and developing enhanced capabilities for detection, medical countermeasures, decontamination, and individual protection.

Nuclear Detection and Forensics. There is a recognized need to improve both passive and active detection capabilities, and to accelerate the development of standoff nuclear/radiological detectors for more effective wide area surveillance in the air and maritime approaches to the United States and in overseas contingencies. An additional

priority is to identify replacement technologies for Helium-3 for use in passive detection systems. Recognizing the importance of nuclear forensics to attributing and deterring nuclear attacks against the United States or its allies, the QDR directs additional resources to improve DoD's ability to collect air and ground samples following a nuclear detonation, and to perform laboratory assessments of samples and materials. The Department is investigating new platforms for air and ground sampling. DoD also supports interagency activities aimed at strengthening international cooperation in nuclear forensics, through both multilateral activities (e.g., Global Initiative to Combat Nuclear Terrorism) and bilateral initiatives (e.g., with Russia).

Consequence Management. Noting the importance of DoD preparedness to support civil authorities in response to attacks against the homeland, the QDR identifies as a high priority the fielding of faster, more flexible consequence management response forces for CBRNE contingencies. The goal is reduced response time, enhanced lifesaving capability, and greater operational flexibility. The original CBRNE Consequence Management Response Force (CCMRF), composed of 5,200 personnel, will be restructured for enhanced rapid response capability. The second and third CCMRFs will be replaced with smaller units with a command, control and communications mission. To strengthen regional response capabilities, DoD will also create a National Guard Homeland Response Force for each of the ten Federal Emergency Response Agency regions. The Department is also considering how to enhance foreign consequence management capabilities in support of allies and partners.

WMD Elimination. The 2006 QDR established Joint Task Force – Elimination (JTF-E), to be deployed on an as-needed basis, as a step toward enhancing preparedness for WMD elimination operations. To further develop planning, training and execution capabilities, the 2010 QDR directs the establishment of a standing Joint Task Force Elimination Headquarters with increased nuclear disablement, exploitation, intelligence, and coordination capabilities. This jointly-manned standing organization will have the capacity to train and exercise in multiple regions, conduct pre-exercise activities in response to suspected or emerging threats, and deploy small units to support COCOM staffs. The standing task force will institutionalize the WMD Elimination mission as a routine regional operation, establish a focal point for COCOM support, and provide a cadre of trained subject matter experts.

DoD's Cooperative Threat Reduction (CTR) program is evolving from a post-Cold War activity focused on dismantling Soviet WMD capabilities to a more diverse toolkit for global security engagement directed at new types of threats and a broader set of countries.

This evolution envisions the CTR program as a key pillar in a proactive national strategy to prevent hostile states and terrorist or violent extremist organizations from acquiring the materials and expertise that would enable possession and use of WMD. The emphasis is on forging new partnerships with nations in high risk regions to implement tailored, sustainable programs that employ both "hard" and "soft" capabilities to achieve focused

risk reduction and nonproliferation cooperation. The President's budget request for Fiscal Year 2011 provides for a 23% increase in funding for CTR.

As the program expands geographically and functionally, the DoD is seeking to adopt a risk-based approach to determine program priorities, and toward this end recently began developing a semi-quantitative risk methodology. Risk factors include not only those emanating from the intentions and capabilities of state and non-state actors, but also those resulting from the increasing availability, on a global scale, of WMD-applicable knowledge, technologies and facilities (e.g., life science laboratories and other biotechnology activities). Robust risk assessments will draw on information available to a broad set of interagency, international, and non-governmental partners, as well as innovative analytic tools. In turn, meaningful metrics must be developed to judge both the tangible and intangible impact of CTR activities.

Additionally, the program must be more agile and flexible. In order to address emerging challenges effectively, the CTR program must be able to identify risks and threats as early as possible, and respond quickly with the right expertise and programmatic solutions. In turn, this requires a greater degree of agility in recognizing opportunities and executing programs, and greater flexibility in managing people and resources. Responsiveness, efficiency, and value can be enhanced through appropriate legislative frameworks, funding mechanisms, and strategic planning processes. As its geographical scope expands, the CTR program also needs to work more closely with the Combatant Commands (COCOM) and find ways to leverage existing relationships between COCOM staffs and regional governments to determine where threat reduction efforts may be needed and to execute tailored programs successfully.

Increasingly, the warfighter and combat support community understands countering WMD as requiring more than just the application of traditional military power, and as a mission demanding the integration of interagency and international partner capabilities.

