



APRIL 23, 2013

HEARING TO RECEIVE TESTIMONY ON PROLIFERATION PREVENTION PROGRAMS AT THE DEPARTMENT OF ENERGY AND AT THE DEPARTMENT OF DEFENSE IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2014 AND THE FUTURE YEARS DEFENSE PROGRAM

UNITED STATES SENATE, COMMITTEE ON ARMED SERVICES, SUBCOMMITTEE ON EMERGING
THREATS AND CAPABILITIES

ONE HUNDRED THIRTEENTH CONGRESS, FIRST SESSION

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Assistant Secretary of Defense for Global Strategic Affairs
Department of Defense

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- **Mr. Kenneth A. Myers III** [\[View PDF\]](#)
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Defense Threat Reduction Agency
Department of Defense, and
Director
U.S. Strategic Command Center for Combating Weapons of Mass Destruction
- **Ms. Anne Harrington** [\[View PDF\]](#)
Deputy Administrator for Defense Nuclear Nonproliferation
Nuclear Security Administration
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**OPENING STATEMENT OF SENATOR KAY R. HAGAN,
CHAIRMAN**

Senator HAGAN. Good afternoon. The Emerging Threats and Capabilities Subcommittee meets today to review the President's fiscal year 2014 request for nonproliferation programs at the Departments of Defense and Energy. We plan to have a hard stop here at 3:20 p.m. so that we can adjourn to the Office of Senate Security in room 217 of the Capitol for a closed session with our witnesses today.

In the interest of time, I want to ask that the witnesses, if you would give a short, 2 minutes or so opening statement. We have your written testimony and we obviously have that for the record.

We are joined today by three expert witnesses to help us understand the programs under way in both of these Departments.

Madelyn Creedon is the Assistant Secretary of Defense for Global Strategic Affairs, who is responsible for the policy aspects of these programs at DOD, and we welcome you back to the Senate Armed Services Committee.

Ken Myers is the Director of the Defense Threat Reduction Agency at the Department of Defense, which is focused on reducing the threats from weapons of mass destruction. The agency is responsible for executing the Cooperative Threat Reduction program. He is also the Director of the U.S. Strategic Command Center for Combating Weapons of Mass Destruction, located at the agency.

Anne Harrington is the Deputy Administrator for Defense Nuclear Nonproliferation at the National Nuclear Security Administration of the Department of Energy.

We thank you all for your service and thank you for joining us here today.

For fiscal year 2014, the Department of Defense and Energy propose to spend on the order of \$2.6 billion in nonproliferation activities to help stem the flow of the weapons of mass destruction. For the past 20 years, the Cooperative Threat Reduction, or CTR, has achieved remarkable accomplishments in Russia and the former Soviet states in helping to secure or to destroy the world's largest stockpiles of weapons of mass destruction and their materials. I understand a new CTR umbrella agreement between the U.S. and Russia is under negotiation and we would like to hear the administration's objectives for the new agreement.

Also, we are now transitioning many CTR programs to countries in Southeast Asia, the Middle East, and Africa, and for the first time we may see as much CTR funding outside the former Soviet Union as in it.

We'll want to hear what strategic approach you have implemented to assess how these funds would be most effectively spent.

For instance, the Cooperative Biological Engagement Program now has 61 projects in 19 countries. Within DOE's National Nuclear Security Administration, I understand the mixed oxide, or MOX, program is considering a quote, "strategic pause" due to significant cost overruns of as much as \$3 billion and a 3-year delay. The purpose of the 14-year-old program is to turn 34 metric tons of excess weapons-grade plutonium into commercial reactor fuel, with the Russians doing the same, a laudable nonproliferation goal. My understanding is the Department is now estimating a life cycle cost of up to \$27 billion over 15 years to produce the MOX

fuel. So I look forward to hearing from Ms. Harrington what the Department is thinking with the existing MOx program and how long it will take the Department to get back to Congress with the results from the reevaluation of this program.

Again, thank you for being here today. We look forward to your testimony, and I want to turn to my colleague and ranking member, Senator Fischer, for her comments.

Senator Fischer.

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STATEMENT OF

MS. MADELYN R. CREEDON
ASSISTANT SECRETARY OF DEFENSE
GLOBAL STRATEGIC AFFAIRS

BEFORE THE SENATE
COMMITTEE ON ARMED SERVICES
SUBCOMMITTEE ON EMERGING THREATS AND CAPABILITIES

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Introduction

Madam Chairman, Ranking Member Fischer, and Members of the Subcommittee, I am pleased to testify today about the progress the Department of Defense (DoD) has made in carrying out a wide range of activities to counter weapons of mass destruction (WMD). We continue to pursue aggressively the President's vision for countering WMD by keeping WMD out of the hands of terrorists and states of concern, locking down dangerous nuclear and biological materials, eliminating chemical weapons, destroying legacy weapons, and building capabilities and conducting operations to prevent acquisition, contain and roll back threats, and respond to WMD crises.

I am pleased to be here today with two colleagues whose efforts are critical to addressing these important issues: Mr. Kenneth A. Myers III, the Director of the Defense Threat Reduction Agency (DTRA); and Ms. Anne M. Harrington, the Deputy Administrator for Defense Nuclear Nonproliferation for the National Nuclear Security Administration (NNSA). Together, we are supporting a whole-of-government effort to make the United States, and the world, safer from WMD threats.

In my role as the Assistant Secretary of Defense for Global Strategic Affairs (GSA), I oversee all Defense efforts to counter WMD, as well as nuclear, missile defense, space, and cyber policies. The great team at GSA develops defense strategies and policies, sets Departmental priorities based on guidance from the Secretary of Defense, and manages interagency and international relationships for the Department in these functional areas. Under the leadership of Mr. Myers, DTRA implements GSA's countering WMD guidance through the management and execution of the Cooperative Threat Reduction (CTR) Program and other non- and counter-proliferation activities. Mr. Andrew Weber, Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, provides acquisition guidance and oversight for DTRA's work. Together, we work with the Joint Staff, the Combatant Commands, the Services, national labs, and other implementing partners to execute DoD's counter WMD responsibilities. DoD also works closely in this area with Ms. Harrington and her team at NNSA, as well as other interagency partners.

Our mission is straightforward—DoD is working to ensure that no additional states or non-state actors acquire WMD; those possessing WMD do not use them; and if WMD are used, the effects are minimized. In a constrained fiscal environment, we are focusing our efforts on preventing acquisition and countering the most likely threats. Accordingly, we are emphasizing early cooperative action in order to shape the security environment and disrupt proliferation networks through pathway defeat—deliberate actions taken against actors of concern and their networks to delay, disrupt, destroy, or otherwise complicate WMD-related activities. We are prioritizing capabilities that counter operationally significant risks and that are not resident elsewhere in the U.S. Government, in order to avoid wasteful or duplicative expenditures.

WMD Challenges

The current strategic environment presents a number of WMD challenges stemming from those who possess WMD and those seeking to acquire new and expanded capabilities, including

North Korea, Iran, Syria, and certain non-state actors. Both state and non-state actors who are actively seeking or already possess WMD present a significant intelligence and defense planning challenge. Their strategic intentions, proliferation pathways, decision-making processes, and capabilities are difficult to assess and influence. Their relative risk tolerance and isolation can create further challenges for the United States to dissuade and deter these actors from acquiring or using WMD. For example, North Korea has recently taken a series of provocative and destabilizing actions and Iran continues to defy the calls of the international community for transparency into its nuclear activities and a demonstration that these activities are solely for legitimate, peaceful purposes. Certain non-state actors continue to seek WMD, and WMD technologies.

Technological advances and the availability of expertise, materials, and technology through a variety of networks increase the likelihood that both state and non-state actors will gain access to WMD and related capabilities. Those who provide support—including WMD and related capabilities—to other governments and non-state actors also threaten U.S. security and destabilize the international system. Furthermore, such proliferation increases the likelihood that a recipient may employ WMD independently or as a proxy.

Despite significant progress in securing vulnerable WMD materials, new avenues for access continuously emerge. Fragile or failed states with WMD programs or capabilities are particularly ripe for exploitation. One of our most worrisome scenarios is the prospect of a crisis involving the theft or loss of control of weapons or material of concern that results in the WMD ending up in the hands of hostile actors. Instability in states pursuing or possessing WMD or related capabilities could lead to just such a crisis. The potential convergence of violent extremism, political instability, and inadequate WMD security is also a most troubling scenario. If highly motivated non-state actors determined to obtain and employ WMD took advantage of these types of situations, they would no doubt be difficult, if not impossible, to deter.

Violent extremists are expanding their geographic reach into ungoverned territories. Recent events in Mali involving Al Qaeda and affiliates demonstrate this problem. Such territories could be used to support illicit activities, including undetected and unwarned development and proliferation of WMD-related capabilities. These safe havens enhance adversaries' freedom of action and make our task all the more difficult.

Addressing the Challenges

When making strategic resourcing decisions, DoD consistently has protected countering WMD (CWMD) efforts. In today's fiscal environment, however, our goals will be tougher than ever to sustain. We are accepting increased risk in areas where WMD use is less plausible, less feasible, or would have limited effects, allowing us to prioritize more likely scenarios for WMD acquisition and use.

To maximize effectiveness and because this is not a DoD mission alone, we are incorporating our CWMD efforts, as reflected in the broader plans and operations within DoD, across the U.S. Government and with international partners. Partnering serves as a force multiplier: it extends DoD's strategy and capabilities through increased interoperability with other U.S. departments

and agencies, allies and friends, and international bodies. DoD seeks to leverage and enhance, but not duplicate, capabilities resident elsewhere in the U.S. Government or activities best executed by our interagency partners, for which other agencies and departments have lead responsibilities. DoD stands ready to support these other agencies and departments as needed.

Today's complex security environment presents significant challenges that require increased emphasis on early cooperative action to shape the environment and disrupt networks. The dynamic structures of WMD networks present challenges, but they also offer opportunities for exploitation through flexible, innovative, and adaptive approaches that target these networks and their hubs. Understanding, monitoring, and targeting these networks can help deter acquisition, bolster prevention activities, and reduce reliance on measures that carry higher political, military, and humanitarian risks.

Deterrence strategies supported by credible CWMD capabilities will remain an effective approach against many WMD-armed adversaries. Toward that end, the Department equips and trains forces and develops capabilities that can be employed in three broad categories: 1) prevent acquisition, 2) contain and roll back threats, and 3) respond to WMD crises.

1. Preventing Acquisition

To further reduce incentives for WMD acquisition, DoD continues to support the efforts of our State Department colleagues and others to strengthen international treaties, conventions, and regimes, and to implement sanctions. We support discussions among the permanent five (P5) states of the UN Security Council to meet our obligations under the Nuclear Nonproliferation Treaty and to make progress under the Action Plan agreed to at the last Nuclear Nonproliferation Treaty Review Conference. In this context, DoD is developing, in conjunction with interagency partners, common approaches to reporting and definitions. Such confidence-building measures, when reciprocated by other members of the P5, increase transparency and stability among nuclear weapon states. DoD also supports efforts to begin negotiating a Fissile Material Cutoff Treaty (FMCT). We support the P5's moratorium on the production of new fissile material for use in nuclear devices, and believe its continuance is part of the foundation that is needed in order to make progress on an FMCT. To meet U.S. obligations under the Chemical Weapons Convention, DoD has destroyed almost 90 percent of our chemical weapons stockpile while continuing to assist other states in the destruction of their stockpiles. We also continue to support U.S. transparency efforts in the context of the Biological and Toxin Weapons Convention (BWC) and to uphold longstanding U.S. commitments under the BWC Confidence-Building Measures by reporting on biodefense research activities taking place at DoD biological facilities.

Another example of our commitment to preventing proliferation of WMD is our support to an interagency effort to develop and implement a U.S. policy for Dual Use Research of Concern (DURC). As was highlighted during national and international discussions in 2012 concerning H5N1 avian influenza research, biological research, while critical for the betterment of the health, welfare, and safety of mankind, also has the potential to be misused. As a federal research funding agency, DoD has now implemented the 29 March 2012 "United States Policy for Oversight of Life Sciences Dual Use Research of Concern," and reviews the life sciences

research it funds and conducts to ensure that dual use issues are adequately addressed from the outset. In addition, we continue to actively engage in interagency efforts to further develop additional policies in this area as our understanding of this challenge evolves.

