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HEARING
ON
NATIONAL DEFENSE AUTHORIZATION ACT
FOR FISCAL YEAR 2014
AND
OVERSIGHT OF PREVIOUSLY AUTHORIZED
PROGRAMS
BEFORE THE
COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED THIRTEENTH CONGRESS
FIRST SESSION

SUBCOMMITTEE ON STRATEGIC FORCES HEARING
ON
**FISCAL YEAR 2014 BUDGET REQUEST FOR
ATOMIC ENERGY DEFENSE ACTIVITIES
AND NUCLEAR FORCES PROGRAMS**

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FISCAL YEAR 2014 BUDGET REQUEST FOR ATOMIC ENERGY DEFENSE ACTIVITIES AND NUCLEAR FORCES PROGRAMS

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON STRATEGIC FORCES,
Washington, DC, Thursday, May 9, 2013.

The subcommittee met, pursuant to call, at 9:01 a.m., in room 2118, Rayburn House Office Building, Hon. Mike Rogers (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. MIKE ROGERS, A REPRESENTATIVE FROM ALABAMA, CHAIRMAN, SUBCOMMITTEE ON STRATEGIC FORCES

Mr. ROGERS. Good morning. This hearing of the House Armed Services Subcommittee on Strategic Forces will be called to order. I appreciate all the witnesses' attendance, and your preparation for this hearing. I know it takes time and energy, and we do appreciate you doing it. It makes a difference for us.

Because we have got such a large panel, I and the ranking member have agreed we are going to dispense with our opening statements and submit them for the record and go straight to your opening statements. So, if you could summarize your opening statement in about 3 minutes, then that will give us more time for questions.

So with that, we will start with Ms. Creedon. You are recognized for 3 minutes.

[The prepared statement of Mr. Rogers can be found in the Appendix on page 41.]

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

Secretary CREEDON. Thank you. Good morning and it is nice to be back again.

Mr. ROGERS. Is your microphone on?

Secretary CREEDON. It is. It says, talk.

Mr. ROGERS. Okay, you need to pull it closer then.

Secretary CREEDON. Okay.

Mr. ROGERS. There you go.

Secretary CREEDON. Okay. Again, thank you and it is good to see you all again. My remarks today will highlight a few of the topics that are addressed in the written statement, which of course I would like to submit for the record. The Global Strategic Affairs Office leads the Department of Defense's efforts to develop the

strategies and policies to maintain a safe, secure, and effective nuclear deterrent for the Nation, and for our allies and partners as long as nuclear weapons exist, at the same time, moving toward the President's vision of a world without nuclear weapons.

We continue to work toward this vision, while also supporting the many demands of a complex global security environment, and assuring our allies and partners. Under the new START [Strategic Arms Reduction Treaty] treaty, the United States and Russia have made significant progress. But our two nations still account for the vast majority of the world's nuclear weapons, and for this reason our focus for the next stage of arms control remains, bilateral efforts with Russia. Although the timing and framework for the next round of these negotiations are not settled, we look forward to discussions with Russia that will address reductions in the number of deployed, and nondeployed nuclear weapons, both strategic and nonstrategic as directed in the Senate's resolution of ratification to the new START treaty.

As you know, the Administration has been conducting a nuclear posture review implementation study to review our nuclear deterrence requirements, and operational plans to ensure they address today's threats. The analysis is not yet complete, but our preliminary view is that continuing modernization is essential, and that further reductions should be possible. While the details of this work are highly classified, the Department remains committed to sharing relevant aspects of this analysis with the senior leaders of the defense committees when the effort is complete.

The current fiscal situation continues to put pressure on the entire Department of Defense. As sequestration cuts are implemented, and as budgetary uncertainties continue, the Department will make difficult decisions, and assume more risks. These risks, however, will not alter our prioritization of the nuclear mission. The 2010 nuclear posture review concluded that the United States will maintain a triad of ICBMs [Intercontinental Ballistic Missile], SLBMs [Submarine-Launched Ballistic Missile], and nuclear-capable heavy bombers. And the President's fiscal year 2014 budget request supports modernization of these nuclear forces.

As Secretary of Defense Hagel stated, providing the necessary resources for nuclear modernization of the triad should be a national priority, and that remains the policy of this Administration.

And, the last thing I want to touch on right now is that the U.S. remains committed to extended deterrence and assurance of our allies and partners, including NATO [North Atlantic Treaty Organization]—the NATO Alliance, Japan and the Republic of Korea. And lately, this is particularly true on the Korean Peninsula.

Thank you very much, and I look forward to your questions.

[The prepared statement of Secretary Creedon can be found in the Appendix on page 43.]

Mr. ROGERS. Thank you very much, Ms. Creedon. For the record, I should have more properly introduced her. She is Assistant Secretary of Defense for Global Strategic Affairs, U.S. Department of Defense.

And next we will recognize General Robert Kehler, Commander, U.S. Strategic Command, you are recognized for 3 minutes.

**STATEMENT OF GEN C. ROBERT KEHLER, USAF, COMMANDER,
U.S. STRATEGIC COMMAND, U.S. AIR FORCE**

General KEHLER. Well, Mr. Chairman, thanks for the opportunity to present my views this morning. In today's uncertain and complex world, STRATCOM's [U.S. Strategic Command] fundamental purpose remains constant. With the other combatant commands, we must deter, detect, and prevent attacks against the United States; assure our allies and friends of our security commitments to them; and if directed, employ appropriate force to achieve national objectives if deterrence fails.

Deterrence today is shaped to match the characteristics of specific scenarios and actors and it is pursued with a broader array of tools than just nuclear forces. However, as long as nuclear weapons exist, my number one priority will be to deter nuclear attack and assure allies and friends with a safe, secure, and effective nuclear force. To do this, my objective remains to field a credible New START-compliant triad of survivable ballistic missile submarines, responsive intercontinental ballistic missiles, and flexible nuclear-capable heavy bombers that can present any would-be attacker with insurmountable problems.

This force must be supported by a comprehensive warning system, assured command and control, and a highly specialized nuclear weapons complex, all staffed by a dedicated and experienced military, civilian, and contractor team. While it is appropriately smaller than what we fielded in the Cold War, I can assure you that today's force is safe, secure, and effective. However, it will not remain that way unless we keep the nuclear weapons complex, the delivery system modernization, and sustainment programs on a stable and committed course.

I believe we have crafted and presented a sound strategy and implementation plan to ensure a continued credible deterrent in fiscal year 2014 and beyond, but the plan contains risk. Sequestration adds additional risk, as well as the possibility of further budget reductions.

Mr. Chairman, it is a privilege to lead the outstanding men and women of STRATCOM. They are our greatest and most enduring strength. All of these amazing professionals will cope in the near term. I remain extremely concerned about the longer term impacts of fiscal uncertainty on them and their families.

We face difficult challenges, Mr. Chairman, and I look forward to working with you to address them as we go forward. Thank you and members of the subcommittee for your support, and I look forward to your questions.

[The prepared statement of General Kehler can be found in the Appendix on page 55.]

Mr. ROGERS. Thank you General Kehler. The Chair now recognizes Ms. Neile Miller, Acting Administrator and Principal Deputy Administrator, National Nuclear Security Administration. Ms. Miller, you are recognized for 3 minutes.

STATEMENT OF HON. NEILE L. MILLER, ACTING ADMINISTRATOR AND PRINCIPAL DEPUTY ADMINISTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION

Ms. MILLER. Thank you Mr. Chairman, and thank you to the members of the subcommittee for having me here today to discuss the President's fiscal year 2014 budget request for the Department of Energy's National Nuclear Security Administration. Your ongoing support for the women and men of the NNSA [National Nuclear Security Administration] and the work that they do, and your bipartisan leadership on some of the most challenging national security issues of our time, has helped keep the American people safe, and enhanced global security.

The President's \$11.7 billion fiscal year 2014 budget for NNSA allows us to continue to implement his nuclear security agenda. As you know, we are also deeply engaged in efforts to realize President Obama's vision for a world without nuclear weapons, free from the threat of nuclear terrorism, and united in our approach toward shared nuclear security goals.

Most recently in his 2013 State of the Union Address, the President continued to highlight the importance of his nuclear strategy, and pledged to, "Engage Russia to seek further reductions in our nuclear arsenals, and continue leading the global effort to secure nuclear materials that could fall into the wrong hands. Because our ability to influence others, depends on our willingness to lead and meet our obligations."

His budget for fiscal year 2014, reaffirms his strong support for our nuclear security missions. I want to assure you that NNSA is being thoughtful, pragmatic, and efficient in how we achieve the Nation's nuclear security objectives, and shape the future of nuclear security. As someone with many years of Federal Government experience at the nexus of program and budget, I can tell you that while we are challenged to be successful in a time of fiscal austerity and budget uncertainty, we are also dedicating ourselves to driving efficiencies into our program so that we can make the best use of taxpayer dollars with which we are entrusted.

And we are holding everyone, from our contractors to our Federal employees, accountable. Above all, we are challenging ourselves to reject ways of doing business that are holding us back from this, but which has survived long into the post-Cold War era, simply because they are the way we have always done it.

The need to strategically modernize our facilities, infrastructure, and weapons systems is urgent, but so is the need to modernize how we do what we do. We must, and we are evaluating our programs and challenging the assumptions for everything we do, to rethink the underlying premises, and ensure that we are charting a path to the future that is well reasoned, responsible, and reflects the best way of doing business today.

As the President has committed, NNSA is working to make sure that we have the infrastructure, weapons systems, and supporting science to certify the Nation's nuclear weapons stockpile through strategic modernization investments, and we are working to implement the most ambitious nuclear nonproliferation agenda in the world. Whether or not we were facing this moment's budget uncertainties and fiscal constraints, we have a responsibility to prioritize

what we do, and do it in a way that makes sense, not only to us, but to you, to our partners at the Department of Defense, our international partners, and above all to the American taxpayers.

If we want to see the nuclear security agenda move forward, then we must ensure that we have essential enabling capabilities, including infrastructure, to support the nuclear navy and strong national laboratories that are the backbone of the nuclear security enterprise. And we must continue to chart the path of nuclear security together.

We are doing the work the American people need us to do, and the President's budget will allow us to continue doing that work. We at the NNSA are working hard to align ourselves for the future, and your continuing support has been a vital part of that.

I again thank you for having me here today, and I look forward to answering your questions.

[The prepared statement of Ms. Miller can be found in the Appendix on page 78.]

Mr. ROGERS. I thank you, Ms. Miller.

The Chair now recognizes Dr. John Harvey, Principal Deputy Assistant Secretary for Nuclear, Chemical, and Biological Defense Programs, U.S. Department of Defense.

Dr. Harvey, you are recognized for 3 minutes.

STATEMENT OF DR. JOHN HARVEY, PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR NUCLEAR, CHEMICAL, AND BIOLOGICAL DEFENSE PROGRAMS, U.S. DEPARTMENT OF DEFENSE

Dr. HARVEY. Chairman Rogers, Mr. Cooper, members of the committee, I serve as the Principal Deputy Assistant Secretary of Defense in DOD's [Department of Defense's] acquisition, technology and logistics organization, we call it AT&L. AT&L chairs the Nuclear Weapons Council and is the Department's lead for engaging the Department of Energy in all aspects of U.S. nuclear weapons programs.

My written statement outlines the progress we have made to sustain and modernize our nuclear stockpile and supporting infrastructure, our nuclear delivery platforms, and the nuclear command and control system that links nuclear forces with presidential authority. Congressional support for the President's fiscal year 2014 budget request is essential to continued progress in these areas.

But I want to touch on a couple of other points. The fiscal year 2014 request also enables progress on a modern nuclear infrastructure that will eventually provide the Nation with capabilities to address technical problems in the stockpile, or respond to future adverse geopolitical challenges, and do so with a smaller stockpile than we have today.

Along these lines, construction of a new facility at Y-12 [National Security Complex] in Oak Ridge, Tennessee, is being aggressively pursued by NNSA to replace the existing aging and unsupportable facility currently carrying out HEU, highly enriched uranium, operations at Y-12. Budget realities, however, have resulted in deferral of the facility at Los Alamos—we call it CMRR

[Chemistry and Metallurgy Research Replacement Nuclear Facility]—that would provide needed plutonium capabilities.

In light of deferral, we are taking a step back to assess how best to achieve the Nation's plutonium needs, including exploration of a modular facility concept, which could provide a more flexible and fiscally affordable approach to acquiring needed capabilities.

To mitigate the risk of deferral, NNSA's \$120 million reprogramming request will help achieve an interim production capacity at Los Alamos of 30 pits per year by 2021, sooner than we would have achieved with CMRR. We urge your support for this reprogramming request.

I would like to conclude by noting that the two Departments have strengthened their partnership in the Nuclear Weapons Council over the past year in advancing a shared commitment to a safe, secure, and effective nuclear deterrent. During the past year, DOD and NNSA collaborated on a joint review of DOD's nuclear warhead requirements and NNSA's funding options to meet those requirements. NNSA provided unprecedented transparency into its program and budgetary processes that support it.

The comprehensive assessment led to a balanced approach involving some further adjustments to DOD's modernization schedules and some adjustments to resource allocations within NNSA's program.

In a separate effort the two Departments are advancing a 25-year baseline plan to synchronize schedules for warhead life extension programs, modern delivery platforms that carry those warheads, and initial operations for supporting infrastructure. Further work is under way to confirm that this baseline is supportable and executable over the long term.

And let me conclude there. Thanks for the opportunity to speak.

[The prepared statement of Dr. Harvey can be found in the Appendix on page 94.]

Mr. ROGERS. Thank you, Dr. Harvey.

Next, we recognize Mr. David Huizenga, Senior Adviser for Environmental Management, U.S. Department of Energy.

Mr. Huizenga, you are recognized for 3 minutes.

STATEMENT OF DAVID G. HUIZENGA, SENIOR ADVISOR FOR ENVIRONMENTAL MANAGEMENT, U.S. DEPARTMENT OF ENERGY

Mr. HUIZENGA. Thank you, Chairman Rogers, Ranking Member Cooper, and other members of the subcommittee. I am honored to be here today with my colleagues. I would like to discuss the positive things that the Office of Environmental Management is doing for the Nation and address any questions you may have relative to our fiscal year 2014 budget request.

Our request of \$5.3 billion for defense-funded activities will enable our office to continue the safe cleanup of the environmental legacy brought about from five decades of nuclear weapons development and Government-sponsored nuclear energy research. Our cleanup priorities are based on risk and our continued efforts to meet our regulatory compliance commitments. Completing cleanup enables other crucial DOE [Department of Energy] missions to con-

tinue and ensures the reduction of one of the U.S. Government's largest liabilities.

The Office of Environmental Management has made significant progress in accelerating cleanup across the United States. For example, in 2009 the total footprint of EM's [Office of Environmental Management] cleanup sites was 931 square miles. As of January this year, this has been reduced by 74 percent. In 2012, at the Savannah River site in South Carolina, EM achieved a key milestone with closing two high-level waste tanks. Also, today EM has sent more than 11,000 shipments of transuranic waste to the Waste Isolation Pilot Plant in New Mexico for safe disposal.

These accomplishments have been possible due to an outstanding Federal and contractor workforce. The safety of these workers is a core value that is incorporated into every aspect of our program. We maintain a strong safety record and continuously strive to an accident- and incident-free workplace by aggressively sharing lessons learned across our sites. We are training senior management and working to achieve an even stronger safety culture within our program and thereby ensure safe construction and operation of our facilities.

In recognition of EM's improvements in contract and project management, earlier this year the GAO [U.S. Government Accountability Office] removed the bulk of EM's capital asset projects, and indeed, all projects with values less than \$750 million were removed from the high-risk designation. We are deeply committed to excellence in contract and project management, and intend to keep these projects off the Government's GAO high-risk list.

In fiscal year 2014, we are positioned to continue making progress toward our cleanup goals. For example, in the Office of River Protection at Hanford, Washington, we will continue construction of the low activity waste facility, complete construction of the analytical laboratory, and continue to retrieve the single shell tanks in the C tank farm.

At Savannah River, we will close another two high-level waste tanks. In Idaho, we will continue progress in treating the last 900,000 gallons of liquid waste and ship 4,500 cubic meters of transuranic waste to WIPP [Waste Isolation Pilot Plant]. At Los Alamos, EM will complete the processing and removal of 3,700 cubic meters of above-ground transuranic waste.

In closing, we will continue to apply innovative cleanup technologies and strategies so that we can complete our work safely, on schedule, and within cost, thereby demonstrating a solid value to the American taxpayers.

The Office of Environmental Management has made steady progress and with your help will continue to do so.

Thank you.

[The prepared statement of Mr. Huizenga can be found in the Appendix on page 103.]

Mr. ROGERS. Thank you.

The Chair now recognizes, Mr. Peter Winokur, Chairman, Defense Nuclear Facilities Safety Board. You are recognized for 3 minutes.

**STATEMENT OF HON. PETER S. WINOKUR, CHAIRMAN,
DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

Dr. WINOKUR. Thank you, Chairman Rogers, Ranking Member Cooper, and members of the subcommittee. I have submitted a written statement for the record describing the board's mission and highlighting a number of safety issues that are particularly important to ensuring adequate protection of the public and workers at DOE's defense nuclear facilities.

I am convinced that safety is an enabler to DOE's mission, a mission that is crucial to the wellbeing of our Nation. I will provide a very brief summary of my written testimony for your consideration today.

The board's budget is essentially devoted to maintaining and supporting an expert staff of engineers and scientists, nearly all of whom have technical master's degrees or doctorates to accomplish our highly specialized work.

The President's budget request for fiscal year 2014 includes \$29.915 million in new budget authority for the board. It will support 120 personnel, the target we have been growing toward for several years. We believe this level of staffing is needed to provide sufficient independent safety oversight of DOE's defense nuclear complex, given the pace and scope of DOE activities.

DOE and NNSA are designing and building new defense nuclear facilities with a total project cost on the order of \$25 billion. I cannot overstate the importance of integrating safety into the design of these facilities at an early stage. Failing to do this will lead to surprises and costly retrofits later in the process.

The risk posed by the plutonium facility at Los Alamos National Laboratory remains among the board's greatest concerns. An earthquake resulting in collapse of the facility would likely result in very high radiological doses to the public in nearby towns. The board continues to urge DOE to take meaningful, near-term action to mitigate this risk.

The board is also devoting considerable resources to its oversight of the design and construction of the Hanford waste treatment and immobilization plant, which is essential to the safe stabilization and disposal of 53 million gallons of high-level waste stored in 177 underground tanks.

Finally, the need to continually assess and maintain a strong safety culture throughout the DOE defense nuclear complex has emerged as an imperative for DOE, prompted by board recommendation 2011-1, Safety Culture at the Waste Treatment and Immobilization Plant. DOE has recently assessed safety culture across the complex and determined that much improvement is needed.

Let me add in closing that the bulk of the issues that the board has safety concerns about are addressed at the staff level without any need for a formal board letter or recommendation. I am confident the board is working with DOE's liaison to the board to establish an increasingly effective working relationship between the board and DOE.

This concludes my statement. I will be happy to answer any questions you have.

[The prepared statement of Dr. Winokur can be found in the Appendix on page 114.]

Mr. ROGERS. Thank you, Dr. Winokur.

And the Chair now recognizes himself for 5 minutes for questions.

General Kehler, you and I met yesterday and discussed briefly the breaking news about the 17 officers who were decertified from alert duty at Minot. For the committee, and we are going to reserve judgment until the DOD and Air Force has made their findings, but could you tell all of us generally what these officers' responsibilities were and then what happened, to the best of your knowledge?

General KEHLER. Yes, Mr. Chairman. The nuclear-capable units have the highest standards and they undergo very, very difficult inspections. In those inspections, which are conducted by the Services, the inspectors look at a number of different categories of activities within one of these units.

One of those categories—and each are graded separately—one of those categories is the performance of the missile operations crews. These are the crewmembers that man the underground launch control centers, essentially. They are very young. They are typically second lieutenants, first lieutenants, captains in some cases. And again, their standards are very high.

During this particular inspection which, again, was an Air Force inspection, not a Strategic Command inspection, as I understand it, there were some performance issues with that piece of the overall inspection that dealt with the missile crewmembers themselves. Typically, that is written tests, by the way, or they take them into a simulator and they have them perform their paces in a simulator. I have taken many of those myself over the years. They are extremely difficult and filled with scenarios that you typically would not see in the real world, so to speak.

This has my personal attention. Because it is a nuclear unit, I review the inspection results of all of the nuclear units, both in the Air Force and the Navy as they come across my desk. In some cases, the Strategic Command inspector general observes those. They did not observe this one, but in some cases they do observe these.

And so each of these gets my personal attention. This one in particular has my personal attention. I have spoken with the commander of Air Force Global Strike Command, the parent unit that is involved here. I have gone back and I have looked at the inspection results—the nuclear inspection results of this particular unit over the last 3 or 4 years, all of which have been satisfactory, by the way.

I have asked the Strategic Command inspector general to go review this specific inspection and the responses to it. I think the unit is moving aggressively. I think you saw that in some of the press reporting, the very aggressive steps being taken here for decertification of some of the crewmembers, et cetera.

I believe they are working on getting to root cause. And as I sit here today, I don't see anything that would cause me to lose confidence in that ability's unit to perform the mission safely and effectively. So, I will continue to watch this very carefully. I know

the Air Force is digging into this very deliberately. But at this point, sir, I remain confident in that unit's ability to perform its mission.

I do think they reacted very aggressively to the mistakes that they saw. They don't accept those mistakes. And at some level, I think what you are seeing here is a product of the increased scrutiny and the increased diligence that is going into these inspections and the responses to them.

So, again, I would prefer to have a little bit more fidelity, I think, on what the Air Force will eventually discover here as they continue to dig for root causes. But today, I would be concerned if every unit had 100 percent passing. I think that would suggest to me that weren't being tough enough in inspections.

So, the fact that errors were made in an inspection in and of themselves doesn't trouble me much. It is what are the root causes and what are the consequences. And again, sir, to date, I don't see any reason to have less than full confidence in this unit. But we are going to continue to work with the Air Force on this, and I have in fact asked my inspector general to work with the Air Force to make sure that we have a complete picture.

Mr. ROGERS. Thank you very much.

Secretary Creedon, the fiscal year 2014 budget request by the President asks for \$75 million for the implementation of New START. But it is difficult for this committee to evaluate whether or not that money is needed, given that we are still waiting on the report from the fiscal year 2012 NDAA [National Defense Authorization Act] on how New START will be implemented.

An example, some of the funding is for an environmental impact study that the OSD [Office of the Secretary of Defense] imposed on the Air Force relative to shutting down squadrons or wings of our ICBMs. And we don't really know if we should do that or not in the absence of this report.

Can you give us some idea as to when we get that report?

Secretary CREEDON. Excuse me, yes, sir.

As you know, the New START treaty requires compliance with essential limits by February of 2018. The Department is on track now to ensure that the compliance with the treaty is achieved, and at the moment, it looks like compliance can be achieved with about a 6-month window to spare.

So what is going on right now is looking at all of the various alternatives that are available to the Department for the various reductions. And each of the Services is now doing all of the necessary preliminary work that they would have to do. So that is where this money is going. They are doing engineering studies. They are doing the whole range of studies that would allow them to implement the various decisions when there is a decision.

So, what we are doing is we are looking at when compliance has to be achieved. We are looking for the various—at the various options in the Services. And right now, the decision on what exactly that new force—the New START force structure will look like will be made at the end of this calendar year. And at that point, it will then be implemented in 2015, and that will then provide enough time.

So, we are trying to fully analyze all the options, provide enough flexibility to make sure that we have got the right decision and still come into compliance with New START in 2018. So it is not like we are doing nothing. There is actually a tremendous amount of work going on and preliminary work going on. But it is all preparatory for the actual decision.

So, each Service is doing what they need to do.

Mr. ROGERS. Well, we appreciate your thoughtful preparation, but we want the Administration to understand that your compliance is going to require money. And this committee is not going to authorize money until we get the report. So, I would urge you to help us get that report so we can have some thoughtful deliberation as to what money we should provide.

And with that, I will yield to my friend and colleague from Tennessee, the ranking member, Mr. Cooper.

Mr. COOPER. Thank you, Mr. Chairman.

I appreciate the witnesses being here, and I appreciate your individual and collective expertise. I hate to ask the painful question about how sequestration will affect your work, but I think we need to hear from each one of you, assuming Congress doesn't intervene and reduce the cuts, or even give you minimal flexibility, what impact that would have on your work.

I noted in Dr. Winokur's testimony, he was very specific, saying his travel budget would be cut 29 percent and your advisory and contract budget by 76 percent. I know it is hard to be that specific probably, but we need to know the impact of Congress on our current course, on your activities.

So, Ms. Creedon, would you begin?

Secretary CREEDON. Well, I will take that, sir, from a couple of different perspectives. One is just with respect to the Office of Policy, which I know there is usually not much discussion on, but the Office of Policy is also suffering dramatically from the sequestration cuts.

And so initially, the impact to our workforce, which frankly has been under a hiring freeze for about 3 years now, and so as people leave, the existing workforce just continues to take on more work. We are looking at furloughs later this month. The exact number of days is still to be determined.

We are also looking at severely constrained travel budgets, which means that the Department is not adequately, in some instances, representing itself in various national and international bilateral and multilateral dialogues. So, from a policy perspective, this is sort of the guts of what we do. And so this is having an impact.

From the larger strategic perspective, we continue to worry about with respect to the implementation of all of the programs under the cognizance, particularly of, you know, just for me—for my Office of Space, Cyber, Nuclear Missile Defense and Nonproliferation, we worry about how the sequestration will impact all of those—from modernization to cyber to ensuring that we maintain our space assets in tip-top shape to provide the enablers that our Services need.

So, we look at it across the board.

Secretary CREEDON. Thank you.

Mr. COOPER. General.

General KEHLER. Sir, in Strategic Command the—sequestration really has an impact in two dimensions. There is a human dimension to this, and then there is a readiness dimension to this.

Let me start with the human dimension. Much like Ms. Creedon, our people are concerned about the budget uncertainty. The civilian workforce in particular—about 60 percent of my headquarters' workforce is Government civilians. And so, they have been salary-capped, they have had a hiring freeze and now they are facing furloughs—the possibility of furloughs.