United States Central Command (CENTCOM) is a good example. A priority task for the command is to build the capacity and interoperability of our partners to prevent and, if necessary, deter and respond to the use of WMD. Capable partner governments are critical in this complex, dynamic theater where both state and non-state WMD threats are cause for concern, and where the growing interest in nuclear energy poses potentially significant proliferation risks. To some degree, interest in nuclear power may reflect a hedging strategy in response to Iran's continued pursuit of nuclear capability. CENTCOM leaders perceive a possible nuclear "tipping point" that may confront regional governments with difficult choices as they face the prospect of a nuclear or "near-nuclear" Iran. Should they seek accommodation with Tehran, acquire their own deterrent capabilities, or remain partners with the United States? Helping these governments reinforce their security relationships with Washington requires sustaining confidence in U.S. leadership and the cooperative activities that build operational capacity. In CENTCOM, where the United States has no formal alliances, these activities proceed under a wide variety of bilateral arrangements. Linking these agreements to

form multilateral networks – what the Command refers to as “multi-bilateralism” – provides the basis for improving regional capabilities in areas such as shared early warning, missile defense, command and control, NBC defense, and maritime security. The command is engaged in comprehensive planning efforts to deter and defeat WMD threats. Here, too, the focus is on coalition operations, and expanding the menu of options available to senior leaders in considering the use of military power.

United States Northern Command (NORTHCOM) is working to establish a comprehensive homeland and hemispheric defense architecture in collaboration with North American partners to prevent, deter and defeat common threats. Central to this mission is building partner capacity in Mexico and enhancing coordination and interoperability with Canada in countering terrorism and the trafficking of WMD materials. In turn, advancing these relationships requires NORTHCOM to partner effectively in the interagency; in the past year, the Command has worked with the Department of State, U.S. Agency for International Development, Federal Emergency Management Agency, the Environmental Protection Agency, and the U.S. Geological Survey to strengthen policies and procedures for preparing for and responding to contingencies such as pandemic influenza, mass exposures to dangerous chemicals, and other man-made or natural disasters. Through Joint Task Force-Civil Support and CBRNE Consequence Management Response Forces (CCMRF), NORTHCOM is prepared to provide unique command and control and disaster response capabilities to augment the efforts of state and local first responders. Additionally, NORTHCOM is responsible for ballistic missile defense in its area of responsibility and other areas as directed. These capabilities continue to mature, and the Command is now working with other Combatant Commands to implement the phased adaptive approach to missile defense with respect to global force management, operational planning, and resource requirements.

United States Special Operations Command (SOCOM) is tasked to synchronize planning for global operations against terrorist networks, take direct and indirect action against violent extremism, and train and equip indigenous forces to enable them to support ongoing counterterrorism operations. Countering WMD is a mandated part of SOCOM’s mission, and the pursuit of WMD by violent extremist organizations has focused the command’s attention on the pathways by which such weapons may be acquired and the prospects in certain states for a “loose nukes” contingency. Preventing such a scenario from unfolding is the main objective, and toward this end efforts are being made to help nuclear states strengthen the security of their nuclear weapons and assets. In parallel, SOCOM is working actively to map and disrupt or defeat the global networks that support illicit trafficking in and financing of WMD-related materials and technologies. Responding to a loose WMD contingency will pose major operational and political challenges. Overcoming these challenges requires a more effective planning construct to orchestrate a national-level response.

Developing this construct is a priority task in 2010 for *United States Joint Forces Command (JFCOM)*. As joint force provider, joint force trainer, and joint force experimentation lead, JFCOM takes account of existing and emerging WMD threats and

the impact they may have on the joint force and its ability to achieve strategic and operational objectives. As part of its experimentation work, JFCOM's "CWMD-Nuclear" Project will develop an informal operating concept and organizational construct to enable DoD to more effectively prevent, protect against, and respond to the use of nuclear weapons by terrorists, surrogates of state actors, and other non-state actors such as insurgents and militias. The goal is a stronger alignment of strategy, guidance, roles and responsibilities, and required capabilities.

Defense Threat Reduction Agency (DTRA) is a critical enabler of the warfighter's countering WMD mission. DTRA is the principal combat support agency focused on the countering WMD and nuclear deterrence missions, and the focal point for executing DoD cooperative threat reduction activities under its Nunn-Lugar Global Cooperation program. The Director, DTRA, also serves as the Director of the U.S. Strategic Command Center for Combating WMD, which assists STRATCOM with the synchronization of counter-WMD planning and the coordination of related DoD activities across the Combatant Commands. DTRA works closely with the Commands to enhance their technical and operational capabilities across the strategy pillars of nonproliferation, counterproliferation, and consequence management. The agency also works with interagency, private sector, academic and international partners on a broad range of science and technology, operational, political-military, and programmatic challenges confronting the countering WMD community. The importance attached to these efforts is reflected in the 18% increase in funding requested for DTRA in the Fiscal Year 2011 budget. This would represent the first significant growth in the DTRA budget since the agency was established in 1998. These additional resources will be directed toward the following priority activities, several of which are highlighted in the 2010 QDR: securing vulnerable nuclear materials, biological threat reduction, arms control monitoring and verification technology, combating WMD terrorism, nuclear detection, DoD and interagency reachback support, and a specialized countering WMD analysis cell operated jointly with the Defense Intelligence Agency.