DoD is raising barriers to the acquisition and proliferation of WMD through both bilateral and multilateral cooperation with partners. This May, our Polish allies will host meetings marking the 10th anniversary of the Proliferation Security Initiative (PSI). Through its exercises and leadership in PSI's operational experts group, DoD has steadily worked with partners to address all aspects of the proliferation threat. Twenty-nine partners participated in our most recent exercise, LEADING EDGE, which was co-hosted by the United Arab Emirates and included full maritime, air, and land interdiction activities. PSI is an activity, not a program, and as such has no dedicated budget. In a time of increasing resource constraints, previous methods of funding PSI activities are becoming less available, and it is time we addressed the need for a dedicated PSI funding line.

DoD is also engaged in what we refer to as pathway defeat activities. These activities seek to identify various pathways that are or could be used to conceptualize, develop, acquire, or proliferate WMD and related capabilities and develop methodologies to deny, delay, disrupt, or destroy these WMD pathways. The pathway defeat work focuses on the specific nodes and linkages in the networks that constitute an adversary's WMD acquisition pathway. By disrupting these networks, we raise barriers to acquisition and enhance efforts to detect, identify, and respond to acquisition attempts, especially those shielded by legitimate activities such as nuclear power generation; chemical, biological, radiological, and nuclear (CBRN) defensive programs; biomedical research; and the global chemical industry.

2. Containing and Rolling Back Threats

DoD is containing and rolling back WMD proliferation threats by restricting the supply of WMD-relevant materials and technologies, including delivery systems, available for illicit uses. One of the most important tools we use to accomplish this is the CTR Program. The President recently commemorated CTR on its 20th anniversary. He stated, "This is one of our most important national security programs. And it's a perfect example of the kind of partnerships that we need, working together to meet challenges that no nation can address on its own... That's why, over the past four years, we've continued to make critical investments in our threat reduction programs—not just at DOD, but at Energy and at State. In fact, we've been increasing funding, and sustaining it. And even as we make some very tough fiscal choices, we're going to keep investing in these programs—because our national security depends on it." Among other achievements in securing and eliminating WMD materials and in preventing WMD proliferation, the CTR Program can take credit for assisting three former members of the Soviet Union in deactivating and properly disposing of over 13,000 nuclear warheads.

As WMD threats have changed since the end of the Cold War and dissolution of the Soviet Union, so has the CTR Program's focus and partnerships. In support of this geographic and functional expansion, the President has requested \$528.5 million in fiscal year 2014 for DoD CTR activities, an increase of approximately \$9 million over the fiscal year 2013 appropriated level. These funds will continue ongoing partnerships in the former Soviet Union, support new partnerships in Africa, and expand work in the Middle East, South Asia, and South East Asia. It

is important to note that CTR remains a threat-based program focused on supporting DoD's mission. To strengthen our stewardship of program resources, the Department is developing a comprehensive metrics approach to improve program management and ensure investments directly advance strategic threat reduction goals. When fully implemented, CTR Program metrics will track material inventory, training activities, equipment utilization, and major program milestones, such as the completion of transfer of custody. These inputs will help us track project plans against our completed activities in a tailored way. Importantly, this will improve the dialogue between Congress and the Department of Defense when evaluating the success of the DoD CTR Program. Additional information on the CTR metrics will be included in the CTR annual report to Congress, which will be submitted later this spring.

The Secretary of Defense, with the Secretaries of State and Energy, recently approved the expansion of CTR activities to the Middle East. Through enhanced border security and threat reduction train and equip support, CTR will work with partner countries to help mitigate the threat posed by the potential proliferation or use of Syria's chemical weapons or materials and other WMD. With this new authority the CTR Program is working with our regional partners to increase their awareness of the threat posed by the potential proliferation or use of Syria's chemical weapons, materials, or other WMD; build and expand border protection capabilities to prevent illicit transfers of chemical weapons materials; and operate in a potentially contaminated environment. The CTR Program is proving to be exceptionally valuable to our partners and to existing partnerships in the face of this emerging threat. For example, CTR is funding Phase 2 of the Jordan Border Security Project, which will integrate technology and training to increase Jordan's visibility and ability to mitigate proliferation along the remaining 256-kilometer stretch of border with Syria.

Another focus area for the CTR Program is to enhance maritime domain awareness capabilities for maritime surveillance in Southeast Asia, providing the ability to detect illicit transfers of WMD materials and strategic delivery systems. In particular, we are engaging Vietnam to improve maritime law enforcement awareness and security. This program is working to improve logistics and maintenance as well as providing equipment and developing a training center to enable more efficient efforts to thwart illegal smuggling of WMD and related equipment.

CTR is also countering biological threats. CTR's partnerships decrease the vulnerability of biological agents to theft by nefarious actors and increase partners' abilities to detect, diagnose, contain, and report outbreaks of public health and national security concerns. Our hope is that current partners will, in the future, become sources of best practices and resources for other countries looking to improve their domestic biological security, outbreak surveillance, and response capabilities. GSA has briefed this committee in the past on improved biosecurity partnerships in East Africa, and I am proud to inform you that key facilities housing some of the world's most dangerous pathogens are now secure thanks to collaborative efforts among partner countries and the Departments of Defense and State.

But gates and guards are not the only solution. We are also working to enhance the culture of security within the life sciences community. Insufficient security leaves us all vulnerable to misuse of biological material. As new challenges of dual-use and global access to

biotechnologies demand new approaches, we are developing non-traditional partnerships, including collaboration with the World Health Organization (WHO) to leverage their technical capabilities and global networks. While a DoD-WHO partnership may seem counterintuitive to some, we do in fact share many biosafety and biosecurity objectives. The WHO's International Health Regulations specifically call out these areas as requirements and sets guidelines for active and passive biological surveillance, which are the best means for detecting naturally occurring outbreaks and biological terror events. Compliance with these guidelines reinforces DoD objectives and enhances U.S. and international security. Direct and continued engagement with the WHO and similar organizations provides CTR with significantly more opportunities to enhance a culture of security within the existing life sciences communities that can recognize, report and aid in countering the grave threat posed by biological weapons development or use. Further, partnership with such organizations increases the likelihood that CTR-provided investments will be sustained in the future.

I highlight these efforts in particular to note new levels of responsiveness in the CTR Program as it expands. We are advancing our approaches to threat reduction in appreciation of the dynamic threat environment. We have pushed the envelope, and we will continue to do so where we believe it will reduce WMD threats.

DoD will also encourage and support—through direct and indirect assistance—states that have already committed to secure and dispose of WMD and reduce or dismantle WMD programs. In Libya, the CTR Program is working now to increase the safety and security of Libya's recently-discovered chemical weapons stockpile, and we are also working to finalize a destruction agreement.

Indeed, even beyond the projects and partnerships mentioned here, we are considering other, novel applications of the CTR Program. One is to transport vulnerable nuclear and radiological materials to more secure locations for storage or reprocessing. The Departments of Defense and Energy collaborate closely in threat reduction, drawing on each department's respective strengths. The Department of Energy is negotiating high-priority transfers of material to more secure locations for storage or reprocessing, and DoD has specific capabilities and training for secure transportation internationally. We are, therefore, working cooperatively to achieve overall U.S. objectives in nuclear and radiological security.

Touching briefly on the future, DoD's CTR program is at a transition. We are now funding roughly as much work outside of the former Soviet Union as we are inside the former Soviet Union. Based on emerging threats, our aperture has widened substantially and we are increasing the flexibility of the program to be successful as a global effort. Developments in Libya and the Middle East this past year exemplify this requirement. We look forward to engaging with you and your congressional colleagues in the future about how to continue this update to the CTR program and increase its effectiveness.

3. Responding to Crises

DoD works to manage WMD risks emanating from hostile, fragile, or failed states and safe havens. Where hostile actors persist in making significant progress toward acquiring WMD, the

Department is prepared to undertake or support a full range of actions to stop such capabilities from being fully realized. We will convey to fragile states that proliferation undermines security and stability and work with them to enhance WMD security. We must deny non-state actors the means to manipulate and acquire the tools and resources of state actors and prevent them from achieving territorial freedom of action.

The Department is continuing to develop tailored plans and capabilities to deter specific actors of concern, including those who may be serving as proxies, from employing WMD. DoD will also be prepared to locate, characterize, secure, exploit, and destroy WMD. We are seeing immediate successes in this area with the activation of the Standing Joint Force Headquarters - Elimination (SJFHQ-E). In addition to its unique support to the Combatant Commands, this year the SJFHQ-E participated in major exercises jointly with South Korea, France, and the United Kingdom. We are already seeing how this capability is able to address a range of challenges under varying security and political conditions.

Given the prevalence of coalition operations in contemporary military campaigns, helping allies and partners understand WMD risks to develop effective defenses is an important element of our mutual defense. Such practical security cooperation focused on countering regional WMD threats helps partners resist incentives to acquire WMD in response to changes in the security environment. With this in mind, we have active bilateral CBRN defense partnerships with Japan, South Korea, Israel, France, the United Kingdom, and members of other countries as well as with NATO.

The Department is also prepared to sustain operations and support continuity-of-government efforts following a WMD incident. Forces and operational areas must be able to function with minimal residual limitations resulting from chemical, biological, radiological, or nuclear (CBRN) exposure or contamination. In support of the warfighter, we will build on the successes of the Chemical and Biological Defense Program (CBDP) by continuing to improve the training of CBRN forces and advisors, developing medical and physical countermeasures, and advancing protective equipment and platforms for physical protection and decontamination. In addition, DoD is prepared to support civil authorities with CBRN response capabilities to mitigate the consequences of events in the homeland and abroad, including through the provision of timely technical forensics to enable strategic decision-making. DoD may also lead or assist in the disposal of residual adversary WMD capabilities until such time that a civilian or international entity can assume these responsibilities.

Conclusion

We are committed to meeting the nation's countering WMD requirements while taking into account a shrinking Department of Defense budget. DoD will continue to pursue CWMD activities that span a range of unilateral and multilateral counter-proliferation and non-proliferation efforts, and we will continue to coordinate our efforts within the interagency and with our international partners to prevent and protect against these most dangerous threats. None of the efforts I have described to you today would be possible without the continuing support of

Congress. I thank you for your support for our fiscal year 2014 budget request and look forward to our continued partnership.

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Senate Armed Services Committee

Statement of Mr. Kenneth A. Myers III
Director, Defense Threat Reduction Agency
and
Director, U.S. Strategic Command Center for Combating
Weapons of Mass Destruction

on

Countering Weapons of Mass Destruction
Programs and Activities

before the
Senate Armed Services Committee
Subcommittee on Emerging Threats and Capabilities

23April 2013

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Senate Armed Services Committee

Madam Chairwoman, Ranking Member Fischer, and Members of the Subcommittee, it is an honor to be here today to share with you the work being done to counter the threats of weapons of mass destruction (WMD) by the Defense Threat Reduction Agency (DTRA) and the United States Strategic Command Center for Combating WMD (SCC-WMD).

The threat posed by nuclear, radiological, biological, and chemical weapons is immediate, growing in scope, and evolving in its potential applications. Those who wish to harm us understand that the use of such weapons could result in immense loss of life and enduring economic, political, and social damage on a global scale.

President Obama has made it clear that countering weapons of mass destruction (CWMD) is a critical national security priority for our nation. Quite simply, the Agency and Center's focus is to keep WMD out of the hands of terrorists and other enemies by locking down dangerous nuclear and biological materials, destroying legacy weapons, preparing for, and responding to WMD incidents, and developing technologies to prevent, defend against, and counter a WMD attack.

Mission

Our mission spans the scope of nonproliferation- reducing WMD at their source; counterproliferation- the deterrence, interdiction, and defeat of WMD threats, and consequence management –the minimization of the operational effects of WMD attacks and mitigation of their consequences.

DTRA and the USSTRATCOM Center, and the companion Standing Joint Force Headquarters for Elimination (SJFHQ-E) are a one-stop shop in addressing these threats. If these organizations were compared to a grocery store, not only would we provide access to nearly every kind of food product one could ask for but we have partnerships to deliver what we do not carry in-house. Our store would not only bring in the produce but would also work with the farmers in the field to improve productivity. We would not only bring your groceries to the car but we would also come home with you to help cook the meal. In fact, we would provide our

own recipes. Now obviously we are not a grocery store nor do we stock shelves with inventory, but through our partnerships and expertise, we are built lean and flexible to fill very unique and specialized CWMD roles for a wide variety of customers. What is most impactful about these three organizations is not just the depth of our mission but the broad span of services we provide, all of which are necessary for successfully countering WMD. And each of these initiatives, whether large or small in scope add up to create a very strong proactive and reactive shield for our security and that of our allies.