What I have been saying here on Capitol Hill and elsewhere is, these are people who are willing to take risks for their country, but they are not willing perhaps to take financial risks for their families. And, so I am very concerned that as we go forward here, that damage has been done to our workforce in the human dimension that they will not forget.

We have gotten some anecdotal information from some of our new hires who have gone through our intern program, for example, who tell us that they will actively pursue careers elsewhere. That is disturbing. I can't put a quantifiable number on that and tell you that the sky is falling as a result, but that troubles me.

At the other end of the spectrum some of our people are telling us that they are—they could retire now, and maybe they will. So I—that is very disturbing to me.

The second thing is readiness. The Services have had to implement drastic measures in their operations and maintenance budgets to get to the sequestration totals, even with the recovery that has been allowed in terms of flexibility in the budget for the remainder of this fiscal year, we don't see that immediately because they have worked very hard to try to avoid those strategic force issues that STRATCOM deals with.

But, this is much like an avalanche: Once it starts, it is inevitable that it will continue, and we will see readiness reductions as time passes here. You can't go without flying hours the way the Air Force, for example, is having to do and not have that ultimately impact readiness, even while they are preserving as best they can, the flying hours that apply to STRATCOM's missions. So we—I can't take you to a unit today, and say, "That unit can't perform its STRATCOM mission." What I can show you though is that the steps that have been taken, the drastic steps by the Services, will in fact impact readiness in STRATCOM, we just haven't seen it developed yet, but we will.

Mr. COOPER. Ms. Miller.

Ms. MILLER. Thank you, Mr. Cooper.

I of course echo my colleagues' comments with regard to the human cost of this. I would add in two pieces that are particularly concerning to us in the NNSA in addition to the toll on our Federal workers. That would be people at the laboratories that we depend on.

And I would say that—and here I have to confess as a former budget director for DOE, I have to roll the endless continuing resolution uncertainty into the misery of this. When you have people who are working and are building a career on expectation of a project—whether it is a scientific project, an engineering project, whatever the project is—constantly having the rug pulled out from

under them—as my colleagues say, people look elsewhere for a career.

Yesterday morning, I—together with my colleague, Mr. Huizenga—met with people from one of our communities in one of the States. And, I have to say, I think the comments we heard—these were business leaders, presidents of chambers of commerce, small business owners—were frankly shocking at the effect this is already having on individuals who don't actually work for us, but are connected to the community.

So now having left—putting the people to one side for a moment, we have just finished talking about a program of work that we have worked diligently with all of us together in the nuclear security community to put us on a healthy path going forward for this stockpile, for the infrastructure, for force structure.

These are projects that are, as everybody notes, very expensive projects. And the longer we are put into uncertainty, money is cut, the plans that you have laid for a project are completely thrown out the window. It should come as certainly no surprise to anyone, this will not only undercut the view that the stockpile is healthy in the long run, but it will undercut the cost that we are quoting today as soon as we say it, it is probably not true anymore, because people who have been counting on a certain amount of money just don't have it. So that is of concern in many directions.

Mr. COOPER. Dr. Harvey.

Dr. HARVEY. The Nuclear Weapons Council is about to—at the request of the Congress—issue a document, a letter reaffirming that the Nuclear Weapons Council believes that the President's budget will, if funded, will meet the Department of Defense's requirements for nuclear—

Mr. ROGERS. Dr. Harvey will you pull the microphone closer to your mouth, please?

Dr. HARVEY [continuing]. Will reaffirm that the President's fiscal year 2014 request will meet the Department of Defense's modernization requirements and needs at acceptable risk.

Sequestration is not factored into that assessment. Any activity in sequestration that would delay or slow down a life extension program, or that would delay or slow down activities under way to restore an infrastructure that will enable—that carries out the work on those life extension programs would be of concern and would introduce additional risk into our assessment.

And, that is basically what I would say on that.

Mr. COOPER. Mr. Huizenga.

Mr. HUIZENGA. Yeah, I would like to echo what Administrator Miller said. We have direct impacts on our program. Several thousand of our contractor employees and workforce are currently either being—have been laid off or on furlough. So the—we have these direct impacts to those folks and their families, and equally importantly we are slowing down our cleanup mission. So it is important for us—and I appreciate the committee approving our reprogramming. We are trying to mitigate the impacts of the sequestration and the continuing resolution through this reprogramming effort. But, the bottom line is, things are slowing down.

Mr. COOPER. Dr. Winokur.

Dr. WINOKUR. Well, to put this in context to the board, we are two-tenths of 1 percent of DOE's budget in the defense nuclear area that we oversee, so obviously these cutbacks are important to us.

You mentioned travel. We are going down by 29 percent. There are no defense nuclear facilities in Washington, D.C., so when we can't travel it has an important impact on us.

In the contract area, I mentioned in my spoken testimony, we hired very specialized people to do concrete work, structural work, different kinds of analysis for us, and we are not gonna have them, but it also represents an opportunity cost for us. Things come up all the time. The board, to some extent, is reactive. There may be leaking tanks at Hanford where we need to form teams. There may be redesigns at the uranium processing facility or the uranium capabilities replacement project where we have to form new teams.

We found out recently that public hearings have been incredibly beneficial to us in terms of focusing issues through the Department, and resolving issues and defining a path forward. So there is a lot of opportunity cost we won't have as our budget is cut, and that is gonna make it difficult for us to provide the kind of oversight we would like to provide.

Mr. COOPER. Thank you, Mr. Chairman, I see that my time has expired.

Mr. ROGERS. Thank the gentleman. Chair now recognizes the gentleman from Arizona, Mr. Franks, for 5 minutes.

Mr. FRANKS. Well, thank you, Mr. Chairman. And, thank all of you for being here.

General Kehler, if I could go to you first sir. First let me just thank you for your service, the assets and the command that you oversee are vital to—not only to deterrence—to capability of this country, but it is a stabilizing force in the world, and I am grateful that such a profound responsibility rests upon the shoulders of someone as committed to human freedom and the cause of America in general, as you are, sir.

Let me, if I could, just suggest that all of us are interested in making sure that our network and energy infrastructure is positioned to respond and recover if we are ever faced with an attack on our homeland. And in your testimony, you say we must, "Continue to improve the protection and resilience of our networks." And I certainly agree with you completely.

Can you outline for us the significance of these networks and communication systems to the work that you do every day for our Nation, and perhaps specifically discuss what improvements you think need to happen now and what protections we need in the future to stay ahead of our enemies?

And please share with us the efforts STRATCOM is making to prevent effects of whether it is an enemy intrusion or cascading grid collapse or EMP [Electromagnetic Pulse] or GMD [Geomagnetic Disturbance] concerns or just natural disasters in general.

That is a lot to take in, but just the security of our networks in general, and the importance of what they do and what we are doing to make them impervious to some of these things.

General KEHLER. Yes, sir. First of all, the network is our central nervous system for the entire military establishment. We use our military in ways unlike any other military in the world gets used, and that is because we are able to network ourselves. We are able to surveil parts of the planet from space and network that information back to our forces. We are able to operate in smaller contingents forward that can act like a larger force, because they are networked together. So, the networks are critically important to us, and really—it is a trite way to say it, but it really enables the American way of warfare.

As a result of that, of course, potential adversaries are looking for ways to find vulnerabilities in that network and disrupt our ability to do the things with the network that we do today. So, I am charged, as part of my responsibilities, along with our sub-unified command, U.S. Cyber Command, to protect all of those networks. Some of them are especially critical to today's subject, the nuclear command and control system for example, which as Dr. Harvey described, links the President and his authorities to the nuclear forces.

So we have undertaken a series of reviews, to take a hard look at various parts of our network while we are moving with U.S. Cyber Command to put in place better protective measures today. We have looked individually at many portions of our networks. We have begun a more comprehensive end-to-end review of our networks, and I can tell you that in places where we find vulnerabilities, we address those as quickly as we can. I think that the nuclear command and control system today, I am very confident that that system is resilient and resistant to the kinds of network intrusions that we might see in our administrative networks, for example, where we know that we have some significant issues to go address.

But we are addressing all of these. The network disruptions that we might see take a lot of forms as you described. Electromagnetic pulse and people view that as a Cold War relic. It is not a Cold War relic; it is a potential that we could face in the future. And we have got to make sure that in our most critical networks that we are capable of operating through them. So this is a combination of engineering, it is a combination of information assurance, steps that we take for tactics, techniques, and procedures. It is a matter of encryption, and encoding. It is a matter of full range that we can bring to bear while we continue to dig to make sure with red teams and elsewhere, that we understand what our own vulnerabilities are.

Mr. FRANKS. Well, thank you, General. I am glad you are on the job.

Ms. Miller, I might direct my last question to you. The fiscal year 2013 enacted levels funded infrastructure, energy, security, and energy restoration programs at approximately \$6 million in fiscal year 2013. The fiscal year 2014 President's budget requests \$16 million, and if you can explain to me what this program does—and all of us. And why it got this increase in funding, and what that is used for? Is that used for any things that the General just described?

Ms. MILLER. Thank you, Mr. Franks. Unfortunately, I believe that activity that you are talking about is funded within the greater Department of Energy, that is an energy program. And while I might have been able to answer it a few years ago while I was still the agency's budget director, I am afraid it is out of the NNSA, and I am not aware of it.

Mr. FRANKS. Mr. Chairman, would there be anyone on the committee that could—or the panel that could answer a question about the infrastructure security and energy restoration programs?

Mr. ROGERS. No.

Ms. MILLER. No, we can——

Mr. FRANKS. All right.

Ms. MILLER [continuing]. We can certainly send it back to the Department and get that answered for you though, for the record. [The information referred to can be found in the Appendix on page 139.]

Mr. FRANKS. That would be great. Thank you, Mr. Chairman.

Mr. ROGERS. Thank you.

The Chair now recognizes Mr. Veasey, for 5 minutes for questions.

Mr. VEASEY. Thank you, Mr. Chairman.

I wanted to direct my questions to General Kehler and Secretary Creedon about START. And does New START remain in U.S. interests? And why, if you could elaborate on that?

Secretary CREEDON. It does, very much so. We know that Russia is modernizing its nuclear forces. And as we look into the future, it is very important that we maintain a—very much of a strategic balance with Russia. So, what New START does, is New START ensures that there is a clear, verifiable, identifiable cap on all of the delivery systems, and all of the deployed strategic warheads.

So as we look into the future, having this cap, having this ability to understand through the verification methodologies of the treaty, not only what, but how much Russia is doing, is extraordinarily important to maintaining the strategic stability. So it absolutely does remain in our interests in the long term.

Mr. VEASEY. General.

General KEHLER. And, sir, from my perspective, from a military perspective, reducing the potential threat in a way that is verifiable and stable is a very good thing from my perspective, and is certainly in our national interest.

Mr. VEASEY. What would be the risk of limiting funding for fiscal year 2014?

Secretary CREEDON. Well, one of the immediate impacts is the Services would stop their planning, and their planning efforts now are what are going to enable us to come into compliance with the treaty. So if we don't have the planning efforts that set us up for the situation of not being in compliance with the treaty, that would be frankly a very bad thing. The U.S. has really focused on maintaining its ability to comply with these treaties.

The flip side is it might do damage to how the Russians feel about this as well, and as the committee is very much aware, having the ability and having the verification methodologies and the inspection regimes under this treaty is hugely important to our

knowledge of what the Russian—of what Russia is doing with respect to its strategic modernization program.

So you know we need to continue to plan. We need to continue to shape the environment to allow us to come into compliance, and without this money, frankly we have come to a screeching halt.

Mr. VEASEY. Could further nuclear weapons reductions increase U.S. security?

Secretary CREEDON. That is actually something that we are looking at right now. But it is not an issue that is resolved yet. So it depends on what the global strategic environment looks like. It depends on what new guidance is issued. But we believe there is an opportunity for future reductions. Exactly the how, and the numbers, and the context, is something that we still need to work on. And I—let me just make one clarification of the statement with respect to the funding for New START.

I mean some of this money also goes to the whole inspection regime. And both sides, both the U.S. and Russia have taken full advantage of their annual inspections. So even funding these inspections is hugely important to our knowledge.

Mr. VEASEY. Thank you.

Thank you, Mr. Chairman.

Mr. ROGERS. And I appreciate the fact that things will come to a grinding halt if you don't get the money. So please get us the report so we can try to provide you the money.

The Chair now recognizes the gentleman from Florida, Mr. Nugent, for 5 minutes.

Mr. NUGENT. Thank you, Mr. Chairman.

And continuing along the New START discussion, and this is directed to General Kehler, you know I have some questions about the reduction, the number of nuclear warheads under the New START treaty, and potentially the reductions beyond the treaty. But which has a bigger impact on our ability to maintain a credible deterrence? Reductions in warheads? Or reductions in delivery vehicles? And why?

General KEHLER. Sir, let me take your question on this way, and if I am not on the mark, correct me to 100 percent, please. But let me start with, we base our force numbers on a strategy. And so, we don't start with numbers, we start with a strategy. And so under the New START ceilings, we are capable of meeting our deterrence needs today, the objectives that are levied on us for deterrence and for objectives if deterrence fails. And so that is a mixture of ways we do that.

One is an overall warhead number, and then there is a question about how we would configure our force in order to deliver those warheads. What is best for us in terms of the proper blend of survivability, flexibility, and responsiveness. And so, when you say what is most important or what is the best way to go forward?

What I would say is, my contention remains that certainly at the New START level, we would want to retain a balanced triad of some kind. So that shapes the number of and types of delivery vehicles that we would have.

Beyond that, in terms of opportunities that might arise in the future for further reductions, I would continue to argue that that would be based on a strategy, a strategic approach. And then we

would have to find the right blend of numbers of warheads and the delivery systems that keep that mixture of survivability, flexibility, and responsiveness.

I am not sure I got at your question, though, sir.

Mr. NUGENT. I think you did partially. It—the question obviously was, you know is there a particular—and you—I think you hit on it, there is a blend between the number of warheads and the number of delivery vehicles—and I don't expect you to give me a specific answer at this point in time. But I want to make sure that, you know, for our allies, that they perceive that we are also looking out for them in regards to how we protect—or project.

General KEHLER. Yes, sir, I clearly understand what you are saying now. And yeah, I couldn't agree more. Really, the role of these weapons today is deterrence and assurance. We assure our allies though our ability to provide extended deterrence. We demonstrated some of that here over the last month, as a matter of fact, in our exercises.

And certainly I can allow Ms. Creedon to step into the policy world here, but our responsibility is to be able to provide the President with forces and options that can both deter adversaries and assure allies. And that factors into the mixture of forces, the types of delivery vehicles, that we would want to retain.

Mr. NUGENT. And General, you hit on the triad, I think, which is an important part of our nuclear deterrence. But last year, there was a SLEP [Service Life Extension Program] in the scheduled number of *Ohio* class replacement submarines, that we are only going to have 10 of those operational ballistic missile submarines for much of the 2030s. Is that number of submarines sufficient to keep that triad in place?

General KEHLER. Sir, I believe that number is certainly sufficient to keep the triad in place. I think the ultimate number of submarines that we procure is still an open question. I think you are referring to an issue about how do we manage the transition from the current *Ohio* class to the new submarine? And that is a time period that we are going to have to watch very carefully, which I would suggest argues for why you want to have a viable triad if in fact we are going to put fewer submarines at sea, then we would like to be able to compensate for that in other ways.

But we are still in a time period here where that transition we are looking at very carefully to see if we can manage that differently.

Mr. NUGENT. Does that number of submarines meet STRATCOM's need?

General KEHLER. Well, the need that we put on the table was for 12. And it remains to be seen—the biggest issue right now, from my perspective, is commit to a submarine, a replacement submarine for *Ohio*. We will get to a date-certain that the current class of *Ohio* submarines, due I am told by the Navy, due to metallurgy issues, we will have to retire them. And so, it is important for us to commit to the program. I think you have a lot of time here to decide how many submarines we eventually deploy.

Mr. NUGENT. All right. I appreciate it. And I want to thank this panel for being here today to answer our questions.

And with that, I yield back.

Mr. ROGERS. I thank the gentleman.

The Chair now recognizes the gentleman from Indiana, Mr. Carson, for 5 minutes.

Mr. CARSON. Thank you, Mr. Chairman.

Madam Miller, does the NNSA have sufficient funding for weapons activity in fiscal year 2014 in the budget request?

Ms. MILLER. Yes, Mr. Carson. The President's budget adequately funds all of the activities that we need to fund through the weapons activities account, including defense programs and the programs that we have to meet the requirements for the Department of Defense.

Mr. CARSON. Yes, ma'am.

General Kehler, many of our most vocal nuclear reduction advocates have essentially argued that we could reduce our nuclear stockpile below the level set in the New START Treaty while maintaining a sufficient deterrent.

How closely aligned do we need to stay with Russian stockpile numbers to maintain an effective nuclear deterrent? And how do you believe that there is any likelihood that Russia might similarly make a unilateral reduction in its stockpile below the level set in the New START Treaty?

General KEHLER. Sir, I will defer the second part of the question about the likelihood of Russia to Ms. Creedon, if that is okay with you.

On the former question about how many weapons we think we need for deterrence and assurance, again, I would go back to this has to do with the strategy. And eventually, a strategy resolves itself into a set of military tasks that STRATCOM is asked to perform with those weapons if the need should ever arise.

That is what drives the size of the force. And today, we can accomplish our objectives with the New START force. We are above that level right now. We are on our way down to that level. That will take another several years, as you heard just a moment ago. But we are on our way to that number.

Beyond that, I think STRATCOM has been participating in a series of reviews to take a look at what a future arms control structure might look like based upon various strategic approaches. In my view, we have had a very successful way to do this in the past. It has been—we have done it with the Russians, we have done it in a verifiable way, and that has resulted in, I think, increased stability for all of us.

And because of that, I think, like the nuclear posture review said, that it is important for us to not have exact numeric parity with the Russians. But I think we need to have relative approximation of that parity with them. Parity is, a lot of different features to parity. One is technical capability or capacity as well. But I think that like the nuclear posture review suggested, that having some rough parity with them, although it doesn't have to be exact, I think that is still a good way to go forward.

Mr. CARSON. Thank you, General.

Mr. Chairman, I yield back my time.

Mr. ROGERS. I thank the gentleman.

The Chair now recognizes Mr. Lamborn, for 5 minutes.

Mr. LAMBORN. Thank you, Mr. Chairman.

Secretary Creedon and Dr. Harvey, I understand that DOD's Cost Assessment and Program Evaluation office, or CAPE, has been tasked with carrying out an assessment of the potential savings, risks, and hedges that would be involved in moving from our nuclear triad to a nuclear dyad. Basically, this would be assessing the impacts of eliminating one leg of our triad.

Can you confirm that CAPE has been tasked with conducting this analysis?

Secretary CREEDON. Sir, as both the Secretary and the Deputy Secretary have announced, the Department is going through an exercise to look at what the potential effects of further reductions would be on the Department. So it is a broad-ranging, far-reaching review of any number of different options.

And so, CAPE has not been tasked to do a specific thing, you know, in the sense of reduce here, don't reduce there. It is more of an across-the-board exercise with different teams and different categories, looking at a huge variety of different options.

And so, in any one of these exercises you tend to want to put options on the table that range from little to great big and dramatic. And so, in each of these teams, they are putting on the table options that are little to really dramatic. And what the end result of this will be is still to be determined.

And in the end, the Secretary is going to have to make the decision. But this whole exercise is really trying to wrestle with how bad would certain levels of cuts impact the Department. So you know, this would be something that they would assess in the range from little to really substantial.

Mr. LAMBORN. So that would be one of the options that the team is going to look at? Is that what you are confirming to me?

Secretary CREEDON. No, sir, I am not actually confirming that. But what I am trying to say is that wouldn't be out of the realm of possibilities. So I mean if you look at something really little, and you look at something really big, reducing one of the legs of the triad would be something that would be really big.

So it would be—I am going to say something that is going to sound strange—it would be a reasonable option to look at, even though it is completely contrary to the Department's policy and to the NPR [Nuclear Posture Review], which says maintain a triad. So when you do one of these exercises, you have to look at ways I think that are uncomfortable and that are awkward and that are not even consistent with policy. But to really put everything on the table, this is the sort of exercise that the Department goes through.

Mr. LAMBORN. Well, I am concerned that there might be some folks who are philosophically in tune with that kind of decision. I mean, I am totally opposed to that, and I imagine most of us here are. So I don't even see the value of going into a place that is so far removed from what common sense should dictate that we do.

Secretary CREEDON. And though that is in fact the policy of the Department, one of the sad situations now that the Department faces with the looming cuts, with sequestration, with possible cuts, we are in fact going through an exercise that looks at things that nobody wants to do. And that is just the reality of the fiscal constraints that are put on the Department right now.

Mr. LAMBORN. Well, I am just going to be on guard for someone using the excuse of budget cuts to do things that are really bad policy.

Thank you, Mr. Chairman. I yield back.

Mr. ROGERS. Thank the gentleman.

The Chair now recognizes the gentleman from California, Mr. Garamendi, for 5 minutes.

Mr. GARAMENDI. Thank you.

Perhaps it is opportune that I get to follow my colleague on that question. I think the major point is that we ought not be ignorant of all of our options, and we ought to be studying do we really need a triad for deterrence against whom.

And so we ought to know those things, and I would encourage the Department of Defense to continue to study and to provide the Congress with a set of options—full set of options—triad, duad—and tell us as best you can what the implications are for a dual deterrence rather than a triad—or maybe we do need a triad.

Let us understand that it is extraordinarily expensive. All of the nuclear weapons that are in the current stockpile, the life extension program of all of those, do we need all of those? Do we need—what number of each of the various kinds of weapons that are available and the delivery systems and, as the general said, the strategy or the strategic interests, and then from there comes the result.

But I don't want to be ignorant. I want to have as much information as I possibly can and to have the wisdom of options that have been thought through by the various and the best thinkers that are in the military and in the diplomatic arena. So Mr. Lamborn, let us have information.

With regard to specific information, I have some very serious questions about the plutonium stockpile that we have and the disposition of the plutonium stockpile. So Ms. Miller, perhaps this is in your domain. There is a—in the President's budget some changes as to the disposition of the plutonium stockpile.

Could you explain the Administration's position with regard to that, and specifically as it relates to the budget proposed by the President.

Ms. MILLER. Yes. Thank you, Mr. Garamendi. I think you are probably referring to the program to disposition 34 metric tons that was declared in 2000 to be excess of our weapons needs.

Mr. GARAMENDI. That is correct.

Ms. MILLER. The program of record to disposition that material in the United States has been to—this is a program we were involved with in a treaty with Russia. They have declared similar amounts. Same amount excess on their side. We all agreed to disposition.

The program of record in the United States has been to fashion that plutonium into mixed oxide fuel to be burned in a nuclear reactor to provide energy. This entails the construction of a couple of facilities, the largest of which is the mixed oxide—mixed oxide fuel in the MOX Fuel Fabrication Facility in Savannah River, South Carolina.

And the budget, as you indicated, does, for 2014, does show a strong change in that. That program, as I am sure you are aware,

is a very costly program and unfortunately has only grown more costly over time. And in an echo of everything I think my colleagues and I have been talking about this morning, the budget situation we find ourselves in has required us to take a second look at everything that we have got on the table. And that is what the budget is doing.

Mr. GARAMENDI. I really need to get into this in great detail. I know Mr. Wilson at the other end of this dais is very interested in it. Is there a customer for the mixed oxide fuel—for the oxide fuel that is supposed to be produced by this facility?

Ms. MILLER. There are no signed contracts of customers currently.

Mr. GARAMENDI. Are there alternative ways of disposing of the—or handling the plutonium stockpile?

Ms. MILLER. There may be, and that is what the budget declared is that we are taking a pause in the construction of that facility now that we are facing essentially double the cost of—just for construction—than we had expected. We are going to spend the coming year looking to see whether there are options, what are the options, including the current option, and what makes the best sense for the budget and for this program going forward.

Mr. GARAMENDI. So you would be considering options such as the—turning the plutonium into a metal fuel?

Ms. MILLER. I think we are going to keep all options that will allow us to both obviously safely and securely disposition that material and, under the terms of the treaty, meet the requirements that we have agreed to. We will be looking at all options.

Mr. GARAMENDI. Well, my time is expired. But much more discussion needs to be spent on this, and I am sure Mr. Wilson would agree that we need to really look at this whole thing in great detail. I yield back what is no time left.

Mr. ROGERS. I thank the gentleman. Chair now recognizes the gentleman from Louisiana, Mr. Fleming, for 5 minutes.

Dr. FLEMING. Thank you, Mr. Chairman.

And General Kehler, great to see you again. Thank you for what you are doing for Strategic Command, Air Force, and certainly Global Strike Command, which is headquartered in my district.

I want to revisit a subject that we have talked about before. That is weapon storage areas, the WSAs. And I know in last year's NDAA, the committee encouraged a relook into the WSAs with cost estimates on recertification.

You indicated earlier this year that you had recently met with General Kowalski, commander of Global Strike, to discuss nuclear security and future WSA analyses. When should the committee expect to see a STRATCOM report assessing our Nation's nuclear weapons storage areas with cost estimates for recertification?

General KEHLER. Sir, I will have to get that for the record. I don't know off the top of my head.

[The information referred to can be found in the Appendix on page 140.]

Dr. FLEMING. Okay. The reason why I reflect upon this, of course, is from the Schlesinger's report and other things that have followed on, it is important that we at least to some degree decentralize our nuclear weapons that are ready for delivery. And having

them all in one location as we do with the bomber fleet, obviously makes it a little bit easier solution to problems of our potential adversaries.

But on the other hand, I recognize there is cost to recertifying more WSAs. But as I understand it, there may be some better technologies going forward that may make this a less expensive choice. So I thank you for that.

Let's revisit—this is for General Kehler and also Secretary Creendon. Let's revisit the nuclear triad we were talking just a moment ago. You know, a report just came out that \$26 billion was spent over the last 4 years or so for green energy. And if you look at the yield of jobs, it comes to \$11.45 million per green job created.

To me, that is not a very good investment. On the other hand, since 1945, our strategy of peace through strength with nuclear deterrence, nuclear assurance, to me has been the best investment that we have ever had. We have prevented another nuclear war, another world war, if you will.

And talk that we are beginning to hear that we may unilaterally go down to zero nuclear capability or take a triad down to two legs or one leg of the stool I think makes us a little worried. And I have spoken to experts in SCIFs [Sensitive Compartmented Information Facility] offline about this, and they agree that anything that we do to take this from a three-legged stool to a two or a one really solves the calculations and the strategy of our potential foes, and that it would be a very bad idea to do that. So not only should we have a nuclear triad, but we should make sure that all three legs are strong. So I would like to hear from both of you where you stand on the nuclear triad, its importance.

We look at some investments in the future. The long-range strike bomber, which at its earliest won't roll off the assembly line for another 12 to 15 years. What is your belief and what is your feeling based on your discussions, your research?

Secretary CREEDON. Let me take this from a policy perspective, and then General Kehler—

Dr. FLEMING. Could you get a little closer to the mic?

Secretary CREEDON. Sorry. From a policy perspective, and then General Kehler can look at it from an operational implementation. So from a policy perspective, I couldn't agree with you more.

I mean, a triad is what we absolutely need. It is what the nuclear posture review says, and it is what is fully funded in the President's budget request for fiscal year 2014.

There are modernization programs in place for every one of the delivery platforms that we have right now. The one exception is the Minuteman III, under which the Air Force is still looking at an analysis of alternatives because that is the one that we have a little bit of luxury of time to when we actually have to have a new system in place. But from a policy perspective, that is the policy. That is the strategy, is to maintain a triad. And we have not changed that.

Dr. FLEMING. Okay. Thank you.

General KEHLER. And from a military standpoint, Congressman, I continue to support a triad. It does in fact provide the best blend of survivability and flexibility and responsiveness. Those are mili-

tary attributes that are not only beneficial to us, but typically very difficult for an adversary to overcome.

I would add that we don't talk about this as much, but it is equally important, that is the command and control system that links the President to it. There are some deficiencies there as well that we are also addressing in the budget. And I would be quick to point out that the final piece of this is the work that the Department of Energy and NNSA do for us in the stockpile, which is equally critical.

And so, all of these pieces together I think have come to a place where they require investment at a very difficult time for investment. And the program that we have put together, many of us at the table have worked pretty hard over the last year to try to come up with an implementation plan that goes with the strategy for a way forward. And I think that we are laying it here.

The question will be as we go forward: what will the outcome be? And I think that that is a significant question for all of us. But I continue to support the triad as a matter of best military advice.

Dr. FLEMING. Well, I thank you, as I yield back, and just to add onto that is simply that in a world in which more nations, not fewer, are putting together their nuclear weapons infrastructure, and potential foes are modernizing theirs, this is not a time to diminish ours.

I thank you and yield back, Mr. Chairman.

Mr. ROGERS. I thank the gentleman.

The Chair now recognizes the gentleman from South Carolina, Mr. Wilson, for 5 minutes.

Mr. WILSON. Thank you, Mr. Chairman.

Thank you all for being here.

And Ms. Miller, Mr. Huizenga, I appreciate you met with representatives, community leaders—and Ms. Miller, you referenced it—from North Augusta, from Aiken, from Barnwell, from Augusta, Columbia County—really significant community leaders from South Carolina and Georgia who felt like it was a very productive meeting. So, thank you for that, and staying in touch.

And Mr. Huizenga, I particularly appreciate your office working to get the currently impacted employees at the Savannah River Site back to work. I know that you and your staff have been diligent in this endeavor, and I greatly appreciate you addressing the 20-percent pay reduction, while promoting national security.

One thing has become very clear during the reprogramming, and that is that we need a budget, not another continuing resolution for 2014. After analyzing the President's proposed budget, I have a couple of questions, Mr. Huizenga, and that is, first, I was pleased to see that the site risk reduction and management operations line for SRS [Savannah River Site] was increased by approximately \$90 million over last year's CR [Continuing Resolution].

Given the important missions of this line item, such as downblending of highly enriched uranium and preparing plutonium as feedstock for the mixed-oxide fuel fabrication facility, I believe the increase is fully justified. However, I am concerned as to why the Department would fund these operations and then reduce the radioactive liquid tank waste stabilization and disposal line item,

which funds the tanks that receive the canyon's waste streams, by almost \$200 million.

Concerns have been brought to me that the tanks will not have adequate funding to receive the waste streams created by the results of the work that will be undertaken at H Canyon and HB Line if they are funded at the President's proposed level.

Moreover, it is, to the best of my knowledge, that one of the H Canyon's major missions for fiscal year 2014 will be to prepare plutonium for the MOX facility. With the President's suggestion to fund MOX at a lower level for fiscal year 2014 and possibly abandon it altogether in the outyears while new alternatives are being studied, I would like to know the rationale behind adequately funding the canyon, then slashing both its waste stream and recipient in the program that much of the work would be going toward.

Mr. HUIZENGA. Thank you, Congressman. I can assure you that that biomass facility that we commissioned down at the site is still efficiently and effectively producing steam and electricity.

Mr. WILSON. And the world should know about Ameresco and that success story, so please let everyone know.

Mr. HUIZENGA. Thank you.

Relative to the H Canyon and the high-level waste facilities, I can tell you I spent a fair amount of time talking with the people at the site to try to understand this issue myself. The bottom line is the budget caps in the 050 account this year made us have to look across the complex and make some tough choices.

And I think we have come up with a balanced approach at the moment which allows us to run the H Canyon, to support the non-proliferation mission of blending down HEU and also supporting the MOX feed, and at the same time run the liquid waste campaign. I know that they are looking to provide some additional efficiencies, and I don't want to deny the fact that there are some challenges there. And over the next few months, we are going to have to continue to work with them to make sure that we don't have, you know, one part of the facility operating and the other not being able to support it.

Mr. WILSON. Well, thank you very much.

Ms. Miller, I enjoy working with Congressman Garamendi on different issues such as SMRs—small modular reactors. I want you all to have a good attitude on that. And—but in regard to the mixed oxide fuel fabrication facility, this does—it is very important for us to comply with the nonproliferation agreement with the Russian Federation, and additionally the environmental significance of this.

And in regard to contracts, in the trade, it is not uncommon for contracts not to be signed until late in the process. And there are customers for the fuel that I believe should be produced. But I am concerned that alternatives—what are the alternatives? And why weren't—and in consideration of other alternatives, why was MOX chosen in the first place?

Ms. MILLER. So, let me, if I can, Congressman, take the second part of your question first.

MOX was chosen as a way to get agreement with the Russians when this document or the treaty was originally signed, because at the time, the two major pathways for this plutonium, for the dis-

position of it that we looked at, was the creation of MOX, of mixed-oxide fuel, or the immobilization of this plutonium in some sort of materials—ceramic or glass, but immobilization and then disposal in the ground.

The Russians felt very strongly that the material had an energy value to it that they were not willing to just bury. So, that concern that we work together with the Russians on the same approach, which we thought at the time might be more cost-effective and be a better way of going forward, led the United States to go the MOX route as well.

As I think you know, the Russians made some changes in their approach over the years. They are still making a mixed oxide fuel, but no longer for light water reactors. Our plant and program were meant for light water reactors. And of course, we have seen stops and starts on the Russian side.

So, the answer to that second part.

On the first part of what the alternatives are that are being looked at, I think we are talking still in the same general direction, in addition to continuing to look at the option that we are pursuing, which is MOX. We will look at other—at ways to immobilize the material and disposition it in a way, as I said before, that still meets the requirements of the treaty obligation, but if it can be done in a less expensive way, we need to understand that.

Mr. WILSON. And I look forward to working with you on that. Thank you very much.

Mr. ROGERS. I thank the gentleman.

The Chair now recognizes himself for a second round of questions.

Oh, Mr. Johnson has come in. I recognize him for 5 minutes.

Mr. JOHNSON. Thank you, Mr. Chairman.

Good morning, ladies and gentlemen.

General Kehler, multiple provisions of the House version of last year's National Defense Authorization Act would have constrained and even blocked the Pentagon's ability to implement the reductions required by the New START treaty. What would be the consequences for U.S. national security if the United States' implementation of the treaty were to cease? And also, how would Russia react?

General KEHLER. Sir, if I could sort of take the military part of that first, and then Ms. Creedon might be better able to handle the policy part.

Our belief is that we should continue with our preparatory actions and be allowed to continue with sizing the force to get to the New START limits. It is a signed, ratified treaty, and our concern is always that we don't find ourselves in the position where we are the reason for why we don't meet an implementation date that the Nation has signed up to. So, in my view, we need to continue to go forward.

Now, all the decisions on force structure and how we are going to do that aren't yet made. And, so as Ms. Creedon described earlier, there are some open questions yet about how we intend to structure the force, but preliminary steps are under way by both the Air Force and the Navy. There are things that we are doing today to get down to the New START Treaty levels, and we intend

to do that in compliance with what the Congress has told us we have to comply with.

Secretary CREEDON. And from a policy perspective it is—this treaty is very important, because among other things it allows us to maintain a strategic balance with Russia. So as the policy has said, absolute parity is not essential, so 100 and 100 is not necessarily essential, big disparities would have a substantial impact on our stability relations with Russia.

And, right now, between the U.S. and Russia, the two of us still have by far and away the bulk of the nuclear weapons in the world. So ensuring the transparency, ensuring the bilateral reductions, ensuring that we go forward in this together hand in hand is important. This treaty also allows us transparency, verification that we wouldn't have without this treaty, which is hugely important so that we understand what Russia's doing. So there are many aspects of this treaty that really are absolutely essential.

Mr. JOHNSON. Thank you.

Most experts agree that national defense spending is slated to decrease below the initial \$487 billion reduction scheduled to be implemented over the next decade with or without sequestration.

If the Air Force acquires a new ICBM, procurement would likely begin in fiscal year 2025, and would overlap—according to current plans with the Navy's SSBN(X) [*Ohio* class replacement ballistic-missile submarine] program and also the Air Force's new long-range strike bomber program—is it affordable or desirable to attempt to replace all three legs of the triad at the same time?

And this would be for any of you who choose to respond.

Secretary CREEDON. Well, first let me just agree with you that this is expensive, but we have a situation where, given the various platforms and how they age out, we don't have much of a choice with respect to the metallurgy, the physics, just the natural aging of these platforms.

So they have been—many of them—extended over time, but there is a physical factor. On the other hand, it is expensive. Being a nuclear power is very expensive. And, you know, at the risk of stating the obvious, this is an expensive venture. I mean, being a nuclear power is an expensive venture. We are prioritizing as an administration, the maintenance, the safety, the security of our nuclear enterprise, but it is expensive.

Dr. HARVEY. It is clear that we are facing a modernization mountain in the budget in the period of time in the next decade—in the mid-part of the next decade. And, we are thinking very hard about how to manage that and stay within what we might consider to be affordable levels.

It so happens that the last modernization cycle we did for our nuclear platforms was in the 1980s, and those platforms have been life extended for significant periods in addition, but it is not surprising that this modernization cusp will be hitting us in the next decade. We need to be prepared for it. We need to manage it. And it is going to be a major challenge.

Mr. JOHNSON. Thank you, and I yield back.

Mr. ROGERS. I thank the gentleman.

The Chair now recognizes himself for a second round of questions.

The B61 [tactical thermonuclear gravity bomb] life extension program is very important to this subcommittee, and as you all know, it is perhaps the most complex direct work on a U.S. nuclear weapon in over 25 years. But, before approving the B61 life extension program to enter engineering development, the Nuclear Weapons Council made a decision to forgo an option known as triple-alt that would have replaced three components, but left the rest of the bomb alone.

For General Kehler and Dr. Harvey, why did the NWC forgo triple-alt option?

And would it have met the DOD's threshold requirements?

Dr. Harvey first.

Dr. HARVEY. The triple-alt option would have replaced the—you say—three components of the B61, the radar which is a 40- to 45-year-old system that still employs vacuum tube technology, the neutron generators, and the power supplies for the warhead. One of the options considered in our phase II study was the triple-alt. And, we decided—we took a considered decision and reviewed that decision late in 2011 and decided that it was not prudent to go forward with the triple-alt, because, number one, it did not meet military requirements as established, and there were some other reasons in addition not to go forward.

It would have foreclosed our ability to manage the size of the stockpile and the numbers and types in the stockpile by being able to consolidate four weapons types—three nonstrategic and one strategic—into one weapons type, which we are determining the B61-12. And, it would have had other impacts in addition.

Number two, we would have to basically revisit a life extension program some time in the next decade, possibly earlier, to basically fix the things that we didn't fix in the triple-alt, which would have—doing two things separately is not less expensive than doing two things together at the same time.

One final point is that the B61 current system, the current bomb, is not compatible with the joint strike fighter or the upgraded B-2 digital interface, and so we would have had to continue to deploy this system with existing dual-capable aircraft which would introduce additional costs for extending the life of those aircraft.

Mr. ROGERS. General Kehler.

General KEHLER. Sir, I would just add that additional technical issues arose after the triple-alt proposal was put on the table, and those were hinted at when we discussed the triple-alt, and since that time, I think the labs, Sandia in particular, have come back with some additional concerns that from an operational requirement standpoint will have to be addressed.

So triple-alt no longer does what is sufficient to cover basically the threshold requirements that we thought we had when triple-alt was put together.

Mr. ROGERS. Okay, Administrator Miller, over the long term, would triple-alt resolve all reliability concerns in the B61, and is there anything in the triple-alt that would not address that would present weapon reliability concerns in the 2020s?

Ms. MILLER. Yes, Mr. Chairman, there are electronic systems in the warhead—the details of which are classified—but that are in an ongoing way exposed to radiation. And from a material stand-

point, we would have to go back and do a full life extension of the weapon, as I think my colleagues have indicated, within 10 years.

And so that option, frankly, after much discussion in the Nuclear Weapons Council where many people were very interesting in a less expensive option than the one we ultimately selected, we determined we would be penny-wise and very pound-foolish—not to mention the problem with meeting requirements as General Kehler has indicated.

Mr. ROGERS. General Kehler, when you appeared before the full committee earlier this year, one of the questions you were asked was whether it was your position that any further reductions in U.S. nuclear forces take place in a regime that is both bilateral and verifiable.

Is that still your position?

General KEHLER. Yes, it is.

Mr. ROGERS. In that hearing a few months ago you were also asked if you were aware of any bilateral, verifiable reductions of nuclear forces that haven't occurred through the treaty power or by act of Congress as SALT [Strategic Arms Limitation Talks] did. And, your response was, "I am not aware of any."

I believe that is correct, and shows a consistency of bipartisan practice that this Administration needs to remember.

Can you please elaborate on another of your responses regarding why it is important to have verifiability which is, as you stated, "Guarantees both nations are adhering to the agreement." Why is that important?

General KEHLER. Sir, I think, as Ms. Creedon said earlier, that we get a number of benefits out of treaties. One of those is that we are able to build transparency, which fosters understanding and ultimately I think has to do with stability.

And so a verification regime that allows us to have confidence in the approach that the parties are taking, I think helps us in many, many ways. To include, ultimately, it allows us to go forward in a way that is stable.

Mr. ROGERS. Okay. I want you all to know that the Readiness Subcommittee, Chairman Whitman and I are sending a letter to the White House informing the President we will not be providing any of the New START reduction funding, the \$75 million requested in fiscal year 2014 budget submission until we get the plan required in the fiscal year 2012 NDAA, and his personal commitment that he will not seek reductions that will circumvent the treaty, or the congressional authorization, process.

And with that, I will recognize the ranking member for any additional questions he may have.

Mr. COOPER. Thank you, Mr. Chairman.

Secretary Creedon, General Kehler, Ms. Miller, both the HASC [House Armed Services Committee] and the SASC [Senate Armed Services Committee] have withheld approval of the request for \$120 million in reprogramming for CMRR funds, sought by the Administration last year. If you would like this is your opportunity to make the case that reprogramming should still occur?

Ms. MILLER. Mr. Cooper, since the reprogramming was submitted by my agency, if you don't mind, I will start. As you know, that was a—the decision not to go forward with the plan that was

on record to build that facility was very deeply considered. And threw a lot of things into disarray. It had been on the books for many, many years as the program of record to maintain plutonium capability. However, budget realities, both in the budget itself, as well as what that facility was ultimately going to cost forced us to go back to the drawing board, frankly, and rethink.

That reprogramming that we submitted now reflects our better understanding of what our options are, how we can maintain plutonium capability until we do have full replacement of the current CMR [Chemistry and Metallurgy Research] capability. And I think frankly in the end, it has behooved us to take the time to step back and relook at our options.

So that reprogramming, first of all now is—we are absolutely in a position where we must have the ability to fund the program—the interim program as we have—as we have described it, to maintain that plutonium capability. But also it has led us to a place to understand that the plutonium facility, the so-called PF-4 at Los Alamos which is going to need to be replaced, together with the chemistry and metallurgy capabilities, is something we need to be looking at as one project, or one understanding, or project.

So, currently we are reviewing a business case for a modular option, as well as several other options. Again not wanting to pin ourselves to one thing to replace one other thing. And we expect to have a good sense of what is going to be a prudent path forward for all of us, both from a capability, and a funding perspective, by about July. We are doing that review with the Department of Defense. The reprogramming itself, however, is absolutely necessary if we are going to be able to maintain any capability going forward in the interim.

Mr. COOPER. So it was highly desirable last year, and this year it is urgent?

Ms. MILLER. I would say beyond urgent at this point.

Mr. COOPER. Beyond urgent?

Ms. MILLER. Yes.

Mr. COOPER. Well, hopefully my colleagues will be listening. How about resolving the threat of earthquake issue at Los Alamos for either CMRR, or the PF-4. Because I know that Dr. Winokur was pretty strong in his testimony about that. And yet we have a memo from Terry Wallace, principal associate director at Los Alamos, kind of downplaying earthquake risk. How do we decide that issue?

Ms. MILLER. So, we have in fact undertaken an extensive program at PF-4 to address the concerns of the board, and I note Dr. Winokur and I have personally spoken, and I have spoken to the board about that program to lay out, it has been well laid out for their staff, for our staff, and their staff, all of the upgrades that have occurred. We have spent a considerable amount of time and money upgrading the facility so that the Secretary of Energy, Secretary Chu, sent a letter to the board declaring that he was comfortable with the facility to continue to operate with those upgrades.

But I would be remiss if I didn't again say, we do need to look at replacing that facility, and that is our plan going forward, to look at what makes the most sense to get that facility replaced?

Mr. COOPER. Does that satisfy you, Dr. Winokur?

Dr. WINOKUR. Well, Congressman, the board remains concerned about this facility because obviously it is susceptible in an earthquake to collapse. And the board has communicated with the Secretary early in the year that the analysis shows it is subject to collapse, and that the off-site dose consequences are very high. There are areas of agreement right now. I think the Secretary communicated with the board and said he understood the vulnerability, and he understood that the margin between the loss of confinement in this facility, and collapse was really too small.

And the Secretary agreed to additional modeling to understand what other modifications need to be performed on the building. And NNSA has already performed some modifications to the building. The Secretary also agreed that near-term actions will be taken to reduce the amount of waste that is in the facility—legacy waste. This is plutonium that is not necessary for the mission. That some of this dispersible plutonium needs to be containerized, and that more focus needs to be provided for emergency response, preparedness, and recovery.

With that being said, the way the board is looking at this project, is simply to understand whether or not NNSA is meeting its requirements. These are NNSA's requirements, they are not our requirements. We want to understand whether they are meeting their requirements for the containment of the material in this building, as well as collapse. And the other thing the Secretary communicated to us was he felt at this time, that operations in this building are safe. This is a risk-based assessment, and the board would probably in the future want to have a better understanding of how the Secretary performed that assessment and arrived at those conclusions.

So, yes I think there is a lot of agreement here about how important it is to fix this facility. I think it is fixable going forward in the future. But the board does remain concerned about it.

Mr. COOPER. Dr. Harvey, in the limited time remaining, back to the B61 modernization issue. I was astonished to learn that there are still vacuum tubes used in anything, much less a critical component of our national defense. Are there other instances of vacuum tube use in DOD and critical weapons systems that we need to address?

Dr. HARVEY. Not that I am aware of.

Mr. COOPER. So the B61 would be unique in that regard?

Dr. HARVEY. I believe so.

Mr. COOPER. And there are transistor solid-state substitutes for the vacuum tubes?

Dr. HARVEY. There are.

Mr. COOPER. That are readily available, and more survivable, and more robust?

Dr. HARVEY. Yes, sir.

Mr. COOPER. It is remarkable. I think many people in the younger generation would not even know what a vacuum tube is, much less want to trust it for a critical component of national defense. Hopefully we can solve this problem.

General KEHLER. Congressman, if I could add though, while they may not exist in the weapons, I know you can find some large floppy-disks still being used in places in our nuclear command and con-

trol system. And so I think that there are some investments here that we are going to need to continue with, even though the difficulty that we have with overall investment is upon us.

Mr. COOPER. Well, General, your statement bears some repeating. Large floppy-disks still exist in components for our nuclear command and control? This is almost as astonishing as vacuum tubes. Oh my gosh. How could this happen? It is like, PCs [Personal Computer] aren't that expensive? What is going on here?

General KEHLER. It isn't quite that simple, but, sir, I take your point.

Mr. COOPER. Finally back to the sequestration point. This is a little bit of a leading question but, if a foreign power were to hit us with something called sequestration that had a similar effect to the effect described in each of your Departments, wouldn't we view that as at least an act of provocation? And possibly even an act of war? And yet this has been aimed at us by our own Congress? Anybody want to take that bait?

[Laughter.]

Mr. COOPER. I don't blame you.

But thank you, Mr. Chairman.

Mr. ROGERS. I don't argue with the aiming part, but the President came up with the idea.

The gentleman from Florida, Mr. Nugent, is recognized.

Mr. NUGENT. Thank you Mr. Chairman.

And I know this is a very bright group because you didn't fall for that, but we appreciate it.

The—as it relates to Yucca Mountain, Mr. Huizenga, President Obama has taken actions to terminate the Yucca Mountain project. And by law, Yucca Mountain remains designated as the Nation's first repository for high-level radioactive waste. What are the implications of this cancellation on the Yucca Mountain repository and the Department of Energy's ability to manage and consolidate defense waste? And what is the next best option? So it is a two-part.

Mr. HUIZENGA. Thank you, Congressman. Well, we have been storing our spent fuel, our defense spent fuel safely for some time. And we would intend to continue to do so in either dry storage, or we had some still in wet storage that we are moving in—over time into dry storage.

So that would be our intention. And that can be—we are quite sure it can be stored safely for several decades relative to—ultimately of course, we want to disposition that fuel. So we would be working with the Administration and with Congress ultimately to try to find a consensus view of where we should have a repository.

Mr. NUGENT. So is there a next best on the list, or is Yucca Mountain the only thing on the list?

Mr. HUIZENGA. Well, we are in the middle of—beginning stages of trying to answer that question. And I don't have a specific answer as to what the next best thing is at this moment.

Mr. NUGENT. Okay.

Mr. Chairman, I would like to yield the balance of my time to Mr. Lamborn.

Mr. LAMBORN. Thank you.

Dr. Harvey, I would like to just ask a little bit more about CAPE. I mentioned that earlier. What can you tell us about a study that

either exclusively or among other things would be looking at the effects, the impacts of eliminating one leg of a triad?

Dr. HARVEY. I would—I don't have much to add beyond what Secretary Creedon spoke to.

But I would address the point that I think these kinds of activities, these types of relooks, these reviews, particularly when we have a new Secretary coming on board who wants to basically question assumptions and help—and by doing so help him to come to understand how we made some of the decisions we have in the past is a valuable thing to do.

Regarding the ongoing activity is something that I believe Deputy Secretary Carter referred to last—in his announcement last February that we are going to look at strategic choices within the Department. And I really don't have anything to add beyond what Ms. Creedon spoke to—

Mr. LAMBORN. Could you provide to the committee the terms of reference for the study?

Dr. HARVEY. I believe I can provide to the committee the public announcement that we are going to move forward on this activity.

Mr. LAMBORN. Well, I would like the terms of reference.

Dr. HARVEY. Congressman, I will look into that and get back to you.

[The information referred to can be found in the Appendix on page 140.]

Mr. LAMBORN. Okay. Thank you.

Mr. Chairman, I yield back.

Mr. ROGERS. Gentleman from Georgia, Mr. Johnson, is recognized for 5 minutes.

Mr. JOHNSON. Thank you.

Secretary Creedon, General Kehler, or both, would you be able to give us some idea as to how DOD intends to structure its forces to comply with the New START treaty?

Secretary CREEDON. Well, let me—sir, just a little bit. So right now, the Department is spending some of this New START implementation money on doing away with systems that had been previously retired but that still counted under the old START treaty. So a lot of this money is getting those things actually finally off the books.

So not only are—do we need this—do we need the New START money to look for the actual way we structure the 800, 700, 1,550—in other words, 800 total systems, 700 deployed strategic delivery systems, and 1,550 deployed strategic nuclear warheads—but we have to get rid of all these old systems that we refer to as phantoms, so previously retired ICBMs, previously retired bombers.

So that work is also undergoing and also critical to allowing us to implement it. But as we think about from a policy perspective how we meet these numbers, we want to do it in a way that allows the most flexibility for the longest period of time.

So what do we think about: we think about what if there were some sort of a breakout from a treaty in the future, we want to make sure we have sufficient capacity and capability to be able to respond to a breakout, we want to make sure that we have enough capability across the triad so that if there is an issue with one

piece of the triad we have the ability to cover for it with other pieces of the triad.

So these are the sorts of things that we are examining and looking at right now as we develop the specifics of—from the DOD perspective, the—specifically the 800 total deployed and nondeployed and the 700 deployed.

General KEHLER. And I would only say, just to add, there is not a final decision. There are many ways that we can go forward. And that balancing that Ms. Creedon just mentioned is exactly what is in the mixture today. So there is some advantage to us doing all the preparation work as we go forward, and there is also been some advantage to us to keep some flexibility in how we will ultimately decide.

And by the way, the treaty was structured specifically so each side can decide on its own how to best structure its forces to be within the limits. So there are multiple ways we can go. We are looking at the operational benefits to a number of different ways. And within that, I would say that in every case we are looking at retaining a triad.

Secretary CREEDON. Can I just add one more thing to that? I apologize. There is also a subtlety to this treaty that actually is really very interesting, in that there is no such thing, if you would, of what the final force structure under this treaty will look like until the final day of the treaty because each side has infinite flexibility as to what their force structure looks like on an ongoing basis.