Regardless of the time or day, our building housing DTRA and the SCC is constantly buzzing with activity and with a diverse and remarkable collection of talented workers. As you enter our building and walk through the hallways, you encounter personnel with highly advanced technical degrees and skills related to physics, chemistry, microbiology, and nuclear engineering. They are working right alongside those with expansive experience with program management, logistics, planning, special operations, targeting and military operations. Our operation is often described as unique in this way, and it is true.

Let me give you a simple example of exactly how our agency works. On our Science and Technology (S&T) side, we are developing the technologies necessary to verify arms-control commitments. We must make sure that the equipment we are producing in our research and development efforts fit the needs and the constraints and the conditions under which our inspectors are going to have to operate. It has to be rugged, compact, transportable, easy to use and most of all effective in a variety of diverse and often difficult environmental conditions. Consistent with our one-stop shop mission, we bring everything needed to wherever the mission is to be performed.

On the other side, our operations experts have to be properly trained to make full use of the technology, make repairs, work with foreign governments and personnel, and get the job done under tight timelines. These two parallel processes, S&T and operations, must be able to support each other and the workforce must be dynamic enough to fill both roles.

What binds our mission together are the consequences of the world's most dangerous weapons. The processes to create chemical, biological, radiological, nuclear and high yield explosive (CBRNE) weapons are all different and each represents different challenges in terms of approach, destruction, and impact. As a result, there are over 2,000 people who work for DTRA/SCC-WMD in 11 sites within the US and 9 sites around the world. In fact, nearly 30% of DTRA/SCC's workforce performs work outside of the DC area. While these individuals are specialized, they are focused on one mission, protecting the United States and our allies from weapons of mass destruction.

The truth is that countering and combating weapons of mass destruction has to be performed on a larger scale than just our single institution. No one Federal Department, no single geographic region, no single country can marshal the necessary capabilities alone to successfully fight the WMD threats we face in this day and age. It requires careful collaboration not only across a variety of US government agencies but also with our allies and other partner nations abroad. As a result, the design and approach of our agency is intentionally open to collaborative partnerships and outward engagement.

For example, it is not enough to turn back a shipment of WMD materials at an overseas border crossing. The actors' motives and intent need to be dissected and analyzed. The WMD material itself needs to be analyzed so we can better understand its strength, how it was made, and trace it back to its source. And the materials at hand must be safely secured and disposed. The DTRA and SCC role in all of this provides the support necessary to do just that.

On any given day, tens to hundreds of DTRA and Center experts are dispatched overseas, and in certain cases to some of the most dangerous and sensitive of areas, in order to provide analysis, research, testing, training and operational expertise.

Our nuclear experts are supporting global nuclear weapons lockdown efforts, helping to protect and ensure surety of our own nuclear weapons, and survivability of US Nuclear Command, Control, and Communications.

Our biologists are consolidating and improving the security of dangerous pathogen collections across the planet, collaborating closely with other like-minded nations to prevent nefarious distribution of biological materials. They are also working cooperatively with international partners to counter emerging and potentially genetically altered or weaponized infectious diseases and developing new means for protecting our military personnel against biological terrorism.

Our chemical weapons experts are assisting with the safety, security, and cooperative destruction of chemical weapons (CW) in the U.S. and Russia. They are also assisting with safety and security at Libya's CW storage facility and developing plans to assist them with CW destruction activities. In addition to addressing this urgent need, our S&T efforts also address potential future chemical weapons threats.

DTRA structural dynamics experts are working on solutions to protect military and related government facilities at risk while also developing new means for mitigating blast effects resulting from vehicle-borne improvised explosive devices against structures and other infrastructure.

Our DTRA and Center workforce performs CWMD planning and exercise support and provides expertise to the combatant commands and other customers.

Our CWMD Science and Technology development is conducted in parallel with our operational capabilities in a complimentary and collaborative fashion. DTRA does not own or operate any functional laboratory, but we are able to select from the full range of national expertise, wherever that may be. Our performers include the DoD and Department of Energy/National Nuclear Security Administration (DOE/NNSA) labs, contractors, Federally Funded Research and Development Centers, University-Associated Research Centers, and academia. And we provide and operate test and evaluation capabilities at government facilities in New Mexico and Nevada to meet our own mission requirements, and those of our various customers and stakeholders.

As our USSTRATCOM Commander General Bob Kehler recently noted while visiting DTRA and the Center, “this campus right here is where the experts are, this is where the country’s expertise is. This is the focus point; this is where it all comes together, right here.”

Structure

DTRA was created from a number of other national security entities whose combined history includes the Manhattan Project, the Defense Nuclear Agency, the Defense Special Weapons Agency, and the Chemical and Biological Defense and Nunn-Lugar Cooperative Threat Reduction programs, to name a few.

As a Combat Support Agency we are available 24 hours a day, seven days a week, to support the Combatant Commanders and Services in preparing for, preventing, or if necessary, responding to any WMD threat or challenge that they might face whether it be here or abroad. In the laboratory, planning sessions, or on the battlefield, our experts provide or utilize collaborative partnerships to address every CWMD contingency.

As a Defense Agency, one of our prime responsibilities is to perform and to manage a research and development portfolio to develop tools and capabilities that the warfighter will need to address and to operate in a WMD environment, whether that be nuclear or other CWMD detection, chemical and biological protection gear, uniforms, or detectors.

As the USSTRATCOM Center for Combating Weapons of Mass Destruction, I report to General Bob Kehler, commander, USSTRATCOM. Our Center supports the Commander USSTRATCOM with the Unified Command Plan responsibility to synchronize the planning for DoD CWMD efforts and advocate for CWMD capabilities.

The Standing Joint Force Headquarters for Elimination was stood up by General Kehler last year to provide direct operational support to on-scene task forces that need CWMD expertise. To be clear, I am not the commander of the Standing Headquarters, but it is commanded by the flag officer that serves as my Deputy Director of the USSTRATCOM Center collocated in DTRA.

The Standing Joint Force Headquarters is intentionally designed to expand our threat reduction activity to nonpermissive environments, or one in which we are not permitted a cooperative opportunity to reduce weapons of mass destruction.

DTRA, the SCC and the Standing Joint Force Headquarters all have technically different roles in the counter-WMD mission area but they are located together so we can all leverage the most out of the resources that Congress provides and the capabilities that we develop and deploy together.

To quote General Kehler again, if a joint commander “needs help with an SCC-WMD issue, he turns to Mr. Myers...and if Mr. Myers can’t help him with his SCC-WMD hat on, he can flip on his other hat and turn to DTRA....all of the expertise to deal with these problems is here...and it makes all the sense in the world.”

DTRA performs its programs in response to direction provided by the Office of the Secretary of Defense (OSD), in direct support of each Combatant Commander on behalf of the Chairman of the Joint Chiefs of Staff and General Kehler as Commander of USSTRATCOM. As the Director of DTRA, I report through Mr. Andrew Weber, the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, to the Under Secretary of Defense for Acquisition, Technology and Logistics. We also work in partnership with the Assistant Secretary of Defense for Research and Engineering and with the Assistant Secretary of Defense for Global Strategic Affairs in the Office of the Under Secretary of Defense for Policy.

Strategies and Goals- Layered Attack

One of our major strategies is erecting layers of defense between the threats and the American people. It is just common sense to go where the problem begins and attempt to counteract and eliminate these threats as far away from American soil as possible.

Nonproliferation

The most well-known nonproliferation program was created by your former colleagues Senator Richard Lugar and Senator Sam Nunn. The Nunn-Lugar Cooperative Threat Reduction (CTR) Program has been a true success story and has made incredible contributions to U.S. national security in the last 20 years.

The program has now helped to destroy more than 7,616 warheads created for the purpose of hitting targets in the United States. This is chilling when you consider that any one warhead could take out the city the size of Charlotte in one shot. As of the end of February this year, we have destroyed 912 ICBMs, 197 ICBM mobile launchers, 906 air-launched cruise missiles, and eliminated 33 nuclear powered submarines (SSBN) capable of launching ballistic missiles (SLBMs); eliminated 498 ICBM silos, 155 bombers, 492 SLBM launchers, and 695 SLBMs; sealed 194 nuclear test tunnels and holes; safely and securely transported 607 nuclear weapons train shipments; upgraded 24 nuclear weapons storage sites; and secured 47 Biological Threat Reduction Zonal Diagnostic Laboratories.

This past year, we eliminated 21 SS-24 ICBM rocket motors in Ukraine and destroyed over 791.8 metric tons of Russian nerve agents. We have also secured 4 bio labs in Ukraine and Georgia, and opened a Biosafety Level 2 laboratory in Georgia to help us with global bio surveillance. And this is just scratching the surface of the Nunn-Lugar program's accomplishments. As President Barack Obama recently stated at a Nunn-Lugar Program 20th anniversary celebration, "missile by missile, warhead by warhead, shell by shell, we're putting a bygone era behind us."

The evolution of Nunn-Lugar has been remarkable. We are no longer building large, expensive missile dismantlement facilities or large chemical weapons destruction sites. Missile and submarine elimination projects are now being tracked alongside smaller, yet equally critical biological material projects in sub-Saharan Africa and proliferation prevention projects in Southeast Asia. Because of our success in eliminating access to materials in the former Soviet Union, groups and states seeking WMD have shifted their attention to other geographic areas and

potential WMD sources. This evolution has required a shift in our thinking as well and is the reason why we have expanded Nunn-Lugar authority to nearly 80 countries, with close collaboration with our partners at the State Department and the National Nuclear Security Administration.

In most cases, our new partners have no WMD aspirations. But, endemic diseases, man-made or otherwise, are not constrained by geographic or political boundaries. So it is up to us to go to the source. And it requires us to form cooperative partnerships to ensure that consequential WMD proliferation does not occur.

For example, DTRA/SCC-WMD is focused on helping African nations secure naturally occurring dangerous pathogens. Deadly African diseases like Ebola, Marburg, and Anthrax that were once used to make biological weapons during the Cold War are being safeguarded, cataloged, and, if needed, destroyed as part of the Cooperative Biological Engagement Program, now the largest activity within the Nunn-Lugar Cooperative Threat Reduction Program. For a relatively small investment, the program is reducing access to biological materials and expanding international partnerships to better counter natural and man-made biological events.

For example, the laboratories I visited in Africa in 2011 had broken windows, rusty locks, meager electrical capabilities, and insecure fencing. Keep in mind that these facilities stored Anthrax, Ebola, Marburg, and Brucellosis. During one of my visits I casually walked into an unlocked room in an unsecure building that had seven unlocked freezers. In those freezers, situated next to countless other diseases, were many vials containing several grams of Anthrax. Just 2 grams of Anthrax killed 5 Americans in the postal mail attack on the United States Senate in 2001. The anthrax that I saw was not weaponized; however, those vials could serve as the foundation for a biological weapon. In fact, during the Cold War, the Soviets reached into Africa to obtain the Anthrax which filled the 300 metric ton fermenters at Stepnogorsk. Through Nunn-Lugar we are working with our partners in Kenya and Uganda to ensure that those vials of Anthrax will not be weaponized and will not fall into the hands of terrorists.

Timing is everything with biodefense. DTRA works closely with the Departments of Health and Human Services, the Centers for Disease Control and the United States Department of Agriculture and others to maximize our expertise and relationships within the global health community to improve early warning and detection capabilities and mitigate pandemic disease threats. We are even working on a mobile testing device which would allow for us to diagnose both threat and infectious bio-agents in humans in potentially remote areas. We are also creating partnerships with industry for advanced development and manufacturing of medical countermeasures to counter emerging bio threats and infectious diseases.

Counterproliferation

If our programs and our efforts at the source are unable to stop these WMD threats before they leak out, we help Combatant Commanders and military Service Components to engage the threat on someone else's soil. Detection, interdiction, and if need be, destruction of these weapons and materials are the goal, thus disrupting the supply or smuggling routes and providing our national leadership with knowledge concerning important threat details. Working with our International partners, our goal is to deter, dissuade, and deny those who both produce and attempt to gain access to these materials and drive them out of business.

For example, the Proliferation Prevention Program, or PPP, enhances the capacity of partner countries to deter, detect, investigate, and respond to the attempted proliferation of WMD. It provides specialized equipment, training, and facility upgrades for partner nation border security and law enforcement organizations. Training is institutionalized through a train-the-trainer approach and sustained with periodic local and regional WMD Integrated Exercises which enable students to use program skills and equipment within a realistic training environment. The Proliferation Prevention Program's partners span the Caucasus, Eastern Europe, Central Asia, Southeast Asia, and the Middle East.