Mr. JOHNSON. So that kind of answers my next question, I suppose, which was at what point must we have a final decision on force structure under New START II?

General KEHLER. What I will say as a practical matter, sir, that decisions can't get executed overnight. And in some cases here, this requires a significant amount of work from the Navy and the Air Force. And so we think we still have time to make these decisions, but there is also a window here that will close over the next year or so, perhaps a little longer, which is why we are doing a lot of preliminary efforts and a lot of preparation.

Mr. JOHNSON. Otherwise our operations and maintenance capabilities could be threatened?

General KEHLER. That is right.

Mr. JOHNSON. Thank you.

I yield back.

Mr. ROGERS. Thank the gentleman.

The Chair now recognizes the gentleman from Colorado, Mr. Lamborn, for any additional questions he may have.

Mr. LAMBORN. Thank you, Mr. Chairman.

And I am glad we have a few minutes before we have to go off to vote. Administrator Miller, the budget request justification documents show that NNSA is expecting to realize hundreds of millions of dollars in efficiencies in fiscal year 2014 to help pay for all the work that it wants to do and needs to do.

The total—these total more than \$300 million in fiscal year 2014, but the justification documents are very vague on how these are to be achieved. Can you give us specificity on how the \$300 million plus in efficiencies will be achieved?

Ms. MILLER. Thank you, Congressman. I can tell you the process we are going through right now. And I just had a report yesterday afternoon in fact on the status of this.

So the specifics I would like to take for the record because I haven't actually reviewed what has come forward for it. But I will tell you the effort that is ongoing right now to identify those efficiencies actually is making very good progress. So we will be able to provide you with that.

[The information referred to can be found in the Appendix on page 140.]

Mr. LAMBORN. Well, I look forward to having that provided to myself and the committee, but I am concerned that this is still very vague. I mean, how can we count on that, and if—let's say it doesn't materialize. Let's assume for a moment it does not materialize, that the hopes and expectations are too ambitious. What would that do to key programs like the B61 or W76 [submarine-launched ballistic missile warhead] life extension programs?

Ms. MILLER. Congressman, if we were unable to realize the—all of the efficiencies that we have assumed in the fiscal 2014 5-year budget, we definitely would have to, given that the budget right now—that the numbers that we are planning to are very fixed and quite low, as we have all been discussing, we would have to go back and rethink how we are going to execute the programs we have.

The reason we put the efficiencies into the budget to begin with was to try to accommodate this, as I think Dr. Harvey said, this vast bow wave of work that is facing us now. So we have the work to do and we have very limited budget with which to do it. And the only way we are going to get there is if we do it in a more efficient way.

Mr. LAMBORN. Once again, I hope you are right, but I don't see the facts in front of me. I don't see the efficiency. I would love to have a Department say, okay, \$300 million, we can come up with that. It sounds way too optimistic. I hope I am wrong.

Ms. MILLER. Right. Well, I hope we are able to achieve it. Faced with planning a large program of work and very limited dollars, there is nothing that you can do in order to do that, especially given the kind of work that we do that has to happen, than to go after how we do the work.

Now, we, of course, as you know, when we formulate the President's budget, we come to a point at which we realize this is the bill we have to pay for the work we have to do, and here is the bucket of dollars we have to pay for it.

At that point, you begin to realize it is going to take you—you are going to have to make a major effort to understand how you can do this more efficiently, and, yes, you do put a number on it. But then you first begin the work at that point. At that point, the President's budget has been formulated and you have got your numbers, but that is when the hard work begins on those efficiencies. And that is why we are where we are right now.

We could not, of course, anticipate or figure out all the efficiencies in advance before we knew the amount we were going to have to come up with. So that is where we are in the process.

Mr. LAMBORN. Well, it sounds like maybe we need to take some of this with a grain of salt and maybe address that with money

from elsewhere possibly. I am just—that is my personal perspective. You can't give us any specifics, then, on the proposed efficiencies?

Ms. MILLER. Well, I would give you—in the general, without attaching dollar amounts to it. We are looking across our complex at how we staff the activities that are staffed at each of the field offices, and whether we—whether it is—we have regularly been told by our laboratories and our plant partners that for every individual that we have working and the kind of oversight that we have been performing, they often have many—three, four, five times as many people addressing that.

The question is, can we do this oversight work with them in a better way that does not require them to have so many people. Their people are by definition always more expensive than our people. And so a lot of the cost, virtually all of the cost that we incur in our complex, is a people-based cost. It is not actually for hardware. Most of—70 percent at least of our money is for the people involved.

So if we can work more efficiently, we should be able to realize the savings related to that, but it does take examination of all of our processes and I—the kinds of things I indicated in my opening speech about how we do our business.

Mr. LAMBORN. Okay. Well, I wish you the best.

Thank you.

Mr. ROGERS. I thank the gentleman.

Thank you to all the witnesses for your time. We have been called for votes.

I do want to touch on one thing before we leave to vote. This committee has been looking actively at the longstanding and well-documented problems at NNSA and DOE's governance, management, and oversight of this nuclear enterprise. As you all know, Congress has tasked an advisory committee to work on suggestions for us as to how this enterprise can be improved. So, all 12 members have been appointed. I would like to ask each of you to affirm that you would be willing to cooperate with that advisory committee in its efforts.

And I will start with you, Secretary Creedon.

Secretary CREEDON. Yes, sir, very much. As you may know, my office, in conjunction with Secretary Weber in AT&L, have been working very hard to make sure that the processes are in place to get this panel up and running. And so we are absolutely committed to this panel.

Mr. ROGERS. General Kehler.

General KEHLER. I am committed to it as well. Yes, sir.

Mr. ROGERS. Ms. Miller.

Ms. MILLER. I am committed as well, sir.

Mr. ROGERS. Dr. Harvey.

Dr. HARVEY. Of course, sir. Thank you.

Mr. ROGERS. Mr. Huizenga.

Mr. HUIZENGA. Yes, as it is going to affect us, sure.

Mr. ROGERS. All right.

Dr. Winokur, don't break the streak.

[Laughter.]

Dr. WINOKUR. Yes, we are committed.

Mr. ROGERS. All right. Thank you all very much. It has been very helpful.

This hearing is adjourned.

[Whereupon, at 10:54 a.m., the subcommittee was adjourned.]

A P P E N D I X

MAY 9, 2013

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MAY 9, 2013

**Statement of Hon. Mike Rogers
Chairman, House Subcommittee on Strategic Forces**

Hearing on

**Fiscal Year 2014 Budget Request for Atomic Energy Defense
Activities and Nuclear Forces Programs**

May 9, 2013

Welcome to the Strategic Forces subcommittee hearing on the President's Fiscal Year 2014 budget request for Atomic Energy Defense Activities and Nuclear Forces Programs. I want to thank our witnesses for being here today. We have a crowded witness table because we have a lot of ground to cover in this hearing. Our distinguished witnesses are:

- The Honorable Madelyn R. Creedon, Assistant Secretary of Defense for Global Strategic Affairs, U.S. Department of Defense;
- General C. Robert Kehler, USAF, Commander, U.S. Strategic Command;
- The Honorable Neile L. Miller, Acting Administrator, National Nuclear Security Administration;
- Dr. John Harvey, Principal Deputy Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, U.S. Department of Defense;
- Mr. David G. Huizenga, Senior Advisor for Environmental Management, U.S. Department of Energy; and
- The Honorable Peter S. Winokur, Chairman, Defense Nuclear Facilities Safety Board.

I appreciate you taking the time to prepare for this hearing, and we always appreciate the contributions you each make to U.S. national security.

Turning to the issues, let me start with the good news. First, the Department of Defense has made clear that its top two priorities to protect from the effects of sequestration—beyond those that are exempt by statute or presidential direction—are operations in Afghanistan and operations and sustainment of U.S. nuclear forces. These are the correct priorities.

Second, the budget request would continue the major modernization efforts for the *Ohio* class replacement submarine and the long-range strike bomber.

Third, the budget request would provide a significant boost to the National Nuclear Security Administration's nuclear weapons work. I commend the Administration for trying to get back on track with nuclear modernization at NNSA.

But I also want to highlight several very serious concerns. For starters, the budget request does not account for the effects of se-

questration continuing into FY14—which would gravely endanger programs across the DOE and NNSA nuclear enterprise.

Furthermore, for FY12 through FY14 we still find ourselves a total of around \$1.6 billion short of the NNSA funding levels that were committed to by the President to win Senate ratification of the New START treaty. So while the Administration is trying to get back on track with the FY14 request, the nuclear deterrent has still been shortchanged the past several years.

We also find ourselves behind on some key capabilities and programs. The *Ohio* class replacement program, the B61 life extension program, the W78/W88 life extension program, the long-range standoff cruise missile—these and others have been significantly delayed. Worse, the Administration has effectively and unilaterally canceled the plutonium facility at Los Alamos.

Reviewing the budget request, we have identified \$75 million for the Navy and the Air Force for implementing the New START treaty. This is rather strange, because the Administration still has not complied with the FY12 defense authorization act, which required the Administration to submit a report 18 months ago on how it would implement New START. In my view, Congress cannot provide funds to carry out reductions it does not have enough information to understand.

We also find that the Air Force would use \$1.5 million to begin an Environmental Impact Study on shutting down one or more ICBM wings. We've heard no explanation for this study and why the Administration thinks it needs to shut down an ICBM wing to comply with New START.

On the policy front, in the next few months the Administration is expected to finally complete its long-delayed review of the Nation's nuclear war plan. Based on press reports, this 18-month-long "90-day study" is likely to recommend significant further U.S. nuclear force reductions.

So, while the Administration has not yet decided how to implement the reductions required under New START, it is now pushing for even more. Equally concerning are reports that the Administration may seek to avoid Congress and undertake further nuclear reductions outside of the formal treaty process or without affirmative approval by Congress. This approach is a nonstarter.

Let me reiterate something I have said before: As the stockpile shrinks in size, we have reached the point where further reductions take on immense importance to the Nation's security and international stability. Avoiding Congress because the President is unwilling to debate the merits of his policy choices is unacceptable and should be intolerable to anyone who cares about our system of government. Congress must be a full and equal partner for these hugely important national security decisions, and I intend to see that my colleagues and I fulfill our constitutional role.

As I said at the outset, we have a lot of ground to cover in this hearing. I expect we'll continue this subcommittee's discussion of management and governance problems at NNSA and DOE. I also expect we'll review the important work of the Defense Environmental Cleanup program. DOE is doing great work in this area, but technical and management problems continue at some of their biggest and most visible projects.

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THE HOUSE ARMED SERVICES COMMITTEE

STATEMENT OF

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

BEFORE THE HOUSE
ARMED SERVICES
STRATEGIC FORCES SUBCOMMITTEE

MAY 9, 2013

NOT FOR DISTRIBUTION UNTIL RELEASED BY
THE HOUSE ARMED SERVICES COMMITTEE

Chairman Rogers, Ranking Member Cooper, distinguished members of the Strategic Forces Subcommittee, thank you for the opportunity to testify today on our nuclear forces and the policies and programs that support them. I am pleased to join Acting Administrator Miller, Principal Deputy Assistant Secretary Dr. Harvey, General Kehler, Mr. Winokur, and Mr. Huizenga who are here today for this discussion.

The Office of Global Strategic Affairs (GSA) leads the Department of Defense's efforts to execute the President's vision toward a world without nuclear weapons, while recognizing that as long as nuclear weapons exist, the United States must maintain a safe, secure, and effective nuclear deterrent. The great men and women of GSA lead the Department's work with our international allies and partners to ensure and strengthen stability and deterrence in the international system. GSA is also responsible for policy development on a range of issues, including countering the proliferation of weapons of mass destruction (WMD); ballistic missile defense; and dealing with the emerging security threats in the cyber and space domains.

The subcommittee has asked that I address a number of issues today, including: U.S. nuclear force posture; implementation of the Treaty between the United States and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START); status of the Nuclear Posture Implementation Study; nuclear modernization plans and budget requirements under the 1251/1043 plan; current and future requirements for nuclear weapons delivery systems; the decision-making process and strategic perspective at the Nuclear Weapons Council (NWC); and stewardship, sustainment, and modernization of the U.S. nuclear stockpile and supporting infrastructure. Additionally, I stand ready to answer any questions that the subcommittee may have.

Global Strategic Balance

The United States has come a long way from a high point of approximately 31,000 nuclear warheads at the height of the Cold War in 1967 to about 5,000 in our stockpile today. The number of deployed strategic nuclear warheads reported under New START for the United States as of March 1, 2013 stands at 1,654. For the Russian Federation, the figure is 1,480. By any measure, this represents significant, demonstrable disarmament progress.

While reporting and inspections that are done under New START give us a strong understanding of deployed Russian strategic nuclear weapons, we have significantly less confidence in the numbers of Russian non-strategic or “tactical” nuclear weapons.

Russia also maintains a robust nuclear warhead production capability to regularly remanufacture warheads rather than conduct life-extension programs, as the United States does. It is also modernizing its delivery systems. It is fielding a mobile variant of the Topol-M intercontinental ballistic missile (ICBM), a new Borey-class missile submarine with Bulava submarine-launched ballistic missiles (SLBMs), and replacements for its nuclear air launched cruise missile (ALCM). It is also developing a new heavy ICBM to replace aging Cold War-era systems, which we estimate will go into service by the end of this decade.

China continues to invest in nuclear weapons and delivery systems in order to enhance the mobility and survivability of its nuclear deterrent. Its broad range of missile-development programs includes an effort to replace some liquid-fueled systems with more advanced solid-fueled systems. It is also pursuing a sea-based deterrent with the development of the JL-2 submarine launched ballistic missile intended for deployment on the Type-094 Jin-class ballistic missile submarine. Although China continues to upgrade its nuclear missile force, we estimate that it has not substantially increased its nuclear warhead stockpile in the past year, since I last briefed this subcommittee.

Iran continues to defy the calls of the international community for transparency into its nuclear activities. Its refusal to cooperate fully with the International Atomic Energy Agency (IAEA) and the possible military dimensions of Iran’s nuclear program continue to heighten U.S. and international concerns that Iran is pursuing the development of a nuclear-weapon capability.

North Korea continues to violate its international obligations and commitments, including denuclearization. Its announcement on February 12, 2013 of a third nuclear test, following on the heels of its December 12 Taepo Dong-2 launch, and its subsequent threatening rhetoric are the latest reminders that North Korea’s nuclear and ballistic missile programs, and proliferation activities, pose threats to U.S. national security, Asia-Pacific regional security, and nonproliferation efforts worldwide.

The array of nuclear-armed or nuclear weapons-pursuing states around the world certainly complicates the global security environment. The United States and Russia together, however, still account for a vast majority of the world's nuclear weapons, even after the central limits of New START are reached in February 2018. For this reason, our focus for the next stage of arms control remains bilateral efforts with Russia.

New START Treaty

The New START Treaty entered into force on February 5, 2011. It allows the United States to continue to field a credible and flexible nuclear deterrent force while also providing a framework for bilateral reductions in strategic nuclear weapons systems. When fully implemented, the New START Treaty will result in the lowest number of deployed nuclear warheads since the 1950s. The Treaty limits both the United States and the Russian Federation to 1,550 accountable warheads on deployed ICBMs, deployed SLBMs, and heavy bombers equipped for nuclear armaments. Strategic stability will be maintained through a robust triad of strategic delivery systems under the Treaty's limit of 700 deployed ICBMs, deployed SLBMs, and deployed heavy bombers; and 800 total deployed and non-deployed ICBM and SLBM launchers, and heavy bombers. The United States can meet national security requirements under these limits.

A key contribution of New START is its extensive verification regime. I am pleased to report that the United States has been fully implementing the measures that are included in this regime. Since entry into force, the United States has conducted 40 on-site inspections and Russia has conducted 41. Each side has fully used its respective inspection quotas for the Treaty's first two years, and both sides are well into the third year of inspections. Each side is exchanging updates to its respective databases on strategic offensive arms, twice per year as agreed under New START, and each has exchanged telemetric information on selected ICBM and SLBM launches. Delegations from the United States and Russia have also met five times under the Treaty's Bilateral Consultative Commission to address implementation issues.

The United States is on track to meet New START's central limits by the February 5, 2018 deadline. We look forward to continuing robust bilateral cooperation and dialogue with the Russian Federation as we fully implement the Treaty.

Future Arms Control Efforts with Russia

As the 2010 Nuclear Posture Review stated, New START is the first step by this Administration in lowering the numbers of nuclear weapons and delivery systems deployed by the United States and Russia. We intend to pursue further bilateral reductions and transparency with Russia that would cover all nuclear weapons – deployed and non-deployed, strategic and non-strategic – while ensuring that we maintain our commitments to stability with other nuclear powers, deterrence of potential adversaries, and assurance of our allies and partners.

Because of improved relations with Russia, strict numerical parity in nuclear weapons is no longer as compelling as it was during the Cold War. On the other hand, large disparities in nuclear capabilities could raise concerns on both sides and among U.S. allies and partners, and may not be conducive to maintaining a stable, long-term strategic relationship, particularly at lower numbers. Therefore, as the NPR stated, we will place importance on Russia joining us as we pursue additional reductions in nuclear stockpiles.

The timing and framework for the next round of negotiations are not settled, but we are working now to establish the appropriate conditions. The administration has been clear that future discussions with Russia should include non-strategic nuclear weapons, consistent with the Senate's Resolution of Advice and Consent to Ratification for New START.

Nuclear Posture Review Implementation Study

As you know, the administration has been conducting an NPR implementation study to review our nuclear deterrence requirements and operational plans to ensure they address today's threats. Once the President reviews the results of the study and makes decisions regarding its recommendations, the administration will revise employment guidance and operational plans accordingly. The President's decisions regarding the study recommendations will also provide the foundation on which we can develop specific proposals regarding further nuclear reductions that we can use as the basis for discussions with Russia.

The implementation study focuses on the five key strategic objectives established in the Nuclear Posture Review:

- Preventing nuclear proliferation and nuclear terrorism;
- Reducing the role of U.S. nuclear weapons in U.S. national security strategy;
- Maintaining strategic deterrence and stability at reduced nuclear force levels;
- Strengthening regional deterrence and reassuring U.S. allies and partners; and
- Sustaining a safe, secure, and effective nuclear arsenal.

The analysis is not yet complete, but our preliminary view based on work to date, is that further reductions consistent with the national security environment will be possible and that continuing modernization of our nuclear capabilities is essential. The details of this work are highly sensitive, but as already promised by the Secretary of Defense, the Department is committed to sharing relevant aspects of the analysis with the senior leaders of the defense committees when approved by the President. The Secretary is committed to keeping Congress fully informed of policy developments and our plans for adjustments to both the nuclear force and its supporting nuclear complex.

Budget Uncertainties and Stockpile Management

The current fiscal situation continues to put pressure on the entire Department of Defense. As sequestration cuts are implemented and as budgetary uncertainties continue, the Department will make difficult decisions and assume more risks. These risks, however, will not alter our prioritization of the nuclear mission and our commitment to U.S. extended deterrence and assurance of allies and partners. We will make every effort to minimize adverse effects on our mission and to ensure the capabilities and readiness of our forces.

For as long as nuclear weapons exist, the United States will maintain a safe, secure, and effective nuclear stockpile. A modern, responsive nuclear weapons infrastructure is the foundation of our nuclear deterrent and the Department of Defense, in partnership with the Department of Energy/National Nuclear Security Administration (DOE/NNSA), will take the steps necessary to ensure its long-term sustainment and modernization. Those steps, and how the administration proposes to fund them, were originally laid out in the Fiscal Year (FY) 2011 “Section 1251 Report.” Ongoing fiscal challenges and greater-than-anticipated program costs

have forced a reexamination of the 1251 strategy and supporting programs. As a result, the administration has worked to identify cost savings in a sensible and strategic way. We will protect important modernization programs, while continuing to meet our other defense, deterrence, and assurance commitments. We have made difficult choices and are accepting risk through program delays where feasible and other programmatic adjustments.

One such adjustment has been the development of an enduring strategy for plutonium capability that includes re-use of existing plutonium pits to meet near-term requirements. This has allowed for a deferral of the Chemistry and Metallurgy Research Replacement-Nuclear Facility (CMRR-NF) that has, in turn, freed funding for construction of the Uranium Processing Facility (UPF). Design work on the UPF continues, and is scheduled for completion in mid-FY 2014.

These decisions reflect careful consideration on the part of the DOE/NNSA, in close consultation with the Department of Defense, and the difficult choices that have been made in order to operate within the budget constraints imposed by the current fiscal environment. Our prioritized stockpile plan supports the President's commitment to modernizing the nation's nuclear infrastructure and the importance of the nuclear mission.

Force Modernization

The 2010 NPR concluded that the United States will maintain a triad of ICBMs, SLBMs, and nuclear-capable heavy bombers; the President's FY 2014 budget supports its modernization. As Secretary of Defense Hagel has stated, "providing the necessary resources for nuclear modernization of the triad should be a national priority," and that is the policy of this administration.

As we move to lower numbers under New START, sustaining the sea-based leg of our nuclear deterrent remains a vital requirement. The service life for the Trident D-5 SLBM has been extended to 2042 and construction of the first of the *Ohio*-class replacement submarines is scheduled to begin in 2021.

The administration plans to sustain the Minuteman III (MMIII) ICBM system through 2030. Solid Rocket Motor (SRM) flight tests and surveillance efforts are ongoing and by 2017

will provide better estimates for component age-out and system end-of-life timelines. Guidance system and fuse replacement are also expected to be needed prior to 2030. An Air Force analysis of alternatives examining options and required capabilities for a follow-on system, Ground-Based Strategic Deterrence, is projected to be complete in 2014. This will allow a program to further extend the life of the MMIII or to develop a follow-on ICBM. The ICBM Demonstration Validation Program is maturing technologies for insertion into future SRM and guidance programs. Follow-on ICBM activities will be closely coordinated and leveraged with efforts to modernize the MMIII through 2030.

A key modernization issue is sustainment of the large-diameter solid-rocket motor industrial base, pending a decision whether to produce a follow-on system. Strategic rocket motor demand has been on a steady decline for the last two decades, placing a heavy burden on Navy and Air Force resources to keep it viable. Planned investments offer the Department and our industrial partners the opportunity to right-size rocket motor production capacity for the short term while retaining critical skills for the future.

The United States will maintain two B-52H strategic bomber wings and one B-2 wing. Both bombers, however, are aging. Sustained funding and support is therefore required to ensure operational effectiveness through the remainder of their respective service lives. The President's Budget Request supports upgrades to these platforms; for example, providing the B-2 with survivable communications, a modern flight system, and upgraded defensive systems. The Department has begun a program for a new, long-range, nuclear-capable, penetrating bomber that is fully integrated with a family of systems supporting intelligence, surveillance, and reconnaissance (ISR) assets. In addition, as air-launched cruise missiles (ALCM) age, the Department is planning to complete an analysis of alternatives this month for an ALCM follow-on system called the long-range standoff (LRSO) missile. We plan to sustain the ALCM and work with DOE/NNSA to sustain the W80-1 ALCM warhead until the LRSO can be fielded.

Nuclear Weapons Council

My colleague, Dr. Harvey, will elaborate on the role of the NWC in more detail. However, I would like to mention that, under Assistant Secretary of Defense Weber's leadership as NWC Executive Director, the Council has met more regularly and has been more aggressive

in addressing areas of need within the nuclear enterprise. As a result, it has served as a vehicle for improving the relationship between the Departments of Defense and Energy and has been a catalyst for progress.

Alliance Commitments

Our commitment to NATO remains strong and continues to be a positive force in the international security environment. Last year, NATO completed a rigorous analysis of its deterrence and defense posture, formally publishing the Deterrence and Defense Posture Review (DDPR), which clearly states that nuclear weapons and missile defense are core components of NATO's overall capabilities for deterrence alongside conventional forces. To implement the principles and results of the DDPR, the Alliance also updated longstanding nuclear guidance. We also work closely with our NATO allies through the Nuclear Planning Group, which is the senior alliance body on nuclear policy and posture issues. This forum provides a critical venue for discussions among NATO allies on a broad range of nuclear policy matters, including the safety and security of nuclear weapons and the development of common alliance positions on nuclear policy.

The special relationship between the United States and the United Kingdom remains strong. Instability in the international system caused by aggressors such as North Korea and the nuclear aspirations of Iran threaten both of our states, and these shared threats strengthen our commitment to bilateral cooperation across the nuclear domain. One way in which this cooperation is evidenced is the Common Missile Compartment program. This joint effort provides significant cost-sharing benefits to both states and helps ensure that the next generation of our respective SSBN fleets remains technically sound and strategically viable. In this era of declining defense budgets and overall fiscal uncertainty, this type of collaboration is increasingly important. We value the UK's continuous at-sea deterrent and the vital contribution it brings to our allied nuclear deterrence mission.

To support U.S. extended deterrence and assurance commitments, the Department plans to provide a nuclear capability to the Joint Strike Fighter (JSF) to replace existing dual-capable aircraft (DCA) in Europe, and remains fully committed to the B61 Life Extension Program (LEP). Our plan remains to integrate nuclear delivery capability into the F-35 during Follow-on

Development block upgrades of the aircraft. To allow for more maturity in the Follow-on Development program, the Air Force (in coordination with the Joint Program Office) now intends to deliver nuclear capability to the F-35 for deployment after calendar year 2024. The Air Force has plans in place to ensure there will be no gaps in our ability to meet extended deterrence commitments to our allies and partners as the F-35 DCA capability comes on-line. The B61 LEP will upgrade a successful, but aging, line of weapons with enhanced security features and a precision guidance capability that will serve as a necessary component of our central and extended nuclear deterrent for many years to come.

We continue to engage the Republic of Korea on nuclear matters through the Extended Deterrence Policy Committee (EDPC), which serves as a bilateral forum to enhance the effectiveness of extended deterrence on the Korean Peninsula. This work has taken on greater urgency in light of North Korea's continued provocative actions that have increased tensions. Our recent B-52 and B-2 missions demonstrate that we are unequivocally committed to our defense of the Republic of Korea, to deterring aggression, and to ensuring peace and stability in the region.

With our Japanese allies, we continue to participate in an ongoing Extended Deterrence Dialogue, co-chaired by the State Department, which covers nuclear and missile defense issues. This dialogue is actively strengthening our alliance by resolving questions and providing frank discussion on a range of strategic issues. Its value lies in the trust and understanding built between partners, and the opportunity it engenders to think creatively about deterrence challenges before they arise.

Nuclear Command, Control, and Communications

The Department of Defense is committed to sustaining and improving our Nuclear Command, Control, and Communications (NC3) architecture. Over the past year, the Department has begun formulating a long-term strategy to modernize critical NC3 capabilities, while also enhancing NC3 support in regional contingencies.

The Deputy Secretary of Defense is leading this effort to ensure our NC3 system remains enduring and secure against a broad range of threats and challenges. In this context, the Department is prioritizing resources to address known capability gaps while incrementally

building toward a modern NC3 architecture that will ensure timely decision-making support for the President and address the full spectrum of 21st century deterrence challenges.

Conclusion

The current fiscal environment and ongoing budget uncertainties will continue to pose significant challenges as we move forward in the sustainment and modernization of our nuclear deterrent. As a result, we will continue to adjust programs in order to meet the nation's deterrence and defense requirements while taking into account a declining Department of Defense budget. Despite this uncertainty, the administration remains firmly committed to safe, secure, and effective nuclear stockpile and modernized platforms to deter potential adversaries and reassure our allies and partners around the world.



Madelyn R. Creedon

Assistant Secretary for Global Strategic Affairs (GSA)



Madelyn Creedon was confirmed by the U.S. Senate as the Assistant Secretary of Defense for Global Strategic Affairs (GSA) on August 2, 2011. In this capacity she supports the Under Secretary of Defense for Policy in overseeing policy development and execution in the areas of countering Weapons of Mass Destruction (WMD), U.S. nuclear forces and missile defense, and DOD cyber security and space issues.

Prior to her confirmation, Ms. Creedon was counsel for the Democratic staff on the Senate Committee on Armed Services and was responsible for the Subcommittee on Strategic Forces as well as threat reduction and nuclear nonproliferation issues.



In 2000, she left the Armed Services Committee to become the Deputy Administrator for Defense Programs at the National Nuclear Security Administration, Department of Energy (DOE), and returned to the Committee in January 2001.

Prior to joining the Armed Services Committee staff in March 1997, she was the Associate Deputy Secretary of Energy for National Security Programs at the Department of Energy, beginning in October 1995.

From November 1994 through October 1995, Ms. Creedon was the General Counsel for the Defense Base Closure and Realignment Commission. This Commission, under the Chairmanship of former Senator Alan Dixon of Illinois, was responsible for recommending to the President military bases for closure or realignment.

From 1990 through November 1994, Ms. Creedon was counsel for the Senate Committee on Armed Services, under the Chairmanship of Senator Sam Nunn. While on the committee staff she was responsible for DOE national security programs, DOE and DOD environmental programs, and base closure transition and implementation programs.

Before joining the staff of the Senate Armed Services committee, Ms. Creedon was a trial attorney and Acting Assistant General Counsel for special litigation with the DOE Office of the General Counsel for 10 years.

Born and raised in Indianapolis, Indiana, Ms. Creedon is a graduate of St. Louis University School of Law, where she was captain of the moot court team. Her undergraduate degree is in political science from the University of Evansville, Evansville, Indiana.

HOUSE COMMITTEE ON ARMED SERVICES
SUBCOMMITTEE ON STRATEGIC FORCES

STATEMENT OF
GENERAL C. R. KEHLER
COMMANDER
UNITED STATES STRATEGIC COMMAND
BEFORE THE
HOUSE COMMITTEE ON ARMED SERVICES
SUBCOMMITTEE ON STRATEGIC FORCES
9 MAY 2013

HOUSE COMMITTEE ON ARMED SERVICES
SUBCOMMITTEE ON STRATEGIC FORCES

INTRODUCTION

Mr. Chairman and distinguished members of the subcommittee, I am honored to join you today. It is my privilege to lead United States Strategic Command (USSTRATCOM), and on behalf of our 54,500 outstanding military and civilian men and women I am pleased to report USSTRATCOM remains capable and ready to meet our assigned missions. I thank Congress and this subcommittee for your support and I look forward to continuing to work together to ensure our national security today and tomorrow.

USSTRATCOM TODAY

Uncertainty and complexity continue to dominate the national security landscape. Today's operating environment is increasingly characterized by the potential for persistent conflict across all domains—air, sea, land, space and cyberspace—where state and non-state actors alike can employ highly adaptive combinations of strategies, tactics and capabilities to simultaneously and quickly exploit and transit political, geographic and domain boundaries. These hybrid threats are challenging earlier assumptions; stressing our plans, practices, and organization; compelling unity of effort; and demanding flexible and innovative approaches to create effects tailored to the unique actors, circumstances and scenarios we face. In short, yesterday's battlefield is rapidly becoming tomorrow's global battle-space.

Events continue to validate this perspective. Even as the U.S. continues to transition from today's conflicts, the reality of preparing for tomorrow's challenges has emerged. Violent extremists continue to threaten U.S. interests, allies, partners and the homeland. Their acts remind us that we must remain both vigilant and engaged with our combatant command (CCMD) partners to prevent a terrible connection between such extremists and weapons of mass destruction (WMD). In December 2012, North Korea conducted a missile launch in violation of its obligations under multiple United Nations Security Council resolutions and announced last month it conducted another nuclear test. Iran continues to pursue its ballistic missile program and its nuclear ambitions. The Arab Spring continues to unfold and the outcome remains unresolved. Syria, a state with significant stocks of chemical weapons, continues to be gripped by civil war.

We continue to see improvements in more traditional militaries whose capabilities can range from low-end conventional, to sophisticated, all-domain regional and global (including WMD). China conducted a successful anti-ballistic missile test and continues to modernize its nuclear forces. South and East China Sea tensions rose between China and the Philippines (Scarborough Shoals) and Japan (Senkaku/Diaoyutai Islands) respectively. Russia continues to modernize its nuclear forces and increase its level of strategic military activity. I do not believe today that the Russians or the Chinese intend to attack the United States; however, as long as they possess the capability to do so, we have an obligation to maintain forces sufficient to deter them.

Hostile cyber activities have increased in both quantity and intensity, and the potential exists for even greater activity against U.S. intellectual property, institutions, and critical infrastructure. U.S. national power relies heavily on cyberspace and the capabilities it enables; therefore, we must continue to improve the protection and resilience of our networks—to include our nuclear command, control and communications (NC3) system—as we work to increase cyber capacity and capability.

Fiscal uncertainty presents our people with an unprecedented combination of professional and personal concerns as well. The all-volunteer military and civilian team has performed beyond our greatest expectations and is the envy of the world; but some of the best young uniformed and non-uniformed people assigned to USSTRATCOM are questioning their future. The uncertainty surrounding civilian hiring restrictions, salary freezes, and the possibility of unpaid furloughs is especially troubling since 60% of the USSTRATCOM headquarters staff and much of the essential work force which supports our missions and sustains our mission critical platforms and systems are civilians. Preserving this combat-experienced military-civilian team in the face of further force reductions, a potential decline in readiness and unpaid furloughs is one of my greatest concerns.

The possibility of dramatic budget reductions creates additional problems. The inflexible nature of cuts associated with sequestration are already impacting the readiness of our forces, and the associated out year budget cuts of over \$50 billion per year across the Department of Defense will likely cause further impacts that could eventually impact our ability to deter aggression. The impact of across-the-

board reductions and out year budget cuts to readiness accounts will cascade as time passes; recovery from such cuts will take longer and be more difficult to achieve. Similarly, cuts to investment accounts will delay often deferred and much needed modernization to the nuclear enterprise, curtail the expansion of cyber capabilities needed to meet the growing threat, and will delay other key capabilities. In all cases risk will increase.

The challenges inherent in these examples remind us that as we plan, prepare and apply current capabilities to existing problems, we must also remain aware of and prepared for the unexpected. Within the new defense strategy we must maintain the organizational, programmatic, and intellectual flexibility to deal with surprise and meet the uncertainties of tomorrow's unforeseen problems.

USSTRATCOM remains focused on conducting the missions most critical to protect the core national security interests described in the 2012 defense strategic guidance: defeating al-Qa'ida and its affiliates and succeeding in current conflicts; deterring and defeating aggression by adversaries, including those seeking to deny our power projection; countering WMD; effectively operating in cyberspace, space, and across all domains; maintaining a safe, secure and effective nuclear deterrent; and protecting the homeland.

While our heritage is nuclear and our nuclear vigilance will never waver as long as nuclear weapons exist, today's command is far more diverse and versatile. The missions and forces assigned to this command allow us to gain a global perspective and to create synergy from a range of strategic capabilities—those that can impact many people or systems, affect large physical areas, act across great distances, persist over long periods of time, change the status quo in a fundamental way, and provide the President ready military options in extreme circumstances—that is unique among the CCMDs. USSTRATCOM's strategic forces remain foundational to confronting the challenges of the future. The U.S. can neither deter adversaries and assure allies nor prevail in war without them—simply put, USSTRATCOM's responsibilities and capabilities underwrite freedom of action for our nation and generate viable options for our national leaders. Our seemingly diverse missions share commonalities:

they are strategic in nature, global in scope, and they are interdependent with the responsibilities and capabilities of the other CCMDs, the whole of the U.S. government, and key allies.

21ST CENTURY DETERRENCE AND ASSURANCE

USSTRATCOM's primary mission objective is to deter strategic attack on the U.S., our allies and partners by making anyone who might contemplate such an attack recognize that they will not achieve their goals and will pay an extraordinary price if they try. We employ many means to

Future conflict will:

- Encompass all domains (air, sea, land, space, and cyberspace, all tied together through the electromagnetic spectrum)
- Cross traditional geographic and man-made boundaries
- Involve a wider range of actors with access to advanced, low-cost capabilities
- Likely involve the U.S. homeland and multiple Combatant Commands
- Demand that the U.S. continue to evolve toward an interdependent joint force that is integrated in every aspect

influence the perceptions and assessments of others; but the continuing credibility of America's capabilities is the most effective deterrent against a strategic attack on the U.S.

Deterrence and assurance have been part of the national lexicon for well over half a century and, for many of those decades, strategic deterrence was synonymous with nuclear deterrence (i.e., using nuclear weapons to deter a massive nuclear or conventional attack on the U.S. or our allies). Today we believe deterrence and assurance concepts address a broader array of strategic attacks from individual actors who will have widely different capabilities and motivations. While nuclear attack will always remain unique in its potential for impact and devastation, today's strategic attacks are potentially broader and defined by their effect versus a specific weapon or means of delivery. Therefore, it is increasingly clear that the capabilities we need, to deter or defeat attacks, are those that can meet multiple scenarios and take full account of the interdependencies and interactions among CCMDs and across the air, sea, land, space, and cyberspace domains—all tied together through the electromagnetic spectrum.

It is also increasingly clear that we must carefully shape our deterrence planning to specific actors and situations. To do this will require a deeper and more comprehensive understanding of our potential adversaries and their decision making processes, a robust understanding of the threats they pose, and

more flexibility and speed in our strategy development and planning processes. In practice, 21st Century deterrence encompasses a wider range of complementary tools, including both nuclear and strong conventional forces, perhaps non-kinetic capabilities, limited missile defenses, unfettered access and use of space and cyberspace, and modern capabilities that are both resilient and sustained.

USSTRATCOM MISSIONS
<ul style="list-style-type: none"> • Strategic Deterrence • Space Operations • Cyberspace Operations • Joint Electronic Warfare • Global Strike • Missile Defense • Intelligence, Surveillance, and Reconnaissance • Combating Weapons of Mass Destruction • Analysis and Targeting

Future conflicts will likely involve multiple CCMDs from the outset, and so we must improve how we integrate our efforts across CCMDs and with the whole of the U.S. government and allies. We need the resources, the situational awareness, the organizations, and the decision-making capabilities with the responsiveness and flexibility to provide the

tailored effects the President might need before, during, or after armed conflict.

Assuring U.S. allies and partners also contributes to deterrence by demonstrating to our adversaries that our alliances and coalitions are resilient and enduring. Our assurance efforts must leverage the strengths of the individual CCMDs, Services, and Agencies, and complement other efforts already in place or in planning. Assurance is not necessarily a byproduct of deterrence; it is a deliberate effort in itself and one that often requires additional resources beyond those needed for deterrence.

USSTRATCOM is helping to shape the DoD's approach to deterrence and assurance. I'm pleased to report we have made significant progress in this regard through our Deterrence and Assurance Campaign. This campaign arranges USSTRATCOM's actions, operations, and messages in time, space, and purpose to achieve our deterrence objectives, ensure combat readiness, and generate unity of effort. The campaign is oriented toward four strategic military objectives.

- Enhancing strategic military deterrence. Adversaries who contemplate strategic attack on the U.S. and our allies must perceive unacceptable costs and an inability to obtain desired outcomes.

- Maintaining our readiness and capability to employ force to prevent and defeat all strategic attacks, not just nuclear.
- Strengthening efforts to prevent proliferation and use of WMD and mitigate effects if such weapons are used. This includes accelerating the speed with which we develop and field capabilities like standoff detection, better nuclear forensics and improved global situational awareness.
- Increasing the combat capability of the Joint Force by continuing to integrate and exercise USSTRATCOM capabilities and support plans across mission areas and with other CCMDs and allies.

The end result of the campaign planning and organizational effort is a USSTRATCOM that is more effective and soundly positioned to meet today's challenges, deter tomorrow's threats, and assure allies and partners of U.S. commitment to them.

COMMAND PRIORITIES

The new U.S. defense strategy is based on a future Joint Force that will be smaller and leaner, but will be agile, flexible, ready, and technologically advanced. The strategy also incorporates the concepts of networked warfare (recognizing the interdependence of both the forces and the CCMDs) and unity of action (integrated military action as part of a comprehensive whole of government and, when needed, multi-national approach). Within this new strategy and in support of USSTRATCOM's assigned missions, I have identified five priorities:

CDR USSTRATCOM PRIORITIES

- Deter nuclear attack with a safe, secure, and effective nuclear deterrent force
- Partner with the other combatant commands to win today
- Respond to the new challenges in space
- Build cyberspace capability and capacity
- Prepare for uncertainty

As long as nuclear weapons exist, USSTRATCOM's top priority must be to deter nuclear attack with a safe, secure and effective strategic nuclear deterrent force. USSTRATCOM plans, operates and, if directed by the President, employs the strategic nuclear deterrent force as needed to achieve national objectives. To meet national deterrence objectives, we continue to maintain a Triad of ballistic missile

submarines, intercontinental ballistic missiles (ICBMs), nuclear capable heavy bombers and associated aerial tankers, and an assured warning and command and control system. To provide the President with maximum flexibility, we maintain a portion of the missile submarine and ICBM forces in a ready-to-use posture that is governed by strict nuclear surety procedures and is constantly under the direct positive control of the President. I can assure you that today's nuclear weapons and Triad of delivery platforms are safe, secure, and effective.

My second priority is to bring USSTRATCOM's tremendous military capabilities to bear in support of our CCMD partners as needed to address today's conflicts. Over the last year we have worked hard with the other CCMDs, departments and agencies to institutionalize and enhance the integrated and synchronized joint force capability that was the by-product of the last decade of conflict. To that end we are actively exploring and creating new processes and relationships to wield all of the nation's capabilities in responding to future threats.

My third priority is to ensure that space capabilities will be available whenever and wherever they are needed. Space capabilities are integral to the American way of warfare and today's space environment is characterized by more participants, more activity, and the proliferation of a variety of capabilities that can threaten our access to and freedom of action in space. In order to preserve the national security, humanitarian, scientific, and commercial advantages we gain from operating in space, USSTRATCOM has spent much of the last year improving our contingency plans and working with our Service components to enhance the resilience of our space capabilities.

My fourth priority is to continue building the cyberspace capability and capacity. Cyberspace is central to civil, commercial, humanitarian and national security endeavors as well and, like space, we need to protect our access to and freedom of action in cyberspace. We are also working with others in the U.S. government to help protect the nation's intellectual property and critical infrastructure. We are actively collaborating with partners in industry, academia, and the intelligence community to achieve those goals. At the same time we are working hard with United States Cyber Command to shape our future cyber force and advocate for the resources to meet the increased demands of this new domain.

Finally, we expend considerable effort trying to understand the emerging strategic environment to avoid or limit the impact of surprise which military history makes clear is a deadly enemy. We explore ways to limit the impact of surprise by integrating our plans and operations with other CCMDs, agencies, and partners through realistic and challenging exercises, and by exploring alternative scenarios and futures through aggressive table-top exercises. We are also creating opportunities for Joint Forces to exercise in an environment in which space and cyberspace capabilities are degraded.

ENDURING ADVANTAGES

Given the uncertainty in the global environment abroad and the fiscal environment at home, the Nation must rely ever more heavily on the enduring advantages represented by our people and the ability of our interdependent Joint Force to maintain global awareness and project power. USSTRATCOM contributes and advocates for major capabilities that enable these enduring advantages.

Our People

People are our greatest and most enduring strength. The men and women of USSTRATCOM remain fully engaged with our many mission partners every day—both at home and abroad—despite uncertainty and a high mission pace multiplied by the inherent stresses of conflict and combat. As a result of DoD-wide suicide statistics and other human factors indicators, we have renewed our efforts to ensure our workforce remains viable, strong, capable, and resilient. We have taken specific steps to strengthen our workforce and enhance the working environment—addressing the wholly unacceptable nature of sexual assault within our ranks, respecting and including service members of all sexual orientations, understanding and treating combat-induced stress, and confronting and preventing the tragedy of suicide. These efforts are a good start toward protecting our most valuable asset, but we must do more. Leaders at all levels of USSTRATCOM are emphasizing the critical issues of personal health and well-being that are confronting our military and civilian members and their families.

I fully support the efforts of the Secretary of Defense, Chairman of the Joint Chiefs of Staff, Service Chiefs, and the Congress to recruit, retain, and support our active duty, reserve, National Guard and civilian personnel. Our strategy demands that we also support educational efforts (including lifelong

science, technology, engineering and math skills development) that will enable us to sustain the unique and highly technical nuclear, global strike, space and cyber workforce skills we need. However, I am extremely concerned about the impacts of actual and potential budget reductions on our people. While I believe these amazing professionals will continue to cope with uncertainty in the near-term, I cannot say the same over time if the financial risks to the individuals and their families persist.

Global Awareness

Our future success also depends on enhancing our enduring advantage in global awareness. Over the past decade, U.S. air, sea, and space-based capabilities have provided unfettered global access for the surveillance and reconnaissance information needed to detect and characterize trends and events. Most often, these platforms operated in uncontested environments. As we go forward, USSTRATCOM and its mission partners need to work to ensure the U.S. sustains this advantage in anti-access/area denial (A2/AD), cyberspace, space, and other contested operating environments.

Space situational awareness (SSA) is foundational to unfettered freedom of action in all domains. SSA involves not only characterizing the dynamic physical arrangement of the space domain, but also the EMS through which we transmit and receive spacecraft commands and mission data. Protecting our assets from unwanted electromagnetic interference is one of our highest priorities, and we are in the process of streamlining procedures to detect, identify, characterize, geo-locate and resolve such problems.

Many nations share the space domain and it is in our best interest to create an environment where the sharing of SSA data facilitates transparency. We provide conjunction analysis and collision warning for space operators around the world, intent on reducing the risk of collision that would create dangerous space debris. USSTRATCOM has entered into 35 signed commercial SSA sharing agreements. In 2012, we provided orbital data to 90 commercial and foreign, and 180 U.S. entities. We received and reviewed nearly 500,000 satellite observations and screened over 1,000 active satellites on a daily basis. From those screenings we provided over 10,000 conjunction warnings, supported 75 conjunction avoidance maneuvers, and fulfilled over 300 orbital data requests for more than 85 separate entities. Those numbers

will grow every year, lending urgency to SSA improvements and establishment of appropriate “rules of the road” that will govern orbital behavior and allow us to more easily detect problems as they occur.

We are also working to share the awareness advantages of space with some of our closest allies and partners. The Combined Space Operations (CSpO) concept is built upon the current Joint Space Operations Center (JSpOC) at Vandenberg Air Force Base, California, with virtual connections between it and other nations’ space operations centers around the world. This new paradigm enables partnering nations to work together to maintain the strategic advantage of access to space capabilities through synchronized activities and sustainable, combined military space operations.

Another component of global awareness, cyberspace, has become a key element for operations in all other domains, and cyber capabilities have enabled military forces to function with greater efficiency, precision and lethality. Adversaries also recognize the contribution of cyberspace to their overall warfighting capabilities and continue to pursue the advantages that effective use of cyberspace can provide. The result is a competitive and continuous life cycle of modification, enhancement and replacement of information technology systems that friends and foes alike can use to gain military, economic, or social advantages. We believe that military functions and battlefield operating systems will increasingly depend upon agile use of cyberspace to gain advantages in combat.

Other intelligence, surveillance, and reconnaissance (ISR) capabilities also strengthen global awareness; the space capabilities described just above provide some of these, but a large number of other systems—manned and unmanned aircraft, ships, submarines, cyber, human—make critical contributions as well. In crisis or contingency, “ISR” is one of the first capabilities commanders request and expect for the duration of the mission. From determining the status of Syrian chemical weapons, to identifying violent extremist organizations’ safe havens in North Africa, to monitoring tensions in the South and East China Seas, to assessing Iran’s progress with nuclear weapons, to tracking the development and deployment of adversary ballistic missiles—ISR has gone from an enabler to an essential component of all military operations.

A fourth component of global awareness is control of usable portions of the electromagnetic spectrum (EMS). Almost every modern technological device is reliant on the EMS. The commercial sector is now the primary driver of spectrum technology development which has led to an exponential increase in the availability of EMS-dependent devices and a global proliferation of emerging commercial-off-the-shelf (COTS) and dual-use technologies. This proliferation creates competition with the military's required access to the EMS and potentially pits economics against national security needs. USSTRATCOM is working with the Services, Joint Staff, and OSD to engage the whole of government to develop a cooperative way ahead to secure spectrum access.

USSTRATCOM employs capabilities in the air, space, cyberspace, and at sea in order to ensure the Nation maintains global awareness as the foundation for deterrence and, ultimately, to project power when and where needed.

Power Projection

The U.S. has long held a decisive military advantage through our ability to project power to any corner of the globe. U.S. conventional forces are second to none and our forward presence around the world ensures we can rapidly respond to crisis in any theater of operations. Adversaries and potential adversaries have taken note of this and are working to deny us this advantage through A2/AD strategies, improvements to their own capabilities, and the acquisition of WMD to discourage or limit U.S. action. As described in the 2012 DoD strategic guidance, "In order to credibly deter potential adversaries and to prevent them from achieving their objectives, the United States must maintain its ability to project power in areas in which our access and freedom to operate are challenged."

The ballistic missile submarines (SSBNs), ICBMs, heavy bombers, and cruise missiles assigned to USSTRATCOM remain the core of our nuclear deterrent. These highly reliable platforms are credible because we continue to invest the resources required to properly evaluate their performance and upgrade their capabilities on a recurring basis. Each time we test a ballistic missile or forward-deploy a heavy bomber, our allies and potential adversaries take note; our ability to transparently demonstrate the continued effectiveness of these tools creates a lasting impression which enhances our deterrent.

As effective as the U.S. deterrent force is today, we must plan for the likely circumstance that while we are projecting power abroad in a future crisis or conflict, we will also be defending the homeland in cyberspace and against missile or terrorist attack, perhaps at the outset of—or even before—a regional conflict goes “hot”. This is an operational challenge that has strategic implications for warning, thresholds, plans, and responses. Therefore, U.S. plans and operations across multiple CCMDs must be so well integrated and synchronized that when executed, they function as a single, coherent American campaign. Over the past year, USSTRATCOM has begun a complete reassessment of our operational plans to ensure we are well-integrated with our mission partners in the other CCMDs. We continue to exercise and seek robust training opportunities with these partners (including opportunities that highlight operations in contested environments) to ensure we are ready to achieve the objectives directed by the country’s senior leaders.

KEY INVESTMENTS

Deciding what capabilities are needed to meet these goals—hardware, people, organizations and procedures—is more difficult. Success in this context will be increasingly problematic as resources decline, but we can compensate by complementing planned investments with new operational concepts, more comprehensive and collaborative plans, and more effective use of the capabilities we have.

Key Investment: Nuclear Deterrent Forces

Over the past two decades, the United States has responded to changing geopolitical conditions by making appropriate reductions in the total number of nuclear delivery platforms we operate and the number of weapons in our nuclear stockpile. These reductions were determined based on a careful assessment of the capabilities required to provide the options and effects a President might need to achieve national security objectives. These capabilities include the nuclear weapons, the strategic delivery platforms, surveillance and reconnaissance systems, supporting intelligence, and the systems by which we command and control these unique forces. We must continue to invest in each of these areas even as we reduce to force levels specified by New START.

Many of our current nuclear command and control (NC3) systems were designed for the Cold War and require modernization in order to effectively meet the challenges presented in the evolving security environment. Using new and emerging technologies, we have set a course to transform the Nation's NC3 architecture to achieve robust and resilient 21st century capabilities. While I am confident today that the NC3 system and the nuclear weapon platforms do not have significant cyber vulnerabilities, we must complete a comprehensive end-to-end review before we can say with confidence that our nuclear enterprise is cyber-secure. We have made much progress on this effort over the last two years but we have more work to do.

As part of modernizing nuclear command and control, last year we broke ground on the new USSTRATCOM Command and Control (C2) Facility. Our current headquarters was built in 1957 to support a single mission, nuclear deterrence and operations, with the corresponding C2 technology of the time (the land line telephone). Our greatly expanded mission set, combined with the vastly more complex supporting technology placed increasing demands on the legacy electrical and air handling systems to the point where we suffer numerous electrical, cooling, water, fire detection/suppression, and other basic service interruptions. Your continued support for the new facility is greatly appreciated and will ultimately provide better command and control for all of our strategic forces.

The Triad of SSBNs, ICBMs and nuclear-capable heavy bombers, all with their associated support elements—offers a mutually reinforcing strategic package that provides a credible deterrent to our adversaries, assurance to our allies and partners, and flexibility for the President.