One example of the impact of PPP can be seen with the country of Ukraine. During an exercise in 2007, Ukrainian border guard personnel intercepted a vehicle with an unmarked container filled with a suspicious white powder. PPP observers witnessed the border guards opening the

container and literally smelling it to determine whether or not the contents were nefarious. Fast forward to today and we have fully institutionalized a “WMD Inspection” course at the State Border Guard Service of Ukraine. DTRA was able to accomplish this by providing appropriate training and training equipment. Furthermore, Ukraine has taken the initiative to offer training to its neighbors as a regional training center. They have hosted Moldovan border guards already and will soon be hosting Armenian Border Guard Forces in addition to the regular training that they provide for their own forces.

Because of our success in interdicting and eliminating weapons at the source, we have literally driven the enemy underground. As a result, our national security leadership and military commanders need non-nuclear capability to strike at Hard and Deeply Buried Targets (HDBT). DTRA works closely with the Defense Intelligence Agency to find these targets and provide Combatant Commanders and Service Components with effective CWMD contingency responses. For example, the U.S. Air Force now owns and can employ a DTRA initiated product - the Massive Ordnance Penetrator Program (MOP). The MOP is a 30,000 pound conventional penetrating weapon designed to provide substantial improvements in accuracy and lethality over current weapons in the inventory to defeat hardened deeply buried targets.

Another aspect of our work is to ensure the complete and successful stewardship of our nuclear weapons stockpile. We have systems in place to guarantee that we have complete control and accounting of our nuclear weapons at all times. In fact, last year we conducted 18 inspections of US nuclear capable units. We make sure every safety system is in place, maintained and in working order, and put the operations, maintenance and security forces through drills and exercises to ensure that everyone knows their job, they know the proper procedures and they know how to react when the situation changes. Our collective goal is to protect, control and serve the nation with 100% assured predictability, reliability and confidence in our nuclear weapons stewardship.

Consequence Management

DTRA's roots reach to the early days of the Cold War when it provided technical and operational nuclear weapons effects expertise to the Military Services. This mission continues with additional services for the Combatant Commands and their ability to respond to WMD threats. DTRA's Technical Reachback capabilities support any CBRNE decision making capability both here and abroad. We give the troops on the front line access to some of the smartest subject matter experts in real time. Last year, we fielded 1,492 Technical Reachback requests.

The Consequence Management Assistance Program (CMAP) has active engagements in the Middle East, South East Asia, East Africa, and Eastern Europe. One recent success story occurred in Jordan where CMAP worked to enhance their capability to respond to incidents involving WMD. This was the first time that representatives from 28 Jordanian civilian and military organizations - including the Jordanian Armed Forces, Civil Defense, Ministries of Water and Irrigation, Religious Affairs, Education, and Trade and Commerce - sat together for the express purpose of revising a national emergency response plan. This engagement produced a more focused response to chemical and biological threats and better coordination among their ministries.

Regional Contingency Teams

In my testimony last year, I shared with the Committee DTRA's work to provide real-time technical assistance to our US Armed Forces in Japan and the Japanese government in dealing with the estimated 9.0 magnitude earthquake that rocked the east coast of Honshu, Japan, causing enormous damage and destruction. The earthquake was followed by a devastating tsunami that resulted in even more damage and tremendous loss of life. And as damage reports from the earthquake and tsunami reached the Japanese government leadership, the Tokyo Electric Power Company was working to prevent a third disaster - nuclear meltdown.

As a close ally, the United States offered its consequence management support and DTRA provided radiological sensor data to produce models of the radiological plume. We provided

daily update briefings and video teleconferences and worked to educate our military leaders about possible impacts to the Japanese population and our own troops in the area. In fact, the Japanese Ambassador even commented to me, “We wish we had a DTRA.”

Following this and other missions, DTRA began to review how to best utilize their assets and maximize both results and efficiency during fast-paced, real-time events. As a result, we created Regional Contingency Teams (RCTs) for certain national security situations to ensure that when we face a crisis, we have in place the best and most appropriate and complimentary technical, planning, and operations staff from all three of our organizations. Likewise, we set up beforehand whatever necessary equipment and coordination among Combatant Commands, Joint Staff, other DoD offices, other US government agencies and even our international partners. This approach enhances our planning and response time and allows for the best, most integrated information to be available across the board. We didn’t just alter the stove pipes; in this case we blew them up.

This concept sounds simple but it is often difficult as stove pipes are hard and thick and take considerable effort to break down. This is especially true when you consider the depth and breadth of our mission and the various roles that each organization fulfills. Communication and coordination across mission areas is sometimes difficult to accomplish. Nevertheless, it must be done - and we are making progress - but there is much left to do.

Events in the Levant, North Africa, Northeast Asia, and elsewhere have tested our model and the impact that we have seen is very positive. Our Requests for Information (RFIs) from our customers are up and the information disseminated is more timely, accurate and complete. Our Fiscal Year 2014 Budget Request helps us to continue this cross-cutting, collaborative approach.

Northeast Asia, Syria

Within this framework, DTRA is playing a critical role in current US national security issues around the world. Events in North Korea, Syria and the Middle East are well publicized and our

agency is engaged in these matters. While I would prefer to discuss our agency's involvement in these issues during the closed session, I share the member's interest in these issues.

Budget

We accept that the overall budget situation will likely remain difficult and that additional pressures are expected to continue. This is significant as DTRA's annual appropriations have remained relatively flat since Fiscal Year 1999, despite the continuing importance, evolution, and transformation of CWMD mission requirements.

We are working very hard to become more effective and efficient with the resources we have. We are prioritizing. We have shut down a number of offices. We did a complete prioritization of programs and eliminated those we felt could be covered in other ways. And we are utilizing technology to reduce the need to travel and attend conferences and other administrative costs.

One of the other ways we have worked to improve the efficiency of our organization is to expand partnerships that enable us to leverage expertise and capabilities from across DoD and other federal agencies. For example, we coordinate with the Department of Homeland Security on development of nuclear detection and forensics, and piggyback on service technology development, particularly unmanned aerial vehicles as platforms for WMD search detection and interdiction. We also leverage the CDC's global partnerships and technical expertise to implement biological research and capacity building projects that help our international partners increase capacities through improved disease surveillance, detection, diagnosis, and reporting.

Today, DTRA and SCC-WMD remain capable of executing our missions. However, I believe that General Kehler and I speak with one voice when I describe my most serious concern as the direct impact that this continuing fiscal uncertainty is having on our people. Uniformed service members and civilian Federal employees alike have successfully withstood the effects of round-the-world mission accomplishment and hectic operational tempos. They willingly accept the uncertainties and risks which accompany mission performance. But they are anxious about what financial risks do to their families.

Our workforce will cope with the effects of financial uncertainty in the near term. But, like General Kehler, I worry that over time our most experienced professionals and our most promising younger people will vote with their feet to pursue more stable opportunities elsewhere.

FY14 DTRA Budget Request Overview

Our budget request for Fiscal Year 2014 (FY14) is \$1.49 billion and comprises Defense-wide Research, Development, Test and Evaluation; Operations and Maintenance; Procurement; and Nunn-Lugar Cooperative Threat Reduction (CTR) appropriation accounts. In addition, DTRA executes the \$449.3 million Science and Technology (S&T) portion of the DoD Chemical and Biological Defense Program (CBDP) and serves as the funds manager for the remainder of that program's funding, \$1.05 billion. Therefore, the total DTRA resource portfolio is approximately \$2.99 billion. Details and highlights for these requests follow.

Operations and Maintenance Funding

Nearly 85% of DTRA O&M funding directly supports the warfighters and national missions as it pays for planning, training, exercises, and other means for collaboration across DoD and the USG, and with international partners. O&M funding is the fuel that enables us to reach out to our components and personnel, the warfighters, and international partners across the globe.

The requested O&M funding would be applied as follows:

** Nonproliferation Activities (\$67.3 million) for arms control activities including the conduct of USG inspections of foreign facilities, territories, or events; coordination and conduct of the escort of inspection teams for inspections or continuous monitoring activities in the US and at US facilities overseas; and the acquisition and fielding of technology capabilities required to implement, comply with, and allow full exercise of US rights and prerogatives under existing and projected arms control treaties and agreements.

** WMD Combat Support and Operations (\$180.2 million) for a wide range of combat and warfighter support to the Joint Chiefs of Staff, the Combatant Commanders, and military forces as they engage the WMD threat and challenges posed to the US, its forces and allies. DTRA

supports the essential WMD response capabilities, functions, activities, and tasks necessary to sustain all elements of operating forces within their area of responsibility at all levels of war.

** US Strategic Command Center for Combating WMD (\$11.8 million) for DTRA direct support to the SCC-WMD including development of tools; providing strategic and contingency planning, policy, and analytical support; developing interagency relationships; and working closely with USSTRATCOM partners to establish the means for assessing and exercising capabilities to combat WMD.

** Core Mission Sustainment (\$185.1 million) for a wide range of enabling capabilities which include information management; resource management; security and asset protection; acquisition and logistics management; strategic planning; leadership and professional development; and provide the safety, security, and efficiency necessary for mission success. In recent years, DTRA has increased investment in its Information Technology systems to provide secure and dependable connectivity for global mission execution.

Nunn-Lugar Cooperative Threat Reduction

The request of \$528.5 million for this important program would be used as follows:

** Strategic Offensive Arms Elimination (\$10 million) for elimination of Strategic Offensive Arms in Russia and the storage and elimination in Ukraine of rocket motors from dismantled SS-24 ICBMs. Due to diminishing elimination activities needed for the Russian Federation to meet the New START Treaty requirements, the DoD intends to transition remaining responsibility for elimination activities to the Russian Federation in 2014.

** Chemical Weapons Destruction (\$21.3 million) for technical support to the Russian chemical weapons destruction operations at Shchuch'ye and the Kizner Chemical Weapons Destruction Facilities. Russia began chemical weapons destruction operations at Shchuch'ye in March of 2009 and, as of April of this year, has destroyed over 1.6 million munitions and 4014 metric tons of nerve agent. Funding is also provided under this account for technical expertise and resources to support chemical weapons destruction in Libya.

** Global Nuclear Security (\$86.5 million) for improving nuclear material security, including security for nuclear warheads and weapons-usable nuclear material. This program also assists in the secure transport of nuclear warheads and other qualifying nuclear material to dismantlement facilities, secure storage areas, or processing facilities for disposition.

** Cooperative Biological Engagement (\$306.3 million) for combating the threat of state and non-state actors acquiring biological materials and expertise that could be used to develop or deploy biological materials and weapons. This program destroys or secures certain biological agents at their source, and works in partnerships to ensure a secure disease surveillance system. This program works closely with other US Government departments and agencies, international partners and the private sector.

** Proliferation Prevention (\$73.8 million) to enhance the capability of non-Russian, Former Soviet Union (FSU) states and other partner countries to deter, detect, report, and interdict illicit WMD trafficking across international borders. Beginning in fiscal year 2012, the Proliferation Prevention program began expansion outside of the FSU to Southeast Asia. In Fiscal Year 2013 and 2014, Proliferation Prevention will continue expansion activities in the Southeast Asia region on a bilateral and regional basis and begin to work with partners in the Middle East.

** Threat Reduction Engagement (\$2.4 million) to develop active and positive relationships between the defense, military, and security establishments of the United States and the states of Eurasia and Central Asia. This program engages military and defense officials in activities that promote regional stability, counter-proliferation, and defense reform; build security cooperation with the partner states; and promote exchanges that enhance interoperability with U.S. and North Atlantic Treaty Organization (NATO) forces for multinational operations.

** Other Assessments/Administrative Support (\$28.2 million) to ensure that DoD-provided equipment, services, and related training are fully accounted for and used effectively and efficiently for their intended purposes. This account also funds CTR program travel,

translator/interpreter support, and other agency support to include support to program personnel assigned to US Embassy offices in partner states.

Research, Development, Test, and Evaluation

DTRA RDT&E programs respond to the most pressing CWMD challenges including stand-off detection, tracking, and interdiction of WMD; modeling and simulation to support weapons effects and hazard predictions; classified support to Special Operations Forces; defeat of WMD agents and underground facilities; and protection of people, systems, and infrastructure against WMD effects.

DTRA RDT&E is unique in being focused solely on CBRNE; tied closely with the agency's Combat Support responsibilities; has a top-notch in-house field test capability; relies upon competitive bids, the national labs, industry, and academia rather than an in-house laboratory infrastructure, allowing for a "best of breed" approach to performer selection; and is nimble and responsive to urgent needs.