- Because of the extended service life of the current SSBN fleet, it is essential to provide sufficient resources to replace our Ohio-class ballistic missile submarines. Last year's decision to delay the Ohio-class Replacement Program by two years is all the risk I would recommend in this critical program.
- The Minuteman III force is sustainable through 2030 and potentially beyond with additional modernization investment in guidance and propulsion systems. The ongoing

Ground Based Strategic Deterrent Analysis of Alternatives is studying the full range of concepts to sustain this Triad leg beyond 2030.

- Planned sustainment and modernization activities will ensure a credible heavy nuclear and conventional bomber capability through 2040 for the B-52 and 2050 for the B-2. Looking forward, a new, long-range nuclear-capable penetrating bomber is required. USSTRATCOM is working with the Air Force to develop requirements for the next nuclear and conventional capable long-range strike platform and long-range stand-off missile. Additionally, the Air Force is replacing the aging KC-135 tanker fleet with the KC-46A, ensuring an enduring air refueling capability essential to long-range bomber operations.

Regarding the nuclear weapons themselves, modernization has in practice meant sustainment of the nuclear warheads manufactured twenty-plus years ago. At the same time, the United States has maintained a moratorium on nuclear testing for over two decades. Thus, the nuclear weapons enterprise faces the complex challenges of certifying the effectiveness and reliability of nuclear weapons without actually testing them with nuclear explosions. Considerable progress has been made toward managing these challenges with aggressive science and surveillance programs, but our future confidence in the stockpile will depend centrally on our continuing ability to attract outstanding people with scientific, engineering and technological talent to this work.

The Nuclear Weapons Council (NWC) worked diligently over the last year to develop an executable Stockpile Management Program in consideration of tightening fiscal constraints and limitations of our current nuclear complex. A corollary outcome of these efforts has been a positive change in the working relationship between the Department of Defense and the Department of Energy. As a member of the NWC, I have reviewed NNSA's budget as directed by the FY13 National Defense Authorization Act and I am confident that NNSA's FY14 budget request for Defense Programs activities is adequate—with some risk—to meet our nation's nuclear deterrence requirements. I remain concerned about the potential for additional risk to accrue in subsequent years, particularly if sequestration or other

budget perturbations cause FY14 appropriations to be significantly less than the FY14 budget request. In this scenario, the NWC would need to reassess the sufficiency of NNSA's budget to meet our stockpile management objectives.

A critical element of the Stockpile Management Program is the continued sustainment and modernization of the aging nuclear enterprise infrastructure. Facilities that support the stockpile have unique safety, security, material and special processing requirements which drive the complexity of their design and construction. Our top priority addresses moving uranium processing capabilities into a modern facility. Additionally, we must address our plutonium processing capabilities. USSTRATCOM, in concert with the DoD and NNSA, is working to execute an interim plutonium strategy which meets near-term requirements, optimizes scarce resources and leads to an enduring solution.

Key Investment: Global Strike

Today, the only prompt global strike capability to engage potentially time-sensitive, fleeting targets continues to be ballistic missile systems armed with nuclear weapons. We continue to require a deployed conventional prompt strike capability to provide the President a range of flexible military options to address a small number of highest-value targets, including in an anti-access and area denial environment, in a manner that will not upset strategic stability.

Key Investment: Electromagnetic Spectrum (EMS)

In August 2012, USSTRATCOM established a federated Joint Electromagnetic Spectrum Operations (JEMSO) Office, staffed by subject matter experts from across the headquarters and our components. This new organization supports all CCMDs with spectrum advocacy, operations, test and evaluation, and contingency planning. The JEMSO Office, in collaboration with the Joint Staff, is driving the development of a holistic JEMSO policy and doctrine that consolidates the activities of electronic warfare and spectrum management in order to significantly improve spectrum-related mission cohesion, agility, and responsiveness. We have created a mission partnership with OSD and the Joint Staff to chart a path forward regarding strategy, doctrine, and best practices to ensure that all facets of the process are built in a cogent and logical manner. Engagement beyond DoD will be vital for success in management

of this mission area. The JEMSO Office will support the combatant commands through contingency planning, training, and advocacy for EMS capabilities to enhance combat effectiveness across all warfighting domains. To address the rapid technological advances and significant proliferation of EMS-dependent systems, USSTRATCOM's Joint Electronic Warfare Center (JEWEC) is leading a comprehensive, globally oriented, cross-domain, JEMSO assessment. This assessment will continue USSTRATCOM's effort to inform EMS-dependent capability acquisitions, ensuring our warfighters are armed with the best possible training and equipment to effectively operate in this dynamic environment.

Key Investment: Missile Defense

Ballistic missiles continue to become more accurate, lethal, and capable—remaining a significant threat to the U.S. homeland and a growing threat to our allies and our forces deployed abroad. In response, U.S. and allied capabilities to deter, detect, and defeat these weapons are also growing, with decades of research and development continuing to pay dividends in terms of capability and credibility. Missile defense capabilities address limited threats to the homeland and our regional partners and allies. Ballistic missile threats are likely to grow at least as rapidly as our defensive assets, giving us little margin for error in acquisition and force management decisions. Sustained missile defense investments support deterrence and assurance goals by significantly improving the protection of our homeland, our forward-based forces, and our allies and partners. USSTRATCOM is committed to future capability development efforts that leverage past successes, address the most pressing and most likely threats, and produce field-tested, reliable assets in a cost-effective manner.

Over the past year, these efforts substantially improved our overall missile defenses. We deployed and integrated radars in Europe and the Middle East, improving threat coverage and available battle space. We concluded a review board and plan to test a revised design of the Capability Enhanced (CE II) interceptor to return it to full mission capability. We increased the number of Aegis BMD-equipped ships. And, we conducted testing and development of future elements of the European Phased Adaptive Approach (EPAA), an effort that improves missile defenses through the acquisition and integration of more advanced capabilities and the expansion of key partnerships.

USSTRATCOM coordinates the integrated air and missile defense Prioritized Capabilities List (PCL) across other CCMDs to improve Service and Missile Defense Agency understanding of prioritized joint warfighter capability needs. To this end the PCL advocates for continued support to regional and homeland missile defense needs. This includes the upgrade of early warning radars and their integration with existing fire control systems for enhanced early warning and engagement. More broadly speaking we must avoid delays in development and fielding of needed missile program upgrades. We must also continue testing individual components in an operationally realistic end-to-end manner, and preserve integrated multinational exercises which contribute to enhanced operational cooperation and increased confidence in our capability and that of our allies. This enhances efforts to provide persistent detection; expand data sharing among the U.S., allies, and partners; field effective defensive systems; and provide appropriately robust joint training. As the Joint Functional Manager for missile defense capabilities, USSTRATCOM recommends the global allocation of low-density, high-demand assets, including force rotations, and force sufficiency—thus making the best use of limited resources.

Key Investment: Space

Space is no longer the exclusive domain of superpowers—the number of countries that share the domain continues to grow as barriers to entry continue to decline. Space is foundational to the global economy, international strategic stability, and our national security. However, the strategic advantages space provides are in danger of diminishing. America must continue its leadership role to ensure space is accessible, usable, and responsibly preserved for all users. As the CCMD responsible for military space operations, support, and capability advocacy, we remain focused on ensuring intergovernmental collaboration, international cooperation, and access to and shared use of space.

Access to orbit remains vital to national security and the key to achieving it is an industrial base that is capable, responsive and affordable. Diversity in the launch marketplace could prove a positive development, and accordingly USSTRATCOM supports the Air Force's efforts to expand the available industrial base of certified and proven launch providers. The success of companies like Space-X is an

encouraging step in the right direction but we must continue to invest in capabilities that assure our access to space.

We must retain a robust and enduring capability to detect, track and analyze each of the more than 20,000 objects on orbit today in order to ensure a safe and sustainable space environment. Clearly, there is an international demand for continued and ever-improving SSA, but challenges remain in the form of critical SSA architecture legacy elements that are well past their design life. Addressing these challenges remains a high priority but fluctuating funding profiles and constrained budgets make maintenance of existing forces and infrastructure and timely acquisition of new capabilities more difficult. The Joint Space Operations Center (JSpOC) is enabled by the JSpOC Mission System (JMS) which is being developed to provide key SSA, command and control, data processing, integration, and exploitation capabilities. Continued JMS progress is vital to streamlined data processing integration, information sharing with partners and allies, and understanding of adversary intent in space.

Our assessment of existing on-orbit and ground-based communication, intelligence, surveillance, geo-location, and environmental monitoring assets is acceptable yet fragile. To preclude any gaps in our ability to provide support for the warfighter, we must program and procure replacements to our aging systems in a timely manner.

Key Investment: Cyberspace

The great power of technology – and our reliance on it – means that cyber threats represent one of the most serious national security, public safety, and economic challenges facing the Nation. The ongoing theft of the nation’s critical commercial, civil and unclassified military data by foreign intelligence and security services continues to erode U.S. economic and national security and reduce the competitive edge of the U.S. businesses. U.S. government departments, the private sector, allies and international partners must become more actively involved in securing our collective networks and to preventing our adversaries from inadvertently gaining generational increases in technology through inadequate cyber security practices.

Improving the DoD's ability to operate effectively in cyberspace requires investment in five major areas: defensible architecture (the Joint Information Environment), trained and ready forces, effective command and control, global situational awareness, and policies and rules of engagement to defend the nation in cyberspace. Of these, the most urgent investment is increasing the numbers, training and readiness of our cyber forces. We are recruiting, training, and retaining the best and brightest our nation has to offer, but the operational demands of cyberspace exceed our capacity to conduct sustained operations. We must continue to grow and align our cyber forces to enable operations and support CCDRs and their components.

It is also essential that we prepare our forces to operate in a cyberspace environment in which expected network resources and data are degraded or unavailable, or whose confidentiality and integrity cannot be confirmed. Toward this end we have made progress in developing joint cyberspace training and certification standards that will serve as the common foundation for training all DoD cyber operators. Sharing of cyber threat indicators and countermeasures must occur in near real-time to enable prevention as well as response. We are fostering close information sharing relationships with the Department of Homeland Security, law enforcement agencies and private sector companies in the Defense Industrial Base, but we need to make it easier for the government to share threat information more broadly. At the same time we must also establish and develop baseline standards for our critical private-sector infrastructure to help companies take proactive measures to secure their networks.

CONCLUSION

The nation and our military are confronted with an unprecedented confluence of geopolitical, technological, and fiscal challenges that have the potential to threaten the readiness of our military, the execution of our National Security Strategy and the security of our Nation. These challenges may be daunting but they are not paralyzing. We are building our future on a strong and successful past, and your support, together with the hard work of the outstanding men and women of the United States Strategic Command, will ensure that we remain ready, agile and effective in deterring strategic attack, assuring our allies, and defeating current and future threats.



BIOGRAPHY

UNITED STATES AIR FORCE

GENERAL C. ROBERT "BOB" KEHLER

Gen. C. Robert "Bob" Kehler is the Commander, U.S. Strategic Command, Offutt Air Force Base, Neb. He provides the President and Secretary of Defense with a broad range of strategic capabilities and options for the joint warfighter through several diverse mission areas, including combating weapons of mass destruction, integrated missile defense, ISR, and global strike. He is responsible for the plans and operations for all U.S. forces conducting strategic deterrence and DoD space and cyberspace operations. He has commanded at the squadron, group, wing and major command levels and has a broad range of operational tours in ICBM, space launch, space control, space and missile warning operations.

General Kehler entered the Air Force in 1975 as a distinguished graduate of the Pennsylvania State University Air Force R.O.T.C. program. He commanded a Minuteman ICBM operations squadron at Whiteman AFB, Mo., the Air Force's largest ICBM operations group at Malmstrom AFB, Mont., the 30th Space Wing at Vandenberg AFB, Calif., the 21st Space Wing at Peterson AFB, Colo., Air Force Space Command, and America's ICBM force before its transition from Air Force Space Command to Air Force Global Strike Command in December 2009.



General Kehler's staff assignments include tours with the Air Staff, Strategic Air Command headquarters and Air Force Space Command. He was also assigned to the Secretary of the Air Force's Office of Legislative Liaison, where he was the point man on Capitol Hill for matters regarding the President's ICBM Modernization Program. As Director of the National Security Space Office, General Kehler integrated the activities of a number of space organizations on behalf of the Under Secretary of the Air Force and Director, National Reconnaissance Office. He has also served as Deputy Director of Operations, Air Force Space Command, and as Deputy Commander, U.S. Strategic Command.

EDUCATION

1974 Bachelor of Science degree in education, Pennsylvania State University, State College
 1980 Distinguished graduate, Squadron Officer School, Maxwell AFB, Ala.
 1982 Air Command and Staff College, by correspondence
 1987 Master of Science degree in public administration, University of Oklahoma, Norman
 1988 Armed Forces Staff College, Norfolk, Va.
 1992 Air War College, by seminar
 1995 Naval War College, Newport, R.I.
 1995 Master of Arts degree in national security and strategic studies, Naval War College, Newport, R.I.
 1998 Program for Executives, Carnegie-Mellon University, Pittsburgh, Pa.

2002 National Security Leadership Course, Maxwell School of Citizenship and Public Affairs, Syracuse University, N.Y.

2006 Program for Senior Executives in National and International Security, John F. Kennedy School of Government, Harvard University, Cambridge, Mass.

ASSIGNMENTS

1. April 1975 - June 1975, student, missile combat crew operational readiness training, Vandenberg AFB, Calif.
2. June 1975 - January 1981, missile combat crew member, instructor, senior evaluator, and Emergency War Order instructor, 341st Strategic Missile Wing, Malmstrom AFB, Mont.
3. January 1981 - April 1982, personnel staff officer, Air Staff Training Program, Headquarters U.S. Air Force, Washington, D.C.
4. April 1982 - January 1985, missile operations staff officer, Headquarters Strategic Air Command, Offutt AFB, Neb.
5. January 1985 - January 1988, resource planner, Directorate of Air Force Operations Plans, and Chief, Strategic Missile Branch, Secretary of the Air Force Office of Legislative Liaison, Headquarters U.S. Air Force, Washington, D.C.
6. January 1988 - June 1988, student, Armed Forces Staff College, Norfolk, Va.
7. July 1988 - July 1991, nuclear employment and policy planner, Nuclear and Chemical Division, Joint Staff, the Pentagon, Washington, D.C.
8. July 1991 - July 1992, Commander, 508th Missile Squadron, Whiteman AFB, Mo.
9. July 1992 - February 1993, Deputy Commander, 351st Operations Group, Whiteman AFB, Mo.
10. February 1993 - August 1994, Commander, 341st Operations Group, Malmstrom AFB, Mont.
11. August 1994 - July 1995, student, Naval War College Newport, R.I.
12. July 1995 - August 1995, Inspector General, Headquarters Air Force Space Command, Peterson AFB, Colo.
13. August 1995 - June 1996, Deputy Director of Operations, Headquarters AFSPC, Peterson AFB, Colo.
14. June 1996 - June 1998, Commander, 30th Space Wing, Vandenberg AFB, Calif.
15. June 1998 - September 1999, Chief, Space Superiority Division, and Chairman, Space Superiority and Nuclear Deterrence Panel, Office of the Deputy Chief of Staff for Plans and Programs, Headquarters U.S. Air Force, Washington, D.C.
16. September 1999 - August 2000, special assistant to the Director of Programs, Office of the Deputy Chief of Staff for Plans and Programs, Headquarters U.S. Air Force, Washington, D.C.
17. August 2000 - May 2002, Commander, 21st Space Wing, Peterson AFB, Colo.
18. May 2002 - May 2005, Director, National Security Space Integration, Office of the Under Secretary of the Air Force, Washington, D.C.
19. May 2005 - October 2007, Deputy Commander, U.S. Strategic Command, Offutt AFB, Neb.
20. October 2007 - January 2011, Commander, Air Force Space Command, Peterson AFB, Colo.
21. January 2011 - present, Commander, U.S. Strategic Command, Offutt AFB, Neb.

SUMMARY OF JOINT ASSIGNMENTS

1. July 1988 - July 1991, nuclear employment and policy planner, Nuclear and Chemical Division, Joint Staff, the Pentagon, Washington, D.C., as a major and lieutenant colonel
2. May 2005 - October 2007, Deputy Commander, U.S. Strategic Command, Offutt AFB, Neb., as a lieutenant general

OPERATIONAL INFORMATION

Weapon systems: Minuteman II and Minuteman III, Defense Support Program

Launch systems: Titan II, Titan IV and Delta II

MAJOR AWARDS AND DECORATIONS

Distinguished Service Medal with oak leaf cluster

Defense Superior Service Medal

Legion of Merit with two oak leaf clusters

Defense Meritorious Service Medal

Meritorious Service Medal with three oak leaf clusters

Air Force Commendation Medal

INTERNATIONAL AWARDS AND DECORATIONS

French Legion of Honor (Officer)

PUBLICATIONS

"Nuclear Armed Adversaries and the Joint Commander," Naval War College Review, Winter 1996

EFFECTIVE DATES OF PROMOTION

Second Lieutenant April 10, 1975

First Lieutenant April 10, 1977

Captain April 10, 1979

Major May 1, 1985

Lieutenant Colonel June 1, 1989

Colonel Feb. 1, 1994

Brigadier General July 1, 2000

Major General Aug. 1, 2003

Lieutenant General June 1, 2005

General Oct. 12, 2007

(Current as of April 2013)

**Statement of Neile L. Miller
Acting Undersecretary for Nuclear Security and Acting Administrator
National Nuclear Security Administration
U.S. Department of Energy
on the
Fiscal Year 2014 President's Budget Request
Before the
Subcommittee on Strategic Forces
House Committee on Armed Services**

May 9, 2013

INTRODUCTION

Chairman Rogers, Ranking Member Cooper, 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). Your ongoing support for the men and women of NNSA and the work they do, and your bi-partisan leadership on some of the most challenging national security issues of our time, has helped keep the American people safe, helped protect our allies, and enhanced global security.

The NNSA supports the President's nuclear security strategy, including those identified in the President's new global military strategy released in January 2012, the New Strategic Arms Reduction Treaty (New START) signed in 2010, and the Nuclear Posture Review (NPR). In April 2009 in Prague, President Obama shared his vision for a world without nuclear weapons, free from the threat of nuclear terrorism, and united in our approach toward shared nuclear security goals.

Most recently, in his 2013 State of the Union address, the President continued to highlight the importance of his nuclear strategy and pledged to "engage Russia to seek further reductions in our nuclear arsenals, and continue leading the global effort to secure nuclear materials that could fall into the wrong hands -- because our ability to influence others depends on our willingness to lead and meet our obligations."

The President's FY 2014 request for NNSA is \$11.65 billion, an increase of \$186 million, or 1.6 percent, over the FY 2013 Continuing Resolution level and \$650 million, or 5.9 percent, over the FY12 appropriation at a time of sequestration and spending reductions across the government. The request reaffirms the commitment of the President to his nuclear security vision, applying world-class science that addresses our nation's greatest nuclear security challenges and building NNSA's 21st century nuclear security enterprise through key investments in our people, programs, and infrastructure.

I want to assure you that NNSA is being thoughtful, pragmatic, and efficient in how we achieve the Nation's nuclear security objectives and shape the future of nuclear security. We are looking forward to what NNSA will become five, ten, twenty years into the future and what we are doing now to get there.

Our missions are clear: to enhance global security through nuclear deterrence, to reduce global danger from nuclear weapons, nonproliferation, naval nuclear propulsion, and national leadership in science, technology, and engineering. Based on these critical mission and capabilities, the demand on the enterprise is growing. We are challenging ourselves to reject old ideas that represent the way things have been done in the past. We are moving beyond the Cold War, strategically modernizing facilities and weapons systems, ensuring that the United States has the critical capabilities it needs without wasteful spending. Given our budget constraints and ongoing uncertainty, we have a responsibility to prioritize how we get things done, and we have developed clear strategies to guarantee our ability to do so. We must evaluate our programs and challenge the assumptions for all of our programs and projects to rethink the underlying premise and ensure that we are charting a path to the future that is well-reasoned and responsible. We are at a particular point in time, unique for a lot of reasons, and the context matters. It was with this in mind that we made sure this year's Budget request was also the result of an unprecedented level of planning and cooperation between the NNSA and the Department of Defense (DoD).

The NNSA has also made a number of organizational changes to help us make better, smarter, and more efficient decisions on how we conduct our operations and identify the resources needed to meet our nuclear strategy.

One of the major actions NNSA took in FY 2013 was standing up the Office of Infrastructure and Operations (NA-00) to serve as the fulcrum of the NNSA. The office encompasses our field operations, which are now directly reporting to the Administrator through the Associate Administrator for Infrastructure and Operations, who is dual-hatted as the NNSA Associate Principal Deputy Administrator. The consolidated office serves to oversee and direct the NNSA's Operations and Infrastructure, which as you know spans eight sites—from nuclear weapons laboratories to production plants—across seven states. The new office will make management of the nuclear security enterprise more efficient and effective.

In addition, the recently established Office of Acquisition and Project Management (NA-APM) continues to integrate our acquisition and project management staffs in order to improve the way we manage and execute major construction projects once the design is sufficiently mature to baseline and begin construction, post phase Critical Decision-2 (CD-2). NA-APM combines its knowledge of contracting and project management to ensure identified and agreed upon needs of the NNSA are met in an effective and efficient manner. Federal Project Directors (FPD) responsible for project delivery have been re-assigned to NA-APM, and we are establishing Project Management Offices staffed with people possessing appropriate construction project management skills that will report directly to the FPDs. Lastly, the NNSA is better aligning contract incentives for Capital Asset Projects to structure contracts to provide an equitable balance of risks; ensuring each party bears responsibility for its own actions, rewarding contractors for generating savings while protecting the taxpayers from paying for contractor negligence. We expect these changes to fundamentally affect the way the NNSA reviews its projects and interacts with its contractors to continue to drive efficiencies while delivering on our mission under current fiscal constraints.

In the last year, NA-APM's efforts resulted in \$20 million in reimbursements from contractors as we moved to more fully utilize our contracts to hold them accountable for unsatisfactory performance. We issued an unambiguous design policy for our complex nuclear projects ensuring that sufficient design work (90 percent) is completed prior to approving project baselines at CD-2. Of non-major projects completed since 2007 with the construction budget baseline established in 2006 or later, 83 percent (10 out of 12) were delivered on time and at or under budget. These 12 non-major projects with a combined budget of \$311 million were delivered more than \$32 million under budget. We are confident that the lessons learned in delivering this work are applicable and scalable to the major systems projects we have had problems with in the past.

A third management change is to put more focus on cost planning relative to budgeting and execution, particularly in today's fiscal climate. Key decisions about priorities and resource allocations must be made centrally within the NNSA, rather than left solely to individual sites. The NNSA Act is clear that planning, programming, budgeting and financial activities comport with sound financial and fiscal management principles. Over a year ago, the NNSA embarked on a multi-year, iterative process with the Department of Defense's Office of Cost Assessment and Program Evaluation (CAPE) to conduct a rigorous analysis to try to determine how to best meet the President's nuclear strategy and the resources it will take to both accomplish the current program of work as well as to recapitalize our infrastructure. This ongoing effort will continue to inform our planning and programming decisions and will be the foundation upon which we build successive out-year budgets.

In order to further improve transparency with Congress and to further drive efficiencies into our program planning and execution, the NNSA's FY14 budget request makes some significant changes to our budget structure.

In the FY14 budget, the Infrastructure and Operations (NA-00) organization gains budget authority which will move the NNSA towards a tenant-landlord site model in which NA-00 is the landlord and the program offices are now tenants. As a result of this reorganization, the NNSA is proposing to eliminate the Readiness in Technical Base and Facilities (RTBF) GPRA unit in our budget and split these activities between the existing Site Stewardship unit and "Nuclear Programs" within Defense Programs. The activities managed by NA-00 would be added to Site Stewardship under a new subprogram titled "Enterprise Infrastructure" which would encompass Site Operations, Site Support, Sustainment, Facilities Disposition, and site infrastructure-related construction. Nuclear Programs will provide for capability investments and capital construction projects that uniquely support the mission of Defense Programs.

The Defense Nuclear Nonproliferation appropriation account of the FY 2014 budget request has been restructured to include the Nuclear Counter Terrorism Incident Response (NCTIR/NA-40) and Counterterrorism and Counterproliferation Programs (CTCP/NA-80) programs, both of which include activities transferred out of the Weapons Activities appropriation. By drawing together these NNSA programs in the Defense Nuclear Nonproliferation 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 for reducing

global nuclear dangers 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 stockpile and related activities, such as physical and cyber security.

WEAPONS ACTIVITIES

Defense Programs Overview

After adjusting for the infrastructure-related budget realignments described previously, the FY 2014 Defense Programs portion of the Weapons Activities account is \$5.1 billion or \$410.2 million above the FY 2013 continuing resolution level, constituting a 9 percent increase. As the President has committed, the NNSA is strategically modernizing our nuclear weapons infrastructure, weapons systems, and the supporting science to ensure a safe, secure and effective deterrent and to certify the stockpile without underground nuclear testing. Within today’s constrained fiscal environment, we have closely scrutinized our strategies, plans, processes, and organization to ensure we make the most of our resources. The results of the NNSA and DoD budget-driven requirements analysis has forged a stronger link between DoD’s requirements and the NNSA’s resulting resource needs across the nuclear security enterprise. Some highlights include a new strategy for the conduct of Life Extension Programs (LEPs); an updated and more complete plutonium strategy; a refocusing of our science and infrastructure investments on the capabilities most urgently needed; a reorganization of the operations of facilities accounts and major infrastructure project responsibilities within NNSA’s Defense Programs; and a significant effort to identify and implement management efficiencies. Each of these critical areas was determined following enormous effort to make smart business decisions on resourcing the highest priority mission work.

Life Extension Programs Strategy and Execution

The DoD’s “3 + 2” strategy calls for the transition of four warheads that make up the ballistic missile portion of our stockpile to be transitioned, over the next 25 years, to three life-extended, interoperable warheads that DoD could flexibly deploy across different missile platforms. Further, we will transition the three bomb/cruise missile warheads in the stockpile to two warhead types as part of their life extension.