The agency has a comprehensive, balanced CBRNE S&T portfolio that supports DoD goals and is well connected with DoD customers, as well as interagency and international partners. Our RDT&E approach balances the need for near-term pay-off with the need for long-term knowledge and expertise, and is centered upon the following projects: Basic Research, Applied Research, Advanced Research, and System Development and Demonstration. The requested RDT&E funding includes \$45.9 million in Basic Research to provide for the discovery and development of fundamental knowledge and understanding by researchers primarily in academia and world-class research institutes in government and industry.

The DTRA Fiscal Year 2014 request also includes \$175.3 million for WMD Defeat Technologies Applied Research, \$274 million for Proliferation Prevention and Defeat Advanced Research, and \$12.9 for WMD Defeat Capabilities System Development and Demonstration.

Chemical and Biological Defense Program S&T

The Department's CBDP S&T programs support DoD-wide efforts to research, develop, and acquire capabilities for a layered, integrated defense against CBRN agents; better understand potential threats; secure and reduce dangerous materials whenever possible; and prevent potential attacks. Although funding for the CBDP is not part of the DTRA budget request, the agency executes the S&T portion of this program, for which the Department has requested approximately \$449.3 million in FY14. The agency also manages funding execution in support of CBDP advanced development and procurement.

Conclusion

Madame Chairwoman, in closing my testimony I would like to highlight a recent speech by Deputy Secretary of Defense Ash Carter who spoke at a celebration of the Nunn-Lugar program's 20th anniversary. "Historians should look back at what might have happened, but didn't thanks to Nunn-Lugar. Imagine the alternative if loose nukes from the former Soviet Union had gotten into Bin Laden's hands; into the hands of other terrorists with odious causes; or rogue states....contemplate all of that and you see the enduring value of Nunn-Lugar."

This analogy is a perfect snap-shot of why what our Agency and Center does is important. What would happen if we didn't do all of the things I have described today? What would happen if we were not funded enough to accomplish our mission? These are serious questions which strike at the heart of our national security challenges. We hope that we will continue to earn the Committee's trust and support in meeting these threats and ensuring our security. Thank you, again, for the opportunity to be here today. I would be pleased to respond to your questions.

**Statement of Anne Harrington
Deputy Associate Administrator for Defense Nuclear Nonproliferation
National Nuclear Security Administration
U.S. Department of Energy
on the
Fiscal Year 2014 President's Budget Request
Before the
Senate Armed Services Committee
April 23, 2013**

INTRODUCTION

Madam Chairman, Ranking Member Fischer and distinguished members of the Subcommittee, thank you for having me here to discuss the President's Fiscal Year 2014 budget request for the Department of Energy's National Nuclear Security Administration (NNSA)'s Defense Nuclear Nonproliferation appropriation account. The Defense Nuclear Nonproliferation appropriation budget request of \$2.14 billion provides the funding necessary to implement the President's nuclear security priorities. I am particularly pleased to appear today with my colleagues from the Department of Defense and the Defense Threat Reduction Agency. We share a strong commitment to the security of the nation and to finding ways for our programs to work together to that end.

The Defense Nuclear Nonproliferation appropriation account of the FY 2014 budget request has been restructured to include Nuclear Counterterrorism Incident Response Program (NCTIR) and Counterterrorism and Counter-proliferation Programs (CTCP), both of which include activities transferred out of the Weapons Activities appropriation. By drawing these NNSA programs together with the Office of Defense Nuclear Nonproliferation programs in a single appropriation, we strengthen existing synergies and cooperation among these functions. In doing so, we provide priority and emphasis to the NNSA programs that are responsible for implementing the President's nuclear security priorities and the 2010 Nuclear Posture Review (NPR) which "outlines the Administration's approach to promoting the President's agenda for reducing nuclear dangers and pursuing the goal of a world without nuclear weapons, while simultaneously advancing broader U.S. security interests." This change in budget structure will present with greater clarity the total funding and level of activity undertaken by the NNSA in this area, which the NPR identifies as the highest priority nuclear threat facing the nation. At the same time, this realignment ensures that the Weapons Activities appropriation is now more focused on the nuclear weapons stockpile and related activities.

As we look to the future, we see challenges and opportunities across the globe. Over the past four years we have seen increased focus, determination and expansion of activities with our international partners. This has been due largely to the momentum created by the Nuclear Security Summit process to meet shared nuclear security goals. Russia, for example, has announced its intention to be a full partner with us, and remains a critical partner in the efforts to secure the most vulnerable nuclear materials and keep them out of the hands of proliferators and terrorists. The Russians are not alone, and dozens of countries have stood alongside President Obama and the United States at two Nuclear Security Summits to show their commitment to our shared cause. The FY14 Office of Defense Nuclear Nonproliferation budget request provides \$1.92 billion to harness the international momentum created by the Nuclear Security Summit process and address our most pressing nonproliferation challenges.

One of our most important accomplishments has been to support the President's call for an international effort to secure vulnerable nuclear material across the globe in four years. The President's four-year effort is an unprecedented global undertaking, led by the United States, with significant contributions from dozens of countries around the world. The White House, in close coordination with our interagency and international colleagues, is leading and implementing a comprehensive three-tiered strategy to secure vulnerable material at the individual site level, the national level and the global level. I am pleased to report that NNSA has made important contributions to the U.S. Government's efforts in each of these strategic areas. Since 2009, our efforts to secure plutonium and highly enriched uranium (HEU) around the world have accelerated to make it significantly more difficult to acquire and traffic the materials to make an improvised nuclear device. I am proud to say that we are very close to meeting our goals to remove or dispose of 4,353 kilograms of highly enriched uranium and plutonium in foreign countries by the end of 2013, and equip 229 buildings containing weapons-usable material with state-of-the-art security upgrades, though some challenges remain.

On April 5, 2013, we completed the removal of all HEU from the Czech Republic, making it the 10th country to be completely de-inventoried of HEU in the last 4 years. The NNSA will complete prioritized removal of vulnerable nuclear material from three more countries this year.

The FY14 budget request provides \$424.5 million to the Global Threat Reduction Initiative. While this is a decrease in funding compared to years past, this budget reflects the expected successful conclusion of the four year effort.

The four year effort allowed us to accelerate some of our most important work, but it has been accurately described as "a sprint in the middle of a marathon." After our four-year sprint, there will be much left to complete in the areas of the elimination, consolidation and securing of nuclear and radiological materials worldwide. Nuclear and radiological terrorism continues to

be a grave threat, nuclear and radiological WMD technology and expertise remain at risk, and materials of concern, such as plutonium, are still being produced. While the challenges are substantial, they are not insurmountable.

GTRI's FY14 budget will address these challenges head-on by funding the removal of an additional 565 kilograms of HEU and Plutonium, the shutdown or conversion of an additional 4 HEU research reactors, and the completion of security upgrades for an additional 105 high-priority nuclear and radiological buildings.

In addition to GTRI's material security and elimination efforts, the FY14 budget provides \$369.6 million for another important element of the President's nuclear security agenda - the Office of International Material Protection and Cooperation (IMPC). The FY14 IMPC budget reflects the completion of a number of major initiatives in several program areas as well as a shift to a sustainability phase with the Russian Federation.

The FY14 budget funds comprehensive MPC&A upgrades at 8 more buildings in Russia that store and process weapons-usable nuclear material, converts 0.8 Metric Tons of HEU to LEU and continues engagement with China, India and other countries on MPC&A best practices. The FY14 IMPC budget will also provide \$140 million to the Second Line of Defense program to implement the conclusions of the strategic review briefed to the Global Nuclear Detection Architecture (GNDA) interagency working group, including supporting fixed radiation detection at 25 sites in 8 countries, focusing more on mobile detection technologies, and on strengthening the GNDA.

In addition to physical security and material detection, the FY14 budget provides \$141.7 million to the Office of Nonproliferation and International Security (NIS). The decrease from the FY13 budget reflects a reduction in HEU transparency activities as the U.S.-Russian HEU Purchase Agreement nears completion. The FY14 request funds NIS efforts to safeguard nuclear material and facilities, control illicit trafficking of nuclear WMD-related technology and expertise, verify compliance with international arms control and nonproliferation treaties, and develop and implement policy to reduce nuclear dangers.

A key element of our nuclear security and nonproliferation strategy is the development of capabilities to monitor nuclear treaties, weapons development activities, and detonations worldwide. The FY14 budget provides \$389 million to the Office of Defense Nuclear Nonproliferation Research and Development to address these core goals including producing nuclear detection satellite payloads.

We will continue to pursue a multi-layered approach to protect and account for material at its source; remove, down-blend or eliminate material when possible, detect, deter and reduce the risk of additional states acquiring nuclear weapons; and support the development of new technologies to detect nuclear trafficking and proliferation, as well as verify arms control treaties.

We owe it to the American people to continually reevaluate our work and make strategic decisions for the future. The FY 2014 Budget request takes a thoughtful look at the Mixed Oxide (MOX) Fuel Fabrication Facility project and our plutonium disposition options. The United States remains committed to disposing of excess plutonium, to working in partnership with the Russian Federation in our parallel plutonium disposition efforts under the Plutonium Management and Disposition Agreement, and to engaging with the IAEA to verify the disposition. The U.S. plan to dispose of surplus weapons-grade plutonium by irradiating it as MOX fuel has proven more costly to construct and operate than anticipated. Considering these unanticipated cost increases and the current budget environment, the Administration has begun assessing alternative plutonium disposition strategies and identifying options for FY 2014 and the out-years. Naturally, this assessment of technologies will also include the Mixed Oxide approach. During the assessment period, the Department will slow down the MOX project and will actively engage key program partners and stakeholders as the assessment of alternative plutonium disposition strategies is developed. We believe the plutonium disposition assessment will ensure that we are able to follow-through on our mission in the decades to come.

Nuclear Counterterrorism Incident Response (NCTIR)

This year, the request for NCTIR will support a strategy focused on reducing nuclear dangers through integration of its subprograms: Emergency Management, Emergency Response, Forensics and International activities supported by training and operations.

In FY 2014, the program will invest in unattended sensing capabilities for the Nuclear Emergency Support Team, maintain training of the Consequence Management Home Team, sustain stabilization cities, complete improvements to U12P-tunnel, address and sustain emergency management requirements, maintain the Emergency Communications Network, and continue supporting international partners. The NCTIR program will continue to maintain essential components of the Nation's capability to respond to and manage the consequences of nuclear incidents domestically and internationally, and continue to conduct programs to train and equip response organizations on the technical aspects of nuclear counterterrorism.

Counterterrorism and Counter-proliferation Programs (CTCP)

The aforementioned budget realignment includes the Counterterrorism and Counter-proliferation, or CTCP, program office, which we stood up last year. The funding request for CTCP includes the transfer of the discontinued National Security Applications funding into a consolidated and substantially revised budget line to support the highest priority counterterrorism and counter-proliferation technical work, including the study of Improvised Nuclear Devices and other non-stockpile nuclear device threats. This increased funding will support unique nuclear device-related technical contributions derived from NNSA's core nuclear science and technology expertise. This activity supports interagency policy execution, DoD and Intelligence Community customers, and DOE's own emergency response operations.

CONCLUSION

Our continued focus on nonproliferation, nuclear security, and nuclear counter-terrorism efforts is vital. The threat of nuclear terrorism and WMD proliferation remains. Detonation of a nuclear device anywhere in the world could lead to significant loss of life, and extraordinary economic, political, and psychological consequences. In these challenging budget times, we must not lose sight of the critical role played by these programs and the protections they provide by reducing the risk of nuclear terrorism and WMD proliferation.

HEARING TO RECEIVE TESTIMONY ON PROLIFERATION PREVENTION PROGRAMS AT THE DEPARTMENT OF ENERGY AND AT THE DEPARTMENT OF DEFENSE IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2014 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, APRIL 23, 2013

U.S. SENATE,
SUBCOMMITTEE ON EMERGING
THREATS AND CAPABILITIES,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:31 p.m. in room SR-222, Russell Senate Office Building, Senator Kay R. Hagan (chairman of the subcommittee) presiding.

Committee members present: Senators Hagan, Fischer, and Graham.

Majority staff members present: Jonathan S. Epstein, counsel; and Richard W. Fieldhouse, professional staff member.

Minority staff members present: Thomas W. Goffus, professional staff member; and Robert M. Soofer, professional staff member.

Staff assistants present: Lauren M. Gillis, Daniel J. Harder, and Kathleen A. Kulenkampff.