In January 2013, the Nuclear Weapons Council (NWC) changed the schedule and cumulative production quantity for the W76-1 program. This change reduced the total LEP production quantity and realigned the end of the production period for all operational units from FY 2021 to FY 2019. Specifically, the scope and schedule parameters for the program in FY 2013 and FY 2014 remain unchanged as the

program will be executing steady-state rate production, and the annual production rates are the same for both fiscal years.

Regarding the B61 LEP, the NWC selected the option (3B) which satisfies the minimum Department of Defense threshold requirements at reduced life cycle costs. Option 3B maximizes the reuse of nuclear and non-nuclear components while still meeting military requirements for service life extension and consolidation of multiple versions of the B61 into the B61-12.

Following the W76 and B61 LEPs, the first of the LEPs to which the 3+2 strategy applies is the W78/88-1. A joint DoD/NNSA Enterprise Planning Working Group developed schedules reflected in the forthcoming FY 2014 Stockpile Stewardship and Management Plan (SSMP) which considers alignment of warhead development and production schedules with DoD system platform upgrades and balancing the workload across the nuclear security enterprise. Once developed as part of the Phase 6.2A activities, the DoD Cost Assessment and Program Evaluation (CAPE) team will review and the NWC will approve cost estimates for the W78/88 and future LEPs.

Engineering development for an alteration to the W88, the W88 Alt 370, is also under way. This Alt will address certain lifetime requirements by modernizing the Arming, Fuzing & Firing system and improving surety by incorporating a lightning arrestor connector. It will also provide additional logistical spares for the life of the system. The NNSA will complete the W88 Alt 370, the neutron generator replacement, and gas reservoir replacement will be completed at the same time with a planned first production unit for December 2018.

Plutonium Strategy

NNSA is committed to ensuring continuity of required plutonium support capabilities and mission functions to include analytical chemistry, material characterization, manufacturing, and storage functions. The strategy for doing so is encompassed by the Defense Programs Plutonium Strategy that expands our capability over the next decade to achieve a 30 pits-per-year capability by 2021 to support the W78/88-1 LEP activities. Achievement of this capability requires additional investment in the Plutonium Sustainment program along with efforts to free up space within the PF4 facility at LANL by cleaning out the existing vault space and installing additional equipment in existing facilities.

This strategy is critical for today's stockpile and is independent of the deferral period for the Chemistry and Metallurgy Research Replacement-Nuclear Facility (CMRR-NF). We are on track to move operations out of the existing Chemistry and Metallurgy Research facility at Los Alamos National Laboratory in 2019. Execution requires a \$120 million reprogramming approval for FY 2012 funds. This reprogramming is urgent for our workforce. NNSA and CAPE are developing a business case analysis of the plutonium strategy by August 2013. CMRR-NF deferral provides NNSA the opportunity to balance funding and requirements, and to evaluate an integrated, long-term plutonium capability solution.

Research Development Test & Evaluation (RDT&E)

Last year we commemorated the 20th anniversary of the end of underground nuclear weapons testing in the U.S. Shortly after that decision in 1992, the Stockpile Stewardship Program was established to provide the science, tools, and critical skills necessary to certify that the stockpile is safe, secure, and effective without the need for nuclear testing. Since that time, we have been filling our toolbox with the cutting-edge science needed to accomplish this formidable challenge. Maintaining a stockpile under these conditions requires the best science and technology in the world. Breakthroughs have occurred that have enabled us to achieve this goal for today's stockpile. But as we look into the future, we see the need for the enhanced use of our science tools to gain better assurance that as our stockpile ages it will continue to be safe, secure and effective. The modern tools of Stockpile Stewardship not only serve as our insurance policy against a return to nuclear testing, but they also are increasingly revealing the "first principles" physics and materials' properties of our weapon systems.

Priorities of the Stockpile Stewardship Program include the development of capabilities to design and certify LEP options; preservation of specialized skills needed for maintenance of the nuclear stockpile by a generation of scientists who will not have worked with those experienced in nuclear testing; development of capabilities enabling timely resolution of issues from significant finding investigations resulting from surveillance observations; enabling annual assessment of the stockpile and associated operational decisions; and reducing nuclear dangers through the extension of capabilities used for assessments of foreign state weapons activities.

In the FY 2014 budget request, the Science Campaigns seek funding to provide the science underpinnings of our Plutonium Strategy and re-use options for the future stockpile, as well as advanced certification of nuclear explosive package options with improved surety to support LEP decisions and advanced diagnostics and experimental platforms (particularly optical imaging and radiography) for future subcritical experiments that augment and guide our plutonium science research. Through the National Boost Initiative (NBI), the Science Campaign is improving physics models for primary fission "boost." This understanding is essential as we reduce the stockpile, especially since we will be re-using many nuclear components.

The FY 2014 budget request for the Inertial Confinement Fusion and High Yield Campaign features an increased emphasis on non-ignition high energy density (HED) experiments, diagnostics, and experimental platforms development to support reuse and stockpile modernization. Such platforms and diagnostics will help validate secondary performance and surety technologies for the future stockpile, as well as help provide radiation effects testing of non-nuclear components. In addition, the budget request supports progress on achieving ignition, or thermonuclear burn in the laboratory, in accordance with the Path Forward report supplied to Congress in December 2012. This report described our plan for resolving discrepancies between experimental results at the National Ignition Facility (NIF) and the prediction of our codes, as well as the development of alternate ignition approaches (polar drive, direct drive, and magnetic drive). An Independent Advisory Board on ignition will be a subpanel of new Federal Advisory Committee being formed to provide advice on NNSA stockpile stewardship

challenges. Finally, the budget seeks support for the continued safe and efficient operation of NNSA's three major High Energy Density facilities: NIF, OMEGA, and the Z machine.

The budget in FY 2014 for our Advanced Simulation and Computing (ASC) program seeks to implement the "3+2 Strategy" agreed to by the NWC described earlier. To implement that strategy, an understanding of plutonium reuse and performance, which ASC simulation helps provide, is critical. Further, the ASC budget seeks support for improved and more responsive full system modeling and simulation capabilities for annual assessments, LEPs and significant finding investigations that provide enhanced fidelity in the stockpile. ASC is uniquely challenged by supercomputing technology advances that are forcing an evolution in computer architectures that are inconsistent with current methods used in our national computational tools for stockpile assessment. In response, ASC is coordinating high performance computing technology, research and development with the DOE Office of Science's Advanced Scientific Computing Research (ASCR) office, and attempting to maintain adequate essential skills and capabilities to support current and future requirements under flat budget restrictions. Foreign nuclear weapons assessments will continue to rely on our nation's nuclear weapons code base.

Strategic Management

Building on the strength of our experience working with DoD this past year, we are enhancing our partnership this year in areas where both of us will benefit. Specifically this year, studies are being conducted with DoD to find efficiencies and to identify workforce priorities. The "3 + 2 strategy" and the aggressive LEP schedule associated with that strategy are being implemented. Modernization of critical mission support infrastructure is focusing on the Uranium Processing Facility (UPF) with acceleration out of Building 9212, and moving forward with the plutonium Strategy.

Our enhanced partnership with DoD will be evident not only this year but also over the FYNSP period (FY 2014-2018), and beyond, throughout the next 25 years as the 3 + 2 Strategy, the LEPs, and modernization are all at various stages of planning and execution. The 25 year Strategic Plan will be described in detail in the forthcoming FY 2014 SSMP.

NNSA is taking the initiative to improve the effectiveness and reduce the cost of its operations and business practices. We understand that every dollar counts in these fiscal times and NNSA will build upon a number of successful efforts in the past to improve our contractors operations and efficiencies. We have already saved considerable money through our supply-chain management initiative, planned consolidation of the Y-12 and Pantex contracts, and pressing our contractors to change their benefit plans for employees, particularly pension plans. The funding requested in FY 2014 reflects anticipated "Workforce Prioritization" and "Management Efficiencies" savings as part of the NNSA/DoD joint study.

Defense Nuclear Security Overview

The NNSA recently reorganized our security organization to establish clear lines of authority for responsibility and institutionalize a formal performance assessment capability. The Office of Defense Nuclear Security's primary missions are policy development, strategic planning, and performance

assessments of NNSA site activities. We also realigned security management for operational direction, resource execution authority, and field assistance activities to the Office of Infrastructure and Operations (NA-00) which is consistent with its existing line management authority over all NNSA sites. NNSA is changing our culture of how we assess security so that we do not rely on reports provided by others but instead assess operational readiness of security at the sites by dispatching experts from the Office of the Chief of Defense Nuclear Security.

We are also committed to hiring the right caliber of security professionals; those with operational nuclear security field experience, to reshape and continue to improve the culture of nuclear security at NNSA. This initiative is focusing our leadership on instilling a culture that embraces security as an essential element of the NNSA mission, which is to provide the utmost protection for national security resources.

DNS is also hiring 15 additional Federal security experts in FY 2013 to conduct performance-based assessments at each of the NNSA sites. These security professionals will visit each site, to perform assessments of security readiness by directly observing security operations, and program implementation.

In the period following the Y-12 security event on July 28, 2012, we have learned a lot about our organization, the assumptions we had made, and how we communicate. The incident at Y-12 was a completely unacceptable breach of security. The security of our nation's nuclear material is our most important responsibility, and we have no tolerance for such unacceptable performance. We have taken strong and decisive action to fix the issues that led to the incident at Y-12.

We immediately shared lessons learned with all the NNSA Field sites and directed each to perform self-assessments related to those concerns found at Y-12. We directed the sites to assess 1) security culture, 2) formality of operations, 3) rules of engagement procedures, 4) security system maintenance and compensatory measures. We initiated efforts to establish a robust assessment model, which has included the new Acting Chief of Defense Nuclear Security leading teams of security professionals to conduct assessments of all NNSA sites to determine security readiness and review of Field Office and contractor security performance.

We are executing a deliberate process to restore the DOE directives as the baseline safeguards and security policy for NNSA.

Using NNSA's Corporate Performance Evaluation Process, our assessment of the Y-12 management and operating contractor's performance resulted in lost award fee totaling \$12.2 million, which included 100 percent of their possible security-related fee and a negative overall management fee adjustment of \$10 million.

Cyber Security

The FY 2014 budget reflects the consolidation of the activities managed by the NNSA Office of the Chief Information Officer under NNSA CIO (NCIO) Activities. The consolidation under a single account will allow more effective and integrated management of the program. Cyber Initiatives are supported by IT Investments and this change will provide better alignment of resources to focus on the emerging threat and to deliver capabilities that allow our employees to work anywhere, anytime, on any device. The FY 2014 budget includes \$148 million for the NCIO activities which includes support for federal IT as well as all programmatic funding for cyber security (covering federal employees and our Managing and Operating Contractors).

Providing an effective enterprise IT/Cyber strategy is critical to enablement of the OneNNSA strategy, the achievement of cost savings, and the deployment of shared services for the nuclear security enterprise. The NCIO leads Federal efforts to deploy innovative IT solutions, research and develop cyber defense technologies, and to deploy effective cyber security tools such as continuous monitoring, data loss prevention, and strengthened access controls. The NCIO focus for the next five years is to continue execution of our integrated strategy of IT Transformation (the NNSA Network Vision (2NV)), improved security monitoring of our environment (Joint Cyber Coordination Center (JC3)), and deploying next generation cyber defense capabilities that alter the economics of the cyber battlefield (Cyber Sciences Laboratory (CSL)).

The NCIO made significant progress towards the OneNNSA vision in FY 2013. The organization deployed a new, secure wide-area network (OneNNSA Network), a first of its kind federated Identity Management solution (a critical path step to full HSPD-12 implementation), a unified communications solution and agency wide social network allowing for the collaboration of over 45,000 employees (ONEvoice), and a state of the art cloud services broker (YOURcloud) that will provide a foundation for cloud computing adoption and was recently recognized by Excellence.gov as the most innovative project in government.

FY 2014 will build on these achievements and progress all three elements of our integrated strategy forward. For 2NV, NCIO will consolidate data centers using YOURcloud, modernize our applications to reduce legacy IT costs and enable a mobile workforce, and consolidate our intranets, websites, and file servers to common platforms to reduce costs. NCIO will improve our classified network monitoring capabilities, provide monitoring for 2NV investments, and strengthen the partnership with DOE for unclassified JC3 capabilities. For CSL, NNSA will execute a robust cyber defense R&D portfolio center around 3 signature programs: 1) Mission Resilience and Assurance, 2) Big Data and Behavioral Cyber Analytics, and 3) Scalable Testing of System Cyber Dynamics.

DEFENSE NUCLEAR NONPROLIFERATION

As I mentioned earlier, we decided to align all the global nuclear security activities under the Defense Nuclear Nonproliferation account. This will strengthen our focus on countering nuclear terrorism and proliferation, while encouraging cooperation among our programs in this area. The Request includes \$2.1B for the DNN appropriation which includes the NNSA Defense Nuclear Nonproliferation (DNN/NA-20), Nuclear Counter Terrorism Incident Response (NCTIR/NA-40), and Counterterrorism/Counterproliferation (CTCP/NA-80) programs.

Office of Defense Nuclear Nonproliferation

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.

One of our most important accomplishments has been to support the Administration's commitment to secure the most vulnerable nuclear material across the globe in four years. 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 cleaned out of HEU in the last 4 years. The NNSA will complete prioritized removal of vulnerable nuclear material from three more countries this year.

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, still are being produced. While the challenges are substantial, they are not insurmountable.

NNSA, working with its international partners and with strong support from the White House, will continue to eliminate, consolidate and secure high risk materials to ensure that terrorists can never

acquire a weapon of mass destruction. The FY 2014 request for ODNN provides \$1.8 billion to: continue efforts both domestically and internationally to convert research reactors and isotope production facilities from HEU to LEU, consolidate nuclear material in fewer locations, and permanently eliminate it where possible, improve and sustain safeguards and the security of nuclear materials at those locations, support the adoption of security best practices, prioritize efforts to secure or remove high-risk radiological sources, prevent illicit trafficking of nuclear and radiological material through the provision of fixed and mobile detection equipment and export control training, and work in collaboration with international partners to build global capability in these areas.

We will continue to pursue a multi-layered approach to protect and account for material at its source, remove, downblend 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, and we believe this review will ensure that we are able to follow-through on our mission in the decades to come. 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. During the assessment period, the Department will slow down its MOX project. We are committed to disposing of excess plutonium, we recognize the importance of the U.S.-Russia Plutonium Management and Disposition Agreement, and the U.S. will continue to engage key program partners and stakeholders as the assessment of alternative plutonium disposition strategies is developed.

Our continued focus on nonproliferation and nuclear security 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. We must remain committed to reducing the risk of nuclear terrorism and WMD proliferation.

Nuclear Counterterrorism Incident Response

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 leverage at a distance capability 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 Counterproliferation Programs

The aforementioned budget realignment includes the Counterterrorism and Counterproliferation, 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 counterproliferation 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.

NAVAL REACTORS (NR)

Naval Reactors' request for FY 2014 is \$1.246 billion, an increase of 15 percent over the FY 2012 request, to continue safe and reliable naval nuclear propulsion. The program directly supports all aspects of the U.S. Navy's nuclear fleet, which encompasses the Navy's submarines and aircraft carriers, over 40 percent of the U.S. Navy's major combatants. Currently, the nuclear fleet is comprised of 54 attack submarines, 14 ballistic missile submarines, 4 guided missile submarines, and 10 aircraft carriers. Over 8,300 nuclear-trained Navy sailors safely operate the propulsion plants on these ships all over the world, and their consistent forward presence protects our national interests.

Continued safe and reliable naval nuclear propulsion requires that NR maintain the capability to anticipate and immediately respond to small problems before they become larger issues. Our technical base and laboratory design, test, and analysis infrastructure is required for us to thoroughly and quickly evaluate technical issues that arise from design, manufacture, operations, and maintenance, ensuring crew and public safety without impeding the mission of our nuclear-powered fleet. Uncompromising and timely support for safe operation of the nuclear fleet continues to be the highest priority for Naval Reactors.

Beyond fleet support, Naval Reactors continues efforts on its three important new projects: the design of the OHIO Replacement reactor plant; the refueling overhaul for the S8G Land-based Prototype reactor; and recapitalization of our naval spent nuclear fuel infrastructure. Each of the projects is critical to fulfillment of the Navy's longer term needs.

The current OHIO-Class ballistic missile submarines are reaching the end of their operational lives and will begin to retire in 2027. Naval Reactors is designing and developing a life-of-ship core for the OHIO Replacement that will increase SSBN operational availability and reduce strategic deterrence submarine procurements from 14 to 12. The FY 2014 request is \$125.6 million and supports the Navy's schedule and progresses on reactor plant design needed for procurement of reactor plant components beginning in 2019. This request is essential to component design, procurement and ship construction.

The Land-based Prototype provides a cost-effective testing platform for new technologies and components before they are introduced to the fleet, and is essential for the testing of new materials and technology for the OHIO Replacement life-of-ship core. To preserve this vital research, development, and training asset for the long-term and to achieve life-of-ship core for the OHIO Replacement, core development and preparations for the refueling overhaul must continue in FY 2014. The FY14 request for the S8G Land-based Prototype Refueling Overhaul is \$143.8 million.

Finally, the Spent Fuel Handling Recapitalization Project (SFHP) supports the Navy's refueling and defueling schedule for nuclear-powered aircraft carriers and submarines by providing the capability to unload and return spent fuel shipping containers to the shipyard. The FY 2014 budget includes \$70 million to continue conceptual design for a new facility. Significant portions of the existing Expended Core Facility are more than 50 years old, and were not designed for its current mission of processing and packaging spent naval nuclear fuel for permanent dry storage. The existing facility is not capable of handling full-length aircraft carrier fuel from M-290 shipping/storage containers. The need to prioritize operational fleet support following enactment of the Budget Control Act resulted in a year and a half delay to the project; the FY 2014 request supports this revised schedule. Further delay to the SFHP would create a need for additional M-290 containers, at approximately \$100 million per year of delay, for temporary storage.

Like our Weapons program, over the last year, DOE, NNSA and the DoD CAPE conducted a comprehensive analysis of Naval Reactors' program and validated that our requirements are consistent with the President's overall strategy.

OFFICE OF THE ADMINISTRATOR

The NNSA's Office of the Administrator (OA) appropriation provides the Federal salaries and other expenses of the NNSA mission and mission support staff, including the Federal personnel for Defense Programs, Defense Nuclear Nonproliferation, Emergency Operations, Defense Nuclear Security, Acquisition and Project Management, the Office of the Chief Information Officer, Safety and Health, the Administrator's direct staff, and Federal employees at the Albuquerque Complex and site offices. The OA account is an essential enabler of the federal roles and missions that are the heart of our Enterprise.

The OA account continues to streamline operations and provide staffing for efficient and effective oversight to our programs. We have taken aggressive measures to significantly downsize the account, including cutting travel and support services by about 1/3 and offering voluntary separation incentive payments and early retirement to help right-size our workforce.

IMPACT OF SEQUESTRATION

The sequestration cuts now in effect will hamper NNSA's ability to carry out the full range of national security activities planned in our FY 2013 Budget. These cuts are coming five months into the current fiscal year, forcing the NNSA to absorb the spending reduction in a seven-month period rather than an entire year. Under the current law, the NNSA FY 2013 budgetary resources have been cut by roughly 7.8%, which equates to an effective reduction of over 13% when measured over the balance of the fiscal year. Under sequestration, the reduction for the entire NNSA is approximately \$900 million. This results in the Weapons Activities appropriation is approximately \$600 million below the FY 2013 request levels, and more than \$250 million below the FY 2012 levels.

Prior to sequestration taking effect, NNSA informed Congress through hearings on two separate occasions that thousands of contractor jobs at our labs and plants could be affected either through work hour reductions or other personnel actions with Directed Stockpile Work and the Life Extension Programs being impacted the greatest. While we continue to believe that sequestration will cause significant impacts, these preliminary impact statements, which were formulated in a period of uncertainty regarding the precise provisions of the final Continuing Resolution (CR), need to be revised.

Now that we know the actual terms and conditions of the CR, NNSA is working closely with our partners in the labs and plants to develop mitigation strategies that will protect our highest priority workload to the best of our ability given the current resources. Our highest priority will remain the safety and security of our nuclear security enterprise. Once this review is completed, the Department plans to use a combination of the Operating Plan required by the CR, as well as a reprogramming to address the most critical funding needs and implement mitigation strategies to give program managers the flexibility they need to best handle the reductions across the enterprise.

Due to the indiscriminate nature of these cuts and view that it remains poor policy, the President's FY 2014 Budget request does not reflect sequestration's impacts; either in FY 2014 or across the FYNSP.

CONCLUSION

The FY14 budget reaffirms the national commitment to the President's nuclear security vision, applying world-class science that addresses our nation's greatest nuclear security challenges and building NNSA's 21st century nuclear security enterprise through key investments in our people, programs and infrastructure. We are looking toward the future and building an organization that will ensure success. I look forward to working with each of you to help us do that. Thank you.

Neile L. Miller*Principal Deputy Administrator, National Nuclear Security Administration*

Neile L. Miller is the Principal Deputy Administrator for the National Nuclear Security Administration (NNSA). Her nomination by President Obama was confirmed by the U.S. Senate on August 5, 2010.

As Deputy Administrator and Chief Operating Officer, she focuses on matters of management and policy across the NNSA enterprise to define a coherent vision for achieving the President's nuclear security agenda.

Ms. Miller started her career at the Congressional Research Service working on nuclear nonproliferation issues. She later joined the White House Office of Management and Budget as the program examiner for the Department of Energy's radioactive waste management programs and for the Nuclear Regulatory Commission. She subsequently returned to OMB to serve as a senior program examiner in the National Security Division of OMB, where she was responsible for overseeing NNSA programs and the Defense Department's Cooperative Threat Reduction program.

Prior to her appointment, Ms. Miller held several key leadership positions within DOE, including the Department's Budget Director from 2007 to 2010. Earlier in her career she was the Associate Director for Resource Management in the Office of Nuclear Energy, and the Associate Director of International Nuclear Cooperation in the Office of Nuclear Energy.

In the private sector, Ms. Miller worked for Cogema, Inc. and as a consultant, with clients that included DOE, Sandia National Laboratory, and the Government of the Federal Republic of Germany. She also served as policy and communications officer in the Nuclear Energy Agency of the Organization for Economic Cooperation and Development in Paris.

Ms. Miller earned her undergraduate degree in political science from Vassar College and her Masters degree in International Affairs from the Georgetown University School of Foreign Service.

She lives in Chevy Chase, Maryland with her husband, Dr. Werner Lutze, and their two sons, Max and Daniel.

**Statement of Dr. John R. Harvey
Principal Deputy Assistant Secretary of Defense for
Nuclear, Chemical, and Biological Defense Programs**

**Fiscal Year 2014 Budget Request for
Atomic Energy Defense Activities and Nuclear Forces Programs**

**Before the
Strategic Forces Subcommittee
Committee on Armed Services
U.S. House of Representatives**

9 May 2013

Introduction

Chairman Rogers, Ranking Member Cooper, and members of the Subcommittee: I am pleased to testify before you today regarding progress on implementing the Nuclear Posture Review including plans to sustain and modernize our nuclear stockpile and supporting infrastructure, our nuclear delivery platforms, and the command and control system that links nuclear forces with Presidential authority. I will also briefly address the effectiveness of the Departments of Defense (DoD) and Energy (DOE) in pursuing the joint work of the Nuclear Weapons Council (NWC) in ensuring a safe, secure, and effective nuclear stockpile.

I currently serve as Principal Deputy Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (NCB) in the Department's Acquisition, Technology and Logistics (AT&L) organization. Andrew Weber, the Assistant Secretary of Defense (NCB), is the NWC staff director. Frank Kendall, the Under Secretary of Defense (AT&L), chairs the NWC. Within DoD, AT&L/NCB is the principal point of contact for all engagement with the DOE on U.S. nuclear weapons programs. AT&L also oversees DoD acquisition programs to sustain and modernize nuclear delivery systems and systems for their command and control.

U.S. nuclear modernization programs are embedded in an increasingly austere budget environment. The Budget Control Act, previous Appropriations marks, and cost growth in key DOE programs have forced adjustments to some planned modernization and recapitalization efforts. Future cuts from sequestration may affect the modernization programs addressed at this hearing. Not all that we desire in modernization can be achieved on the schedules originally planned—this conclusion is common to both Departments. Our best strategy, therefore, is solid, cost-effective implementation of high-priority programs that address the long-term health of the nuclear enterprise. That strategy is reflected in the President's FY 2014 request for nuclear weapons activities—therefore, congressional support for the request is essential.

Nuclear Weapons Stockpile

Today our nuclear weapons stockpile is the smallest since the Eisenhower administration, but its role in deterring the most grievous of threats to our nation and its allies remains central. The President's FY 2014 request for the core NNSA weapons program is \$5.1 billion, or \$466 million above the FY 2013 continuing resolution level, constituting a 7.5 percent increase in

funding. This level of funding shows the President's commitment to the programs and capabilities essential to DoD's strategic deterrence mission. In addition, the FY 2014 request will enable important progress on a modern, robust nuclear infrastructure that will provide the United States with capabilities to address technical problems in the stockpile, or respond to future geopolitical challenges, with a substantially smaller stockpile than we have today. It would:

- Continue needed production of the life-extended W76-1 SLBM warhead,
- Advance the ongoing Life Extension Program (LEP) for the B61 bomb,
- Advance the W78/88-1 study exploring the feasibility for an interoperable ICBM/SLBM warhead,
- Sustain warhead surveillance efforts, and the science and technology that support stockpile assessment and certification in the absence of underground nuclear testing,
- Replace an aging facility for HEU operations at the Y-12 plant in Oak Ridge with a modern Uranium Processing Facility (UPF).

Budget realities, coupled with large cost escalation for the B61 LEP and for recapitalization of aging infrastructure, have forced adjustments in NNSA's programs. Core elements of the nuclear complex, and critical military requirements, are funded but completion of certain LEPs and infrastructure modernization will be delayed. Among other things, NNSA is deferring construction of a plutonium facility at Los Alamos—the Chemistry and Metallurgy Research Replacement-Nuclear Facility (CMRR–NF)—for at least five years.¹

CMRR–NF deferral frees up funds to place the UPF construction project at Y-12 on a more optimal funding profile, resulting in reduced life cycle cost and reduced risk to ongoing highly enriched uranium operations at antiquated existing facilities. At the same time, it provides flexibility to advance critical warhead LEPs for the W76-1 warhead, the B61-12 bomb, and the W78/88-1 interoperable warhead. Deferral, however, poses some risk to meeting pit manufacture needs for future LEPs and other contingencies; our strategy to mitigate this risk is described below.