Committee members' assistants present: Jeff Fatora, assistant to Senator Nelson; Christopher Cannon, assistant to Senator Hagan; Chad Kreikemeier, assistant to Senator Shaheen; Peter Schirtzinger, assistant to Senator Fischer; and Craig Abele and Matthew Rimkunas, assistants to Senator Graham.

**OPENING STATEMENT OF SENATOR KAY R. HAGAN,
CHAIRMAN**

Senator HAGAN. Good afternoon. The Emerging Threats and Capabilities Subcommittee meets today to review the President's fiscal year 2014 request for nonproliferation programs at the Departments of Defense and Energy. We plan to have a hard stop here at 3:20 p.m. so that we can adjourn to the Office of Senate Security in room 217 of the Capitol for a closed session with our witnesses today.

In the interest of time, I want to ask that the witnesses, if you would give a short, 2 minutes or so opening statement. We have your written testimony and we obviously have that for the record.

We are joined today by three expert witnesses to help us understand the programs under way in both of these Departments. Madelyn Creedon is the Assistant Secretary of Defense for Global Strategic Affairs, who is responsible for the policy aspects of these programs at DOD, and we welcome you back to the Senate Armed Services Committee.

Ken Myers is the Director of the Defense Threat Reduction Agency at the Department of Defense, which is focused on reducing the threats from weapons of mass destruction. The agency is responsible for executing the Cooperative Threat Reduction program. He is also the Director of the U.S. Strategic Command Center for Combating Weapons of Mass Destruction, located at the agency.

Anne Harrington is the Deputy Administrator for Defense Nuclear Nonproliferation at the National Nuclear Security Administration of the Department of Energy.

We thank you all for your service and thank you for joining us here today.

For fiscal year 2014, the Department of Defense and Energy propose to spend on the order of \$2.6 billion in nonproliferation activities to help stem the flow of the weapons of mass destruction. For the past 20 years, the Cooperative Threat Reduction, or CTR, has achieved remarkable accomplishments in Russia and the former Soviet states in helping to secure or to destroy the world's largest stockpiles of weapons of mass destruction and their materials. I understand a new CTR umbrella agreement between the U.S. and Russia is under negotiation and we would like to hear the administration's objectives for the new agreement.

Also, we are now transitioning many CTR programs to countries in Southeast Asia, the Middle East, and Africa, and for the first time we may see as much CTR funding outside the former Soviet Union as in it.

We'll want to hear what strategic approach you have implemented to assess how these funds would be most effectively spent. For instance, the Cooperative Biological Engagement Program now has 61 projects in 19 countries. Within DOE's National Nuclear Security Administration, I understand the mixed oxide, or MOx, program is considering a, quote, "strategic pause" due to significant cost overruns of as much as \$3 billion and a 3-year delay. The purpose of the 14-year-old program is to turn 34 metric tons of excess weapons-grade plutonium into commercial reactor fuel, with the Russians doing the same, a laudable nonproliferation goal.

My understanding is the Department is now estimating a life cycle cost of up to \$27 billion over 15 years to produce the MOx fuel. So I look forward to hearing from Ms. Harrington what the Department is thinking with the existing MOx program and how long it will take the Department to get back to Congress with the results from the reevaluation of this program.

Again, thank you for being here today. We look forward to your testimony, and I want to turn to my colleague and ranking member, Senator Fischer, for her comments.

Senator Fischer.

STATEMENT OF SENATOR DEB FISCHER

Senator FISCHER. Thank you, Madam Chair. I join you in thanking our witnesses for being here today. While I look forward to their testimony on these essential proliferation prevention programs, I am concerned by the prevalent argument that the United States can persuade the rest of the world to halt nuclear proliferation by reducing its own arsenal. I know the Strategic Forces Subcommittee oversees our nuclear enterprise, but its critical contribution here is also worth highlighting.

In fact, a robust U.S. nuclear deterrent, often referred to as the “nuclear umbrella,” provides a strong disincentive for other nations, including our partners and allies, to develop weapons of mass destruction. Moreover, there’s little evidence that U.S. nuclear reductions from a high of 30,000 nuclear weapons in 1967 to just 5,000 today have reduced nuclear proliferation. North Korea and Iran stand as recent evidence to the contrary.

While some in the United States and in the west view nuclear weapons as outdated Cold War relics, other nations are increasing their reliance on nuclear weapons, much as the United States did after World War II. The United States will not change this reality by reducing its arsenal. Overlooking this fact and dogmatically pursuing the reduction of U.S. nuclear forces, instead of addressing the proliferation of nuclear weapons to rogue states, will lead to a lack of confidence in U.S. nuclear security guarantees. As a result, adversaries won’t be deterred and nations that have not pursued nuclear capabilities, such as South Korea, Japan, Turkey, and Saudi Arabia, may reconsider.

Transparency and strategic stability must be our goals with respect to Russia and China. Dealing with North Korea, Iran, and potential nuclear terrorists requires a different set of priorities and different programmatic tools, some of which we intend to discuss here today.

The important proliferation prevention agencies represented here today, underpinned by a strong U.S. nuclear deterrent, are critical to our National security.

So I thank the chair and I look forward to our questions. Thank you so much for being here.

Senator HAGAN. Secretary Creedon, if you would like to go first with your opening statement.

STATEMENT OF HON. MADELYN R. CREEDON, ASSISTANT SECRETARY OF DEFENSE FOR GLOBAL STRATEGIC AFFAIRS, DEPARTMENT OF DEFENSE

Ms. CREEDON. Thank you, Senator Hagan, Ranking Member Fischer. It’s a pleasure to be here, also to be here today with colleagues of longstanding duration from both the Defense Threat Reduction Agency and from the National Nuclear Security Administration.

As we all are very well aware, we face a number of significant WMD challenges and the three of us together are aggressively pursuing the President’s vision to keep weapons of mass destruction out of the hands of terrorists and states of concern. These states of concern, of course, include North Korea, Iran, and Syria, just to mention a few.

One of the most worrisome scenarios we face is the prospect of a dangerous WMD crisis involving the theft or loss of control of weapons or materials of concern that end up in the hands of hostile actors. As the situation in Syria illustrates, instability in states pursuing or possessing WMD could lead to just such a crisis. To meet these challenges, the Department of Defense has focused on three areas: preventing WMD acquisition, containing and rolling back the threats, and responding to a WMD crisis.

Preventing the WMD acquisition requires cooperation with our international partners and the Proliferation Security Initiative is a good example of that. This is 29 partners together who participate in, among other things, exercises. The United Arab Emirates hosted the most recent one. We are now on the verge of celebrating PSI's 10th anniversary and our Polish allies will be hosting that particular celebration of the accomplishments and also looking forward to the next 10 years.

PSI is an interesting concept with our allies and for the United States. It's not included in any budget line as it comes out of general exercise money. But in the fiscal environment that we're now facing, we are looking at the idea of developing a specific line item dedicated for PSI activities and will probably be presenting this in the construct of the fiscal year 2015 budget.

But beyond preventing acquisition, which is one of our priorities, we're also containing and rolling back WMD threats. One of the most important tools we use to accomplish this is the CTR program. The flexibility of the CTR legislation has allowed the program to expand its work both geographically, most recently in the Middle East, and now also functionally.

A major focus of CTR is addressing the threat posed by Syria's chemical weapons. To address the proliferation threat from these weapons, CTR is funding the second portion of Jordan's border security project, which will increase Jordan's ability to mitigate proliferation along a 256-kilometer border with Syria.

CTR also works in Africa to improve the safety and security and hopefully destroy, in an excellent partnership that's just developing with Germany, Libya's chemical weapons stockpile. CTR is also working to improve biological security and increasing partner capacity in Kenya and Uganda and to enhance maritime surveillance capabilities and capacity in Southeast Asia.

The functional expansions that I mentioned were developed initially to assist with the close collaboration that we enjoy with the Department of Defense. DOE negotiates high-priority transfers of material, mostly nuclear material, to more secure locations for storage and reprocessing, and DOD has specific capabilities and training to transport this material. As a result, we are developing a transportation determination that will allow more nimble collaboration with DOE.

These examples also demonstrate that the CTR program remains responsive to the current and emerging security environment. We have pushed the envelope and we will continue to do so when we believe it will reduce WMD threats.

If our efforts to contain and roll back WMD threats fail, we must be prepared to respond. The recently activated Standing Joint Force Headquarters-Elimination has this responsibility. In addition

to the unique support it provides to the combatant commands, this year the Standing Headquarters participated in major exercises with South Korea, France, and the United Kingdom. We're committed to meeting the Nation's countering WMD requirements while taking into account shrinking Department of Defense budgets.

None of the efforts I have described would be possible without the continuing support of Congress and I thank you for your support for our fiscal 2014 budget and look forward to your continuing cooperation.

Thank you.

[The prepared statement of Ms. Creedon follows:]

Senator HAGAN. Thank you, Secretary Creedon.

Director Myers.

STATEMENT OF HON. KENNETH A. MYERS III, DIRECTOR, DEFENSE THREAT REDUCTION AGENCY, DEPARTMENT OF DEFENSE, AND DIRECTOR, U.S. STRATEGIC COMMAND CENTER FOR COMBATING WEAPONS OF MASS DESTRUCTION

Mr. MYERS. Madam Chairwoman, Ranking Member Fischer, members of the subcommittee: It's an honor to be here today. I'm pleased to share with you the work being done to counter the threats of weapons of mass destruction by the Defense Threat Reduction Agency and the STRATCOM Center for Combating WMD.

As a combat support agency, we are available 24 hours a day, 7 days a week, to support the combatant commanders and military services in responding to any WMD threat. As a defense agency, we manage a research and development portfolio to develop tools and capabilities needed in a WMD environment. In fact, DTRA provides Special Operations Command with the tools they need to address counterproliferation threats.

As a STRATCOM center, we synchronize U.S. efforts to counter weapons of mass destruction, and the complementary Standing Headquarters for Elimination provides direct operational support for U.S. military task forces in hostile environments. As STRATCOM Commander General Bob Kehler recently noted: "DTRA-SCC is where the country's expertise is. This is the focus point. This is where it all comes together, right here.

The events of the past week have reminded us once again that terrorists are determined to strike at any opportunity. Al Qaeda encourages their, quote, "mujahedin brothers" with degrees in microbiology or chemistry to create poisons and an effective delivery method. Because of our success in limiting access to materials in the former Soviet Union, groups and states seeking WMD have shifted their attention to other geographic areas and potential WMD sources.

This evolution has required a shift in our thinking and strategy and is the reason why we have authorized the expansion of the Nunn-Lugar program and other programs to nearly 80 countries. Today we are confronting potential WMD threats all over the world. We must be prepared for any geopolitical or military event.

Thank you again for the opportunity to be here. I'm happy to take your questions.

[The prepared statement of Mr. Myers follows:]

Senator HAGAN. Thank you.
Now Ms. Harrington.

STATEMENT OF ANNE HARRINGTON, DEPUTY ADMINISTRATOR FOR DEFENSE NUCLEAR NONPROLIFERATION, NATIONAL NUCLEAR SECURITY ADMINISTRATION, DEPARTMENT OF ENERGY

Ms. HARRINGTON. Madam Chairman, Ranking Member Fischer: Thank you for having me here to discuss the President's fiscal year 2014 budget request for the Department of Energy's National Nuclear Security Administration defense nuclear nonproliferation account. I am particularly pleased to appear here today with my colleagues from the Department of Defense and Defense Threat Reduction Agency. We share a strong commitment to the security of the Nation and to finding ways for our programs to work together to that end.

Earlier this month the President released the 2014 budget and allocated \$2.1 billion for NNSA's nonproliferation, counterterrorism, and emergency response programs. The defense nuclear nonproliferation appropriation account of the fiscal year 2014 budget request has been restructured to include nuclear counterterrorism and incident response programs and the counterterrorism and counterproliferation programs. By drawing these NNSA programs together with the Office of Defense Nuclear Nonproliferation Programs in a single appropriation, we strengthen existing synergies and cooperation among these functions. We already work together very strongly and we see that this is a good way to grow in that direction in the future.

Both the President and members of this committee have shown strong support for NNSA's mission in recent years. With your help and under the President's 4-year goal to remove dangerous nuclear materials and secure them, 10 additional countries are now free of highly enriched uranium and three more countries will be deinventoried of highly enriched uranium by the end of 2013.

But there is still much to be done. I want to stress how vital your continued support of NNSA's nonproliferation programs is to reducing the threat of dangerous nuclear materials.

In today's budget-constrained environment, we have to ensure that we are continuously improving how we do business. NNSA is an organization that is modernizing in every way and we are holding our people, both contractors and Federal employees, accountable. We owe it to the American people to continually review our work and make strategic decisions for the future.

This includes our plutonium disposition strategy. The United States is firmly committed to disposing of excess weapons plutonium, but, given the rising costs associated with the Mox project, we must step back and take a thoughtful look at the MOx project and our plutonium disposition options.

I'm sure you have a number of questions. I look forward to the opportunity to talking with you today. I want to thank you for acknowledging the value of our work and for your support in previous years that has helped us accomplish many things that have made the American people safer.

I look forward to working with you to implement the President's budget and I am ready for any questions you have.

[The prepared statement of Ms. Harrington follows:]

Senator HAGAN. Thank you.

I do expect some other Senators to come in, so right now we will take about six-minute questions for the Senators.

Secretary Creedon, I wanted to talk about the CTR umbrella agreement. I know that the United States is negotiating a new umbrella agreement with Russia on the continuing Cooperative Threat Reduction activities there. Can you please explain the high-level goals and objectives you hope to achieve in a new agreement?

Ms. CREEDON. Thank you, Senator. When we look back over the 20 years of success of the CTR program, it is really striking how much we have accomplished with the Russian government. When you look at the scorecard, which has been the longstanding metric for a lot of the accomplishments, this program has not only substantially reduced the number of warheads and delivery systems associated with the former Soviet Union, but it also was instrumental in removing entire countries from being weapons states and helping them to completely denuclearize.

This relationship has been able to survive all of the ups and downs of the broader U.S.-Russia relationship over the course of the last 20 years. So at the very highest levels, it is important that we maintain the ability to work with Russia on these topics of major concern to both countries.

How we actually will do that going forward in the future is still not resolved, as the umbrella negotiations are going on pretty much even as we speak today in Geneva. But it's maintaining that ability to work together. We're going to change, obviously, how we work. Many of the programs at DOD were on a natural glide path for completion over the course of the next several years. We want to make sure that as we transition out of these programs that Russia is going to be able to sustain them, that they have the budget-making and funding capability to sustain these programs. But we want to also figure out ways that as we look for changes in this relationship that we can work together on certain things. So maybe there are opportunities in the future where we can take our combined knowledge and share it with other countries. It's that sort of a strategic relationship that we hope in the future we'll be able to sustain.

I think practically a lot of the work in Russia is really coming to completion, so the actual—the actual work is probably less important at this point, although I don't want ever to underplay or undersell it. But it's that strategic relationship that's important in the future.

Senator HAGAN. Thank you.

In 2012 you made two determinations with respect to using CTR funding in the Middle East and Syria. Can you explain again what was accomplished in this past year and your long-term objectives for these activities?

Ms. CREEDON. Well, as is very obvious, this is a region of significant turmoil, not the least of which is in the last 18 months or so with Syria. So one of the main things that we've done with this new authority is to work with the Jordanians in developing a sub-

stantial border program, as I mentioned in my statement, that will provide border security capability to the Jordanians for over 250 kilometers of the shared border with Syria, to help prevent the leakage or the proliferation, primarily of chemical weapons, but also of technology. One of the fears is that something along the line may be stolen or tried to—someone may try to get it out of the country.

We're also working with several of the other border countries, and we've also done a fair amount of work with the Jordanian military, helping them to also be able to respond in some sort of a chemical environment.

Senator HAGAN. Thank you.

Ms. Harrington, in the fiscal year 2014 budget it proposes to take a, quote, as I said earlier, "a strategy pause" in the mixed oxide fuel program after the large cost growth in the overall effort. Can you explain why the Department has taken this strategic pause?

Ms. HARRINGTON. Thank you, Madam Chairman. Yes. We are developing a plan to assess the options for moving forward on plutonium disposition, emphasizing the fact that we remain at the highest levels in the administration fully committed to fulfilling our commitments under the plutonium management disposition agreement and to involving the International Atomic Energy Agency in verifying the disposition of those materials.

So those two principles remain steadfast. But in the face of rising costs and schedule slips and the prospect of a rebaselined projected costs near \$8 billion, we thought it was prudent and responsible to the taxpayers whose funds actually support this program to take a step back to ensure that we are carrying out this commitment in the smartest possible way.

Senator HAGAN. I'm sure we'll have more questions. My time has run out and I will go to Senator Fischer.

Senator FISCHER. Thank you, Madam Chair.

I'd like to continue with the CTR if I may. Secretary Creedon or Director Myers: There has been a large reduction in the warheads within the former Soviet Union and I believe that's a very great accomplishment. In fact, I believe that the work that all of you do is vital and very important, and I want to thank you for the service that you provide to our country and to the citizens of our country in this very important work.

When you're looking at moving on—you said work is nearing completion. How do you judge when work is complete? What are some of the benchmarks that you use?

Ms. CREEDON. I'll take two of those, just for example, and then ask Ken to do some additional ones. One of the ones that my office has been particularly focused on is understanding when we've completed or are nearing completion of the elimination of the strategic offensive delivery systems. So these would be, for instance, the ICBM's, the various ICBM's that were from the Soviet era. We are for the most part completed. We've almost completed all of that work. So that is an example of we've gotten rid of all the legacy systems, we're moving out, we've done all that work, and that's almost finished.

The other one of these big examples is also the chemical weapons destruction work. When we started off, the U.S. and Russia had

the largest chemical weapons stockpiles. In the work, primarily at Shucha, the Russians have built one facility and the U.S. built another facility. This facility is working through the bulk of the Russian stockpile. There are several other facilities, but again this is one where they are about, I want to say, they are about 70 percent complete of the stockpile that's out there. So this is another example of significant success and significant progress.

Senator FISCHER. How do you prioritize in which area you begin? Do you prioritize the nuclear over the chemical or the biological? How do you do that?

Ms. CREEDON. Are you speaking like historically within Russia or looking forward?

Senator FISCHER. Well, both.

Ms. CREEDON. Both.

Senator FISCHER. Let's look at both.

Ms. CREEDON. Well, historically we really focused initially on the nuclear side because that was the concern that Senator Nunn and Senator Lugar had when they kicked off these programs. As that relationship was built, we were able to venture into both the bio and the chemical weapons side as well. So it was a little bit of discovery and then building cooperation and more discovery and then more opportunities presented themselves.

As we look to the future, we want to maintain this threat focus. So we look out and see what are the threats. So it could be a specific threat from a specific country in a specific material, or it could be one that we just think is maybe underaddressed, and the bio threat fits in that one at the moment.

Senator FISCHER. Thank you.

Mr. MYERS. Senator, let me add a couple of points. First, one of the other specific areas that we cooperate with the Russians on is on nuclear warhead security, helping them transport nuclear warheads for dismantlement and ensuring that their storage facilities are safe and secure. One of the ways that that was measured was in the Bratislava agreement which set up the cooperation. We were basically able to establish metrics and we were able to really judge how far along in that process we are.

Ms. Creedon also mentioned our work on chem demil. In addition to Shucha, we provide some technical support to Kisner and other locations and facilities. That obviously we watch how quickly and how they move forward through the reports to the Organization for the Prohibition of Chemical Weapons as to progress they make moving forward.

The third category I would point out is there has also been efforts when the United States and Russia have worked together in third countries. That's also been a very important building block for the strategic relationship, specifically in places like Kazakhstan and elsewhere. Obviously, in those types of situations we're able to measure our effectiveness together and with equal responsibilities, either in-kind contributions or in monetary contributions.

I would also just echo what Secretary Creedon mentioned. As we move forward with these efforts in new countries, we are focused primarily on the threat, but we're also coordinating very, very closely with the combatant commands and working closely with them in terms of opportunities in terms of building relationships

and the like. Obviously, the combatant commands also have an opportunity to make recommendations or make requests, and we'll work with them as we expand the program to new areas and new regions.

Senator FISCHER. Countries have to invite the United States in to do this work, correct? And that's been the case with Russia, and you say that there has been a good working relationship and it's continued as you move on to other nations, correct?

Mr. MYERS. Just to be clear, Senator, yes, the relationship with Russia is very professional. The relationship where we work together in third countries has been very professional. But they have not been partners in all of the countries we work in.

Senator FISCHER. Do you see this partnership being available in countries such as Syria?

Mr. MYERS. It's unclear. We'll have to look forward to continuing the conversations and discussions and see what the opportunities provide us in the future.

Senator FISCHER. Thank you.

Senator HAGAN. Senator Graham.

Senator GRAHAM. Thank you, Madam Chairman. I'll try to do this in six minutes.

Ms. Harrington, we'll have a discussion here in a moment, but I want to let the chairwoman and the ranking member know about my concern about the MOx program. Back in the 1990s, under the Clinton administration, South Carolina agreed to accept 34 metric tons of plutonium, weapons-grade plutonium in excess of our defense needs. There was an agreement negotiated between the Clinton administration and the Russian Government where we would take 34 metric tons of plutonium in excess of our defense needs, weapons material, and the Russians would take 34 metric tons and we would dispose of it.

We've been dealing with this issue for over a decade now, well over a decade, and the Obama administration comes along and they actually begin to build the MOx facility. And I'm sure you're aware of it because of Duke Power, but in case people are not, there's a technology that's been tested and it works, where you can take weapons-grade plutonium, blend it down, and make commercial-grade fuel out of it. So you're taking a sword and making it a plowshare. The MOx facility at Savannah River site is somewhere toward halfway being completed.

Last year the statute that Senator Thurmond wrote when he was in the Senate and I was in the House, because there was so much pushback in South Carolina about accepting this plutonium, the fear was we're going to hold this stuff and have no way forward—well, guess what, Yucca Mountain shut down. So MOx gives you a way forward. It becomes commercial-grade fuel.

But the statute we wrote back in the early part of this century, I believe 2000, required a \$100 million fine to DOE if they didn't stay on track. Well, last year they were off track in terms of the timetable, but I sat down with the Obama Administration and said: Listen, we don't want the \$100 million; we want the MOx facility. So we extended the time period for two years.

I can assure you, I would not have done that if I had known this year in the President's budget they would be suspending the MOx

program for a study. We have studied this thing to death. It is now time to get on and getting it built.

Ms. Harrington, we do have an agreement with the Russians regarding the 34 metric tons, is that correct?

Ms. HARRINGTON. Yes, sir, that's correct.

Senator GRAHAM. In 2010 the agreement was amended to say that the disposition path would be MOx, is that correct?

Ms. HARRINGTON. That is correct.

Senator GRAHAM. We rejected vitrification because if you're going to vitrify all of this stuff we're not going to store it at Savannah River. We're not a storage site.

So if we do something other than MOx, how can we meet our obligations under the treaty?

Ms. HARRINGTON. First I'd like to clarify that in this assessment pause that we have included in the budget MOx remains clearly on the table. It is not that we are disregarding MOx as a viable option.

Senator GRAHAM. Ms. Harrington, I don't mean to be rude. You're a very smart lady. It's not on the table. It's the pathway forward. It's not subject to debate. I wouldn't have had—I wouldn't have done anything I did last year if I thought there was one chance in a million that we'd be debating a year later whether or not MOx is the way to go. I don't want the \$100 million. I want to get this stuff off the table in America and particularly in Russia, given the times in which we live in.

So what I would suggest to you is that the \$2 billion overrun concerns me, too. I met with the Deputy Secretary of Energy, and here's what I'm willing to do. I'm willing to sit down with the Department of Energy and the contractor to try to get the cost down below \$8 billion.

Now, at Savannah River site the pit disassembly facility was going to be a third separate building. This is where you take the pit out of the warhead and that's what's blended down into MOx fuel. It's the plutonium bullet. We were able to avoid building that facility and save \$2 billion right there.

Over the past decade, Savannah River site has been very forward-leaning when it comes to saving money in a responsible manner. We've got 54 tanks full of Cold War residual material, high-level toxic waste, and we agreed back in 2002, I believe it was, to leave a portion of the waste in the bottom of the tank, in the heel of the tank, rather than scraping it all out, and that saved \$16 billion. We thought we could close the tanks up with some high-level waste that would be treated, and that saved \$16 billion.

So, Ms. Harrington, we in South Carolina and Georgia have tried to be good stewards of the taxpayer money, and I'm just here to tell you that I will work with the administration—I talked with Denis McDonough about this last night—to get the cost down. But I will not entertain for one minute a disposition plan other than MOx. We're halfway through. There is no other way to do it. We have an agreement with the Russians and now is not the time to break that agreement, given the world in which we live in. When it comes to studying another way to do it, count me out.

Have a good day.

Ms. HARRINGTON. Thank you, sir.

Senator HAGAN. All right.

Mr. Myers, can you please give us an unclassified summary now of the role of the STRATCOM Center for Combating Weapons of Mass Destruction to support planning for any contingencies with the chemical weapons in Syria?

Mr. MYERS. Thank you, Madam Chairman. Yes. The SCC, DTRA, and the Standing Joint Force Headquarters, working together as an integrated team, are working on planning across the Department of Defense. We are playing a key role in multiple planning initiatives. We are reaching out across DOD to identify pockets of chemical weapons expertise, capabilities, and equipment.

We have developed internally an entity called the Regional Contingency Team to bring the three organizations together in an effective and efficient manner, and together we are synchronizing planning efforts across the combatant commands, identifying and applying specialized WMD knowledge and expertise to the challenges at hand. We're looking to mitigate the gaps that might currently exist.

How that planning might be applied is obviously a decision for our leadership and for the President. But that's the best unclassified answer I can give you. I'm happy to go into more detail in closed session.

Senator HAGAN. Great.

Secretary Creedon, with the CTR program moving to countries outside Russia and the former Soviet Union, we understand you have developed a strategic approach or guidance for prioritizing what activities the CTR program will undertake. Please explain this strategic approach and what metrics you will use to assess the success of future programs?

Ms. CREEDON. Thank you, Senator. The new CTR strategic guidance has just been issued, and I should also mention we're also working on a broader guidance document that would be more largely for WMD. The combination of these two should help the Department focus on the threats as they emerge to prevent the acquisition, to prevent the transition of technologies, and if all that fails to be able to interdict. It's some of what I mentioned in my opening statement.

But mostly we want to be able to position the Department to be responsive to all of the various national security objectives and threats. We want to make sure that we've integrated all of the tools within WMD to bring to this program. And we want to make sure that as we go forward that we are good stewards of the taxpayers' money, so that DOD really focuses on what DOD does best and works in collaboration with our international and inter-agency partners to do things that they can do. The transportation determination in our partnership with DOE is an example of one of those things.

The other thing that we are going to continue to focus to the extent that we are able to do so in a cooperative environment is dismantle and destroy where we can. We want to make sure that what's out there is also accounted for and secure. And then we want to also expand our capabilities to prevent and detect. So understanding when something is missing, detection of when it's in transit, figuring out how to interdict it.

All of these are the construct in which we'll work with the CTR program going forward.

Senator HAGAN. Mr. Myers, is this your chart?

Mr. MYERS. Yes.

Senator HAGAN. On the second page, can you just go over this chart with me? I love charts, by the way.

Mr. MYERS. Madam Chairwoman, you have me at a disadvantage. I don't have that chart.

Senator HAGAN. Oh, you don't have the chart.

Mr. MYERS. But I probably have it memorized, if you give me a hint.

Senator HAGAN. Well, why don't we give you a copy of it.

Mr. MYERS. That would be great. Thank you.

Senator HAGAN. Since you've got the chart too, right? [Pause.]

Then what I really want to ask you—if you can give him the second one, too.

The way I read this, you're showing the reductions as of 2013, the target in 2017, and the percent achieved.

Mr. MYERS. Yes, Senator.

Senator HAGAN. Then did you get the next one, too?

Mr. MYERS. Yes, Senator, I did.

Senator HAGAN. The one, "Nonproliferation, Counterproliferation, and Consequence Management"?

Mr. MYERS. Yes, Senator.

Senator HAGAN. That's the one I need, where you talk about best practices and best of breed or behavioral hallmarks. Explain "best of breed" to me?

Mr. MYERS. Best of breed—the Defense Threat Reduction Agency does not have a laboratory. We do not have a specific relationship with any one entity, which leaves us with the flexibility to search high and wide for the best technology and the best performers to confront specific challenges, whether that be in the nuclear, chemical, or biological arena, whether that be in the nonproliferation, counterproliferation, or consequence management.

So when we say "best in breed," we have the opportunity to reach across the entire U.S. Government, academia, as well as the private sector here in the United States. We utilize that flexibility to the maximum extent possible, because many of the challenges that we're dealing with are obviously very, very difficult and very, very complicated. Very often we have to build partnerships, build partnerships between different entities in different sectors of our government and in the private sector.

And we do that, and the nonproliferation, counterproliferation, and consequence management is really the scope, the breadth and depth of our mission area.

Senator HAGAN. "Consequence management" is defined from your perspective as? Explain that section?

Mr. MYERS. Well, nonproliferation, let me start there, I would argue that that is when we're preventing the proliferation of weapons, not allowing them to leak or to move forward. Counterproliferation I would suggest is defeating those weapons or materials should they proliferate from their source. And consequence management obviously is the worst case scenario, in which we are responding to a WMD event or accident or incident.

Senator HAGAN. Thank you.

Senator FISCHER.

Senator FISCHER. If I could ask all of you this question. The GAO has reviewed a number of your programs and often recommended a comprehensive review of structure and scope to better target initiatives and prevent overlap. Can you describe what measures are in place to prevent that duplication across the proliferation prevention programs? Mr. Myers, let's begin with you.

Mr. MYERS. Senator, I would tell you that we work very, very hard with our partners at NNSA and the State Department to ensure that we do not have overlap and duplication. In fact, the three of us meet on a regular basis. The employees of the organizations meet almost on a daily basis and communicate on an hourly basis to ensure that we do not duplicate, to ensure we do not overlap.

The recommendations that have been made in the past in terms of implementation, especially at the Defense Threat Reduction Agency, have been adopted and we have moved forward with them.

Senator FISCHER. Could you give me an example of one?

Mr. MYERS. Yes, I'll give you a good example. In one case we had cost overruns in some of the cooperative projects that we were doing in Russia, and they made a number of different recommendations in terms of meeting on a regular, semi-annual basis to ensure that both the United States and the Russian side remained on the very same page, with the same goals, the same metrics in mind to make sure. It was a very commonsensical recommendation that we concurred with and have been implementing ever since, and it has proven very, very effective in terms of identifying potential differences of opinion long before they become an issue for programmatic purposes.

Senator FISCHER. Thank you.

Madam Secretary, do you have anything to add to that?

Ms. CREEDON. Just very briefly. Not only do we all meet with a pretty high degree of frequency, but we also bring in our State Department partner as well, so that we understand what the overarching U.S. Government approach is.

The other thing is, as you might imagine, this is a very active White House in this field as well. So we have a lot of meetings with the White House, with the various inter-agency teams, to tackle various problems so that we make sure that we're all coordinated in our various approaches. Then amongst the two Departments, we also pretty carefully decide who's going to do what and who's going to focus on something. So whereas DOE focuses on nuclear materials, DOD will focus on the delivery systems. DOD focuses on bio and chem, DOE doesn't do that.

Senator FISCHER. You mentioned you work with the State Department. Do you also work with your combatant commands?

Ms. CREEDON. We work very closely with our combatant commands, particularly on the planning side, and that was what Mr. Myers was talking about. DTRA provides a lot of the technical support to the combatant commands to do the planning and the policy role is to work with the combatant commands as they develop those plans. So there's a good relationship. We sort of get the commands coming and going. DTRA helps them build the plans and we help review the plans.

Senator FISCHER. If you look at a timeline, I would guess that it's the combatant commands that possibly come up with a nation that you should be looking at partnering with? Or how does that work? Who finds this?

Mr. MYERS. Senator, much of what we work on is focused on where the threat is in terms of denying that, those threats from coming to fruition. But we work hand in glove with the combatant commands. DTRA and the SCC have a physical presence in each of the commands to facilitate communication and the discussion back and forth.

So I would suggest to you that as we do the planning, as we provide the subject matter expertise to the combatant commands and share with them where we believe the threats are, why we believe we should move in one direction or another, it really does become a team effort, that we then move forward and obviously bring to Congress for authorization and appropriation.

Senator FISCHER. Ms. Harrington?

Ms. HARRINGTON. Both Mr. Myers and Ms. Creedon have talked about this coordination mechanism. In fact, we meet next week. It is called "the bridge meeting" because it bridges among us. It is a standing group. It meets typically on a quarterly basis. We have some standing working groups of our staffs underneath it, other ad hoc groups. Sometimes they look at exactly the question you asked, which is which countries are ripe for engagement, where must we think creatively about how to engage.

So we task those sorts of things to our staffs. Next week we will look specifically at what the impacts of the 2014 budget might have on our ability to collaborate and cooperate and really have good synergy.

Another issue that's already come up today is the transportation process that DOD is going through. One of the reasons we launched that is because we discovered and were able to discuss in this mechanism the fact that we ended up on a removal from a country using the Transport Command assets, but not having a way to actually coordinate that directly with the CTR program because the mechanism wasn't in place.

So we figured out that it actually costs the U.S. Government double, because it wasn't in place, what it would have cost had it been in place. So we just decided, okay, let's get this finished, let's set this up so that in the future we have the flexibility and the cost effectiveness to be able to do this in the most efficient way.

So I think those are just a couple more examples of why this interaction among us, including among our R and D groups and at other levels, is so valuable, not only in terms of program implementation, but in terms of budget efficiency.

Senator FISCHER. On your core groups that meet, does that stay the same group all the time or does it vary depending on what nation the United States may be in at the time?

Mr. MYERS. We obviously will augment the working groups with regional expertise or specific subject matter expertise if it's needed.

Senator FISCHER. Where does the expertise come from?

Mr. MYERS. Well, a little bit from all of us, quite honest with you: obviously, Secretary Creedon's colleagues in OSD-Policy, our colleagues at NNSA, as well as from the State Department, their

country desks, their regional bureaus, and obviously the technical support comes from all three of us as well, and sometimes from outside our three organizations and the State Department.

Senator FISCHER. Thank you very much.

Ms. CREEDON. Just to add there, not only from Policy; we pull in all of our regional offices, and we also then can tap into the Joint Staff as well and so bring in their expertise.

Ms. HARRINGTON. We also have staffs at a limited number of embassies overseas in critical countries. So both DOE and the Department of Defense—

Ms. CREEDON. Work with State.

Ms. HARRINGTON.—work with State and work through the embassies to also engage that network in our work.

Senator FISCHER. Thank you.

Senator HAGAN. I have one more question I wanted to ask in the open forum and certainly Senator Fischer can, too. But I wanted to ask: Ms. Harrington, last year I asked a similar question and I wanted to follow up on it this year. It pertains to the production of the medical isotope molybdenum-99 using low enriched uranium and converting Russian reactors that produce it from highly enriched to low enriched uranium. What is the status of that work?

Ms. HARRINGTON. Thank you, Senator. As you know, the minimization of the use of highly enriched uranium for civilian purposes is one of our high target programs, because that is where a good deal of the highly enriched uranium lies across the world.

In Russia we are working on two tracks. One is to convert their research reactors in general to low enriched uranium. We have completed six studies in that area. Two reactors are ready to go forward. The Russians have made a public statement that they intend to complete the first conversion by the time of the 2014 nuclear security summit. So that's a good step in the right direction. The second reactor should follow soon after that, and hopefully more after. The Russians have made significant public statements to the effect that they will underwrite a significant portion of the cost of those conversions and shutdowns.

On the moly-99 conversion, we also are working with them on that, but in a somewhat different venue. The Nuclear Energy Agency, which is headquartered in Paris, has a committee that looks specifically at the isotope production worldwide. Through that committee, we are developing a global strategy for full-cost recovery production of LEU-based moly-99.

As you may know, we've already made significant progress with our European partners moving in that direction. South Africa really was the first major step in that direction. Russia is moving in that direction and we will continue to push on them both bilaterally and through the NEA. That is an important goal for us.

We have worked within the administration, I think, to do some fairly creative things that we're holding out as models to other countries. For example, the Veterans Administration, Medicare, government programs that deliver medical services and use this isotope in those medical services can give preference to LEU-based moly-99. This can do a lot in terms of encouraging the marketplace to move in that direction.

So those are things that indeed are very helpful. We also are working with national regulatory agencies like our Federal Food and Drug Administration to license the LEU-produced moly-99 so it can be used in more countries.

But that's a long answer and it's not totally specific to Russia, but it's a complicated, more global issue because, as you know, ensuring a consistent supply of this is absolutely critical.

Senator HAGAN. Thank you.

Other questions?

Senator FISCHER. Madam Chair, I yield back my time. Thank you.

Senator HAGAN. What I'd like to do now is we will adjourn this session and we will go over to the Capitol and to the closed session. Thank you.

[Whereupon, at 3:25 p.m., the subcommittee adjourned.]