Plutonium Strategy

Pit production capacity ramping up to 80 pits per year by the latter part of the next decade may be necessary according to current NWC projections. To achieve this capacity, we must replace the aging and increasingly unsupportable Chemistry and Metallurgy Research facility, currently supporting plutonium pit manufacture carried out at Los Alamos National Laboratory's Plutonium Facility-4 (PF-4). While CMRR–NF deferral from 2023 to at least 2028 delays initial operations of a long-term plutonium infrastructure, it also provides an important opportunity. Because the acquisition timeline for CMRR now overlaps the timeline to recapitalize the PF-4 facility, which is also aging, there is flexibility to explore an integrated and potentially more responsive approach to moving forward on the suite of support capabilities planned for CMRR and to managing long-term pit manufacturing and related infrastructure. To secure the fiscal

¹ The Chemistry and Metallurgy Research Replacement facility would store plutonium parts and provide lab space for plutonium R&D, analytical chemistry, and materials characterization in support of pit production.

benefits and manage the risks of deferral, the NWC is advancing a plutonium strategy with two key components.

First, we are exploring a concept that would provide the essential capabilities planned for CMRR, and also address PF-4 aging, with a phased, more responsive, and more readily implementable approach. The “modular concept” entails construction of a series of smaller, single-purpose (e.g., plutonium casting) modules linked together through secure tunnels with PF-4 and the existing plutonium radiological/analytical facility. The concept would provide means to transfer higher operational risk activities out of PF-4, thereby extending its operational life while enabling production capacity enhancements and sufficient analytical support to production. Over the next two months, the NWC staff, with support from DoD’s Cost Assessment and Program Evaluation (CAPE) organization, will work with NNSA to carry out a business case analysis of this concept (and alternatives), address risks and benefits, pros and cons, and seek initial insights into whether delivery of key capabilities could be achieved earlier than planned for CMRR-NF. If deemed feasible, NNSA would then develop a plan to move forward on engineering development and construction of the modular approach.

Second, to manage risk in the interim, we have identified a near-term option to enable a more rapid response to technical problems in the stockpile or geopolitical challenges. This involves the reuse of existing pits in LEPs, supplemented by a capability to manufacture existing IHE pit designs at a rate of 30 per year by 2021. To achieve this interim goal, existing facilities will be adapted and new equipment procured. Congressional approval of NNSA’s request to reprogram \$120 million in FY 2012 funds is critical to efforts to achieve this interim capability while avoiding greater risks to the stockpile. We urge your support for this request.

Other Nuclear Modernization Activities

The 2010 Nuclear Posture Review concluded the United States will retain a nuclear triad under a New START Treaty composed of ICBMs, SLBMs, and nuclear-capable heavy bombers. The budget submitted to Congress in April, as it has over the past four years, reflects this.

Submarine-Based Nuclear Forces

Sustaining the sea-based leg of our nuclear deterrent, the most survivable leg, is vital particularly as we move to lower numbers. Under New START, Ohio class submarines carrying Trident D-5 SLBMs will compose the majority of the nation’s operationally deployed nuclear warheads, increasing the nation’s reliance on the sea-based leg. Existing Ohio class submarines will begin retiring in 2027. As a result, the Navy is moving out aggressively on an Ohio Replacement submarine with construction of the first boat to begin in 2021. Twelve new boats are planned for purchase with the first boat scheduled to begin patrol in 2031. Careful management of fleet operations is essential to ensuring that existing submarines, which have already been extended 12 years beyond original design life, do not age out before replacement boats come on line. The Navy also has a program underway to extend the service life of the current D-5 missile—including launcher, navigation, fire control, guidance, stages and reentry systems—to match the Ohio submarine service life, and to serve as the initial baseline SLBM for the Ohio Replacement submarine. All DoD sustainment and modernization efforts for the submarine-based deterrent are fully funded in the President’s FY 2014–2018 request—about \$27 billion over the five years.

ICBMs

The Air Force plans to sustain the existing Minuteman III (MMIII) ICBM system through 2030. To achieve this, activities are underway to address emerging needs in the areas of solid rocket motor propulsion, guidance system upgrades and fuze refurbishment. Ongoing intensive flight test and surveillance efforts will help determine whether service life can indeed be extended to 2030 by providing better estimates for component age-out and system end of life. An Air Force Capabilities Based Assessment examining initial requirements and capabilities for a follow-on system to MMIII—termed Ground Based Strategic Deterrence (GBSD)—was completed last August and approved by the AF Chief of Staff. An analysis of alternatives (AOA) will begin this summer to examine specific GBSD options and be completed late in FY14. The AOA will inform near-term MMIII recapitalization programs so that technologies and components can be leveraged for GBSD. A solid rocket motor development program that could support GBSD or, potentially, a follow-on MMIII life extension, is planned to begin in 2016.

W78/88-1 Warhead LEP

The W78 warhead for the Minuteman III ICBM entered the stockpile in 1979. By 2021, it will have been deployed for over 40 years—well beyond initial estimates of its service life. A feasibility and cost study began in 2012 to explore warhead life extension options to ensure that this weapon system can continue its nuclear deterrence mission into the 2020s. As called for in the 2010 NPR, the study is exploring an option for an interoperable ICBM/SLBM warhead. The original military specifications of the W78, approved in 1974, identified this goal but the technology to achieve it was not available then. We believe it is now. This approach is timely because the W88 warhead for the D-5 SLBM is aging and work on its life extension must begin within a decade. There is an opportunity to reduce overall life-cycle costs with a single warhead development program that could meet the life extension objectives of two different warheads. Consistent with the President's long-term vision, there is also opportunity to reduce further the number of warhead types, and the number of reserve warheads in the stockpile needed to hedge against unforeseen technical or geopolitical risk. The study underway, co-led by the Air Force, Navy, and NNSA will produce a feasibility analysis and detailed cost estimates for options under consideration to inform a subsequent decision to enter engineering development. Ongoing efforts among NNSA, the Air Force and Navy to develop common components for ICBM and SLBM warhead arming, fuzing and firing systems will be leveraged. The W78/88-1 LEP provides a unique opportunity to extend W78 and W88 service life with a warhead that incorporates modern safety, security, and control features, and offers potential for reduced life cycle costs and a smaller stockpile.

Strategic Bombers

The U.S. will maintain two B-52H wings and one B-2 wing. Both bombers, however, are aging and sustained funding and support are required to ensure operational effectiveness through the remainder of their service lives. Funding has been allocated to upgrade these platforms; for example, by providing the B-2 with survivable VLF/LF communications, an upgraded defensive management system, and modifications that will permit carriage of advanced digital weapons such as the B61-12 and the Long Range Standoff (LRSO) missile. EHF satellite communications capabilities for both the B-2 and B-52H will be delayed because of increased

focus, in the near term, in providing Family of Advanced Beyond-line-of-sight Terminals (FAB-T) EHF terminals to essential ground and air-based command and control nodes. Fielding FAB-T on bombers, a more technically difficult challenge, will follow. The President's Budget includes \$14 billion over the next five years to sustain and modernize the B-52H and B-2.

Despite continued investments in sustaining existing bombers, over time the ability of these platforms to prevail against increasingly sophisticated defenses will continue to diminish. As a result, the Department is moving out on a program for a new, long-range, nuclear-capable, penetrating bomber—termed the Long Range Strike-Bomber (LRS-B)—that is fully integrated with a family of supporting aircraft (e.g., for electronic warfare and long-range air defense) and ISR assets. The plan is to purchase 80-100 bombers. As part of this effort, essential components of the bomber industrial base, such as low observable technology, are being sustained with technology maturation efforts. The FY 2014–2018 request includes \$8.8 billion for the new bomber development program—a significant increase from last year's plan.

Strategic Cruise Missile

Bomber standoff capabilities are essential to strategic deterrence, and they assure our Allies of our extended deterrence commitment. Modern air defenses put the bomber standoff mission with Air Launched Cruise Missile (ALCM)—the current strategic cruise missile deployed with the B-52H bomber—increasingly at risk. The Air Force recently completed an AOA for an ALCM follow on system called the Long Range Standoff (LRSO) missile. The President has requested \$1 billion over the next five years for LRSO development—this reflects a substantial increase from last year (\$600 million over FY 2013–17) and reflects planned transition from studies to system design and engineering development. The LRSO missile will be compatible with the B-52H, B-2, and LRS-B. The Air Force is collaborating with DOE to study options for a life-extended warhead for LRSO; options include the existing W80 ALCM warhead, the W84 warhead previously deployed with the ground-launched cruise missile, and the warhead for the B61 bomb, which is currently undergoing life extension. Plans are to sustain the existing ALCM and its W80 warhead until the LRSO missile can be fielded.

Dual Capable Aircraft (DCA)

To provide an option to continue the U.S. nuclear presence in Europe, a nuclear capability will be provided to the Joint Strike Fighter (JSF), which is replacing aging F-16 aircraft. The original plan was to deliver a dual capable JSF in 2017; however, the fielding of this capability has been delayed. The Air Force now intends to deliver nuclear capability to all JSFs in Europe by 2024 via the Block IV upgrade. The Air Force is developing options to ensure no gap exists in our ability to meet extended deterrence commitments to allies. This includes possible service life extension of existing DCA, and making sure that the life-extended B61 bomb is compatible with those aircraft.

B61-12 Bomb LEP and Tail Kit

The B61 non-strategic bombs deployed with NATO DCA are an important part of our extended deterrence commitment to the Alliance. The B61 strategic bomb, carried by the B-2 bomber, is an essential component of air-delivered strategic deterrence. The B61 is the oldest warhead design in the U.S. nuclear stockpile with components dating from the 1960s (e.g., vacuum tube radars, analog circuitry) and other limited life components (neutron generators, power sources),

all reaching the end of service life. A joint Air Force-NNSA LEP for the B61 has entered engineering development; test and analysis of the selected design option are underway. NNSA has initiated process development activities to optimize the use of limited NNSA production capacity and ensure component producibility. A single warhead—termed the B61-12—will replace four (one strategic and three non-strategic) types of the B61, and thus reduce the number of warhead types in the U.S. arsenal. As a result, the LEP will provide a safer, more reliable bomb with reduced sustainment costs. Initial production for the B61-12 no later than FY 2019 is essential to manage risk associated with component end of life. We are acutely aware of the high cost of the B61-12 LEP; increased management attention is essential to controlling costs.

In parallel to the LEP, the Air Force is developing a tail kit assembly for the B61-12 that will provide a modest standoff capability, for safe aircraft escape, and sufficient delivery accuracy so that the lower yield of the B61-12 can achieve the same military effect as the original B61. The tail kit eliminates the existing parachute, freeing up additional design space (i.e., weight and volume) to enable assured, long-term warhead reliability and potentially enhanced warhead surety. A tail kit prime contractor was selected in November 2012, and the program is entering engineering and manufacturing development. The total cost of the Air Force Tail Kit program is about \$1.6 billion. NNSA and the Air Force are synchronizing work on the bomb and tail kit assembly to ensure that the capability is delivered in time to meet operational requirements.

Solid Rocket Motor (SRM) Industrial Base

An important strategic modernization issue is sustainment of the large-diameter solid rocket motor industrial base particularly in light of reduced demand from NASA after completing the space shuttle program. A small-scale AF program to maintain a “warm” production line for MMIII solid rocket motors was completed in FY 2012. The Navy is maintaining continuous production capability at a minimum sustaining rate of twelve solid rocket motor sets per year. In FY 2013, the Air Force will spend \$8 million to examine technical expertise needs and develop affordable options for a follow on solid rocket motor modernization, referred to earlier, that will begin in FY 2016. Propulsion technologies developed and matured within the ICBM Demonstration and Validation Propulsion Applications Program (PAP)—funded at about \$40 million per year—will be available for use in that program.

Physical Security

The July 2012 protestor incursion at DOE’s Y-12 facility highlighted the need for continued collaboration between the two Departments to address physical security of nuclear warheads and associated fissile materials. DoD nuclear security professionals were fully integrated into the Y-12 after action reviews and best practice/lesson-learned assessments. The interagency perspective proved beneficial to both Departments as events were dissected. We continue to implement Deputy Secretary guidance to pursue a collaborative approach to nuclear security. We have incorporated NNSA experts into our force-on-force exercises and modeling and simulation efforts. Our goal remains consistent protection standards for nuclear weapons and weapons-usable materials.

Nuclear Command, Control, and Communications (NC3)

An often underappreciated but critical component of strategic deterrence is the nuclear command and control system that links the triad of nuclear forces with the President. Independent of the number of delivery systems and warheads deployed, we require robust, secure, survivable, and

effective systems for early warning, attack assessment, and force direction in support of existing nuclear employment plans and associated contingencies. Positive control of nuclear forces must be assured even under the enormous stress of a nuclear crisis. An effective NC3 system will:

- Clearly and unambiguously detect and characterize an attack;
- Support senior leader conferencing to assess the attack and determine an appropriate and timely response;
- Disseminate emergency action messages to nuclear forces taking into account the survivability of the force elements involved;
- Provide two-way communication with forces so executed; in the case of bombers for their recall before a strike, or for damage assessment after a strike; and
- Provide enduring control of surviving forces.

In fielding NC3 systems, we rely on a discipline grounded in certain key principles including dual phenomenology (both infrared sensor and radar detection) for ballistic missile early warning and threat assessment, redundant communications links, and hardening of systems to nuclear environments. Over the five-year period of the President's request, we will spend \$18 billion on NC3 system RDT&E, procurement, operations, and support to address the following needs:

- Survivable satellite communications (evolution of Defense Satellite Communications System/MILSTAR to Advanced Extremely High Frequency)
- Survivable communications to forces (B-2 LF/VLF, FAB-T EHF terminals, Minuteman MEECN Program Update)
- Early warning satellite modernization (evolution of Defense Support Program (DSP) to Space Based InfraRed System (SBIRS) satellites)
- Improved secure senior leader conferencing (day to day and stressed environments)
- Crypto modernization and cyber vulnerability assessment
- Hardening of critical communications links to Electromagnetic Pulse
- Airborne and ground mobile command post sustainment/modernization (National Airborne Operations Center, Mobile Consolidated Control Center)
- Support TACAMO ("Take Charge and Move Out") aircraft operations.

Led by Deputy Secretary Ash Carter, increased high-level attention has focused on needed steps to sustain and modernize essential NC3 systems and capabilities. The Senior NSPD-28 Oversight Committee (SNOC), co-chaired by the Under Secretary for AT&L and the DoD Chief Information Officer (CIO), has been revitalized. The SNOC's role is to oversee research, development and acquisition, and operational activities involving NC3 as well as facilitate high-quality communications links supporting Presidential conferencing and continuity of executive branch operations, whether day-to-day or in crises. We recently established an organization under the CIO—the Strategic and National Command, Control, Communications, and Intelligence (SNC3I) Joint Systems Engineering and Integration Office (JSEIO)—that serves as the principal systems architect for NC3 within the Department. The JSEIO will provide annual guidance to the Services and Defense Agencies regarding specific programmatic activities to be carried out in support of the overall NC3 system. Compliance with this guidance is mandatory; deviations must have the concurrence of the SNOC.

Work of the Nuclear Weapons Council

Over the past year, in this austere fiscal environment, the Departments of Defense and Energy have markedly strengthened their partnership in advancing a shared commitment to a safe, secure, and effective nuclear deterrent. Under the auspices of the NWC, the DoD CAPE office and NNSA collaborated on a joint review of DoD nuclear weapons requirements and of NNSA funding options to meet those requirements. NNSA provided unprecedented transparency into its entire program and the budgetary processes that support it. CAPE was able to apply its insights into the Department's acquisition programs to develop rough "should cost" estimates for, and identify potential for efficiencies in, NNSA programs. This comprehensive assessment resulted in a balanced approach involving some further adjustments to DoD modernization schedules, and adjustments to resource reallocations within NNSA's five-year program. In a separate effort, the two departments developed a 25-year "baseline plan" to synchronize schedules for warhead LEPs, modern delivery platforms to carry those warheads, and initial operations for supporting infrastructure. Further work is underway to confirm this baseline is affordable and executable over the long term.

The relationship between the two Departments is unique in government. In accordance with Presidential guidance, DoD generates the requirements for nuclear warheads. DOE, with a separate funding line and oversight from appropriations subcommittees separate from those that oversee DoD, conducts the research, development and acquisition programs that address those requirements. The legacy of this current arrangement evolved from the Manhattan Project in the 1940s when clear civilian control of this new and awesome technology, having both military and peaceful application, was mandated. That legacy has had certain benefits relevant even today, but it has also introduced inherent inefficiencies in the way nuclear weapons programs are now pursued. Section 3166 of the Fiscal Year 2013 National Defense Authorization Act establishes a Congressional advisory panel that will examine these and related issues in seeking to strengthen governance and oversight of the nuclear weapons enterprise. We, the DoD, look forward to working with NNSA and the panel to ensure that national security needs are most effectively and efficiently met.

Conclusion

The nuclear threat to the United States has evolved considerably since the end of the Cold War. No longer does the threat of a large-scale nuclear exchange hover constantly over the world. Yet, we cannot afford to be complacent. We must continue to field a strong nuclear deterrent that is supported by an agile and responsive infrastructure, and we must continue to carry out the threat reduction and nonproliferation activities that help to manage nuclear terrorist threats. The Department of Defense remains committed to its vital partnership with DOE in meeting the Nation's most fundamental security needs. In closing, I respectfully ask for your support for the President's FY 2014 budget request. This will ensure that we are fully capable of providing safety and security to the American people.

Dr. John Harvey
Principal Deputy Assistant Secretary of Defense for Nuclear, Chemical,
and Biological Defense Programs



Since July 2009, Dr. Harvey has served as Principal Deputy Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs where he advises on plans, policy and oversight of the U.S. nuclear weapons program, programs for combating weapons of mass destruction, chemical weapons demilitarization, treaty management and the work of the Defense Threat Reduction Agency.

From March 2001 to July 2009, Dr. Harvey served as Director, Policy Planning Staff of the National Nuclear Security Administration where he advised the NNSA Administrator on major policy and program decisions.

He was responsible for studies and analyses relating to NSC-directed policy reviews, the work of the Nuclear Weapons Council, external advisory boards, and interagency working groups. He led development of the Strategic Planning Guidance that each year informs NNSA's program, planning, budgeting and execution process. Dr. Harvey was "point" for NNSA on the 2001 Nuclear Posture Review and its implementation, the drafting of Presidential Directive NSPD-28 addressing the command, control, safety and security of U.S. nuclear forces, and the work of the Congressional Commission on the Strategic Posture of the United States.

From March 1995 to January 2001, Dr. Harvey served as Deputy Assistant Secretary of Defense for Nuclear Forces and Missile Defense Policy where he developed and oversaw implementation of U.S. policy governing strategic and theater nuclear forces and ballistic missile defense. This included development of U.S. nuclear weapons employment policy, oversight of the Single Integrated Operational Plan (SIOP), interactions with allies on nuclear weapons matters including serving as the U.S. representative to the NATO High Level Group, and participation in program and budget reviews of U.S. nuclear forces and systems for their command and control. He was the Secretary's principal advisor and point of contact with other agencies and with Congress regarding the CTBT. He formulated U.S. policy on ballistic missile defense, provided direction to system developers, and oversaw efforts to provide shared early warning of missile attack to U.S. allies, friends and partners.

From 1989 to 1995, Dr. Harvey directed the Science Program at Stanford University's Center for International Security and Arms Control where he led research efforts on the proliferation of mass destruction weapons and delivery systems, the safety and security of U.S. nuclear forces, the role of export controls on advanced dual-use technologies in national security, and the implications of advanced conventional weapons for regional security. He has lectured on arms control and national security policy in the academic program at Stanford.

From 1978 to 1990, Dr. Harvey was a staff physicist with the Lawrence Livermore National Laboratory, initially in Z-Division where he carried out assessments of the Soviet nuclear weapons program. He also served as Project Manager for Advanced Strategic Missile Systems, where he directed systems studies addressing effectiveness, safety, and security of nuclear warheads for Small ICBM and alternative basing options for the Peacekeeper ICBM, and as Deputy Program Leader for START and INF Verification. From 1982 to 1985, Dr. Harvey was assigned to the Strategic Arms Control Policy Office in the Department of Defense as a technical advisor to the START negotiations with the Soviet Union.

Dr. Harvey has served on several senior advisory panels. For his service in DoD, he was awarded, in September 1985 and in January 1997, the Secretary of Defense Medal for Outstanding Public Service.

Dr. Harvey received his BA in physics from Rutgers University and his MS and PhD degrees in experimental elementary particle physics from the University of Rochester. He is the author or co-author of numerous scientific and technical papers.

**Written Statement of David Huizenga
Senior Advisor for Environmental Management
United States Department of Energy
Before the Subcommittee on Strategic Forces
Armed Services Committee
United States House of Representatives**

May 9, 2013

Good morning, Mr. Chairman, Ranking Member Cooper, and Members of the Subcommittee. I am pleased to be here today to represent the Department of Energy's (DOE) Office of Environmental Management (EM). I would like to provide the Members with an overview of the EM program, key accomplishments during the past year, 2013 planned accomplishments and progress to date, the projected impacts of sequestration, and planned accomplishments under the FY 2014 Request.

Overview of the EM Mission

EM's mission is to complete the safe cleanup of the environmental legacy resulting from five decades of nuclear weapons development and government-sponsored nuclear energy research. This environmental legacy includes 88 million gallons of some of the world's most dangerous radioactive wastes, thousands of tons of spent nuclear fuel (SNF), over ten thousand containers of excess plutonium and uranium, over five thousand contaminated facilities, millions of cubic meters of contaminated soil and billions of gallons of contaminated groundwater. As the largest environmental cleanup program in the world, EM was charged with the responsibility of cleaning up 107 sites across the country; an area equal to Rhode Island and Delaware combined. EM has made significant progress in this cleanup mission, completing the cleanup work at 90 of the 107 sites through the end of 2012.

EM Cleanup Objectives

EM continues to pursue its cleanup objectives safely within a framework of nuclear safety orders, environmental regulatory compliance commitments and best business practices. The rationale for cleanup prioritization is based on achieving the highest risk reduction benefit per radioactive content (activities focused on materials and wastes that contain the highest concentrations of radionuclides and sites with the highest radionuclide contamination). Taking many variables into account, EM has generally prioritized its cleanup activities across the EM complex as follows:

- Safety, security, and quality
- Environmental Compliance
- Radioactive tank waste stabilization, treatment, and disposal
- Spent (used) nuclear fuel storage, receipt, and disposition
- Special nuclear material consolidation, stabilization, and disposition
- High-risk soil and groundwater remediation
- Transuranic and mixed/low-level waste disposition
- Soil and groundwater remediation
- Excess facilities deactivation and decommissioning.

In addition to these priorities, EM is committed to sound technology development and deployment as a way to reduce costs and fulfill its critical mission. EM develops and implements first-of-a-kind technologies to further enhance its ability and efficiency in cleaning up radioactive waste. Through these innovations, EM and the companies that perform its cleanup work have remained world leaders in this arena. EM's work enables other crucial DOE missions to continue across the United States. For example, EM supports the non-proliferation mission of the Department by providing and managing receipts of foreign and domestic research reactor fuels from around the world. EM supports both Science and NNSA national laboratories by managing and dispositioning wastes and remediating and removing old facilities, enabling the Department to develop new capabilities. Finally, EM has consolidated nuclear materials from around the complex, reducing security requirements at a number of labs and former weapons production sites. By reducing EM's cleanup footprint, EM is lowering the cost of security, surveillance, infrastructure, and overhead costs that would otherwise continue for years to come.

Additional strategies are integrated into cleanup activities that are important to the achievement of EM cleanup progress as well as the stakeholders and states where cleanup sites are located. These strategies include development of technologies that can improve the efficiency and effectiveness of the cleanup activity, better use of contract types, options and alternatives for specific cleanup activities, and integration/optimization of shipping to disposal facilities to reduce costs. Most importantly, EM will continue to discharge its responsibilities by conducting cleanup within a "Safe Performance of Work" culture that integrates environmental, safety, health, and quality requirements and controls into all work activities. This ensures protection to the workers, public, and the environment.

Key Accomplishments in the Past Year

I would like to take this opportunity to highlight a number of the Office of Environmental Management's most recent accomplishments.

Continuous Improvement in Integrated Safety Management

One of my highest areas of emphasis has been in leading improvements to the organizational, safety, and security culture of EM. An organization's culture directly impacts how the organization performs. For industrial organizations, and particularly for nuclear organizations, having a strong safety and security culture is imperative for ensuring the safe and secure performance of high-quality work. It must be a fundamental value shared by all members of the organization at all levels.

In 2011, DOE accepted the Defense Nuclear Facilities Safety Board recommendation to strengthen the safety culture at the Waste Treatment and Immobilization Plant in Hanford. Recognizing the importance of this initiative we have expanded our scope to improve safety culture at all of our EM sites. Efforts in this area are ongoing, and we have trained over 1,000 senior federal and contractor managers on Leadership for a Safety Conscious Work Environment. Early indications are that we are seeing a clear recognition by managers of the need to improve the communication of expectations that flow throughout our sites and headquarters. We have also continued to improve our safety and security culture through other ongoing initiatives such as evaluating field site safety management, sharing safety lessons learned and best practices, and working to improve our security and quality assurance programs across all of EM.

Part of maintaining a strong organizational culture is embracing the concepts of continuous improvement and fostering a learning and questioning organization. While EM is focusing on efforts to improve our culture and is seeing success through our interactions with our leadership and employees at our sites, there is more work to be done, and this will continue to be a key area of focus for EM.

Project and Contract Management

A second area of emphasis has been the improvement of project and contract management. EM's project and contract management has long been designated a governmental "high risk area" by the Government Accountability Office. Key EM reforms in this area include implementing policies requiring more front-end planning; ensuring federal project directors and contracting officers have access to relevant training to help enhance their project and contract management knowledge; improving cost estimating; conducting more frequent project reviews by peers and experts in project management to ensure issues are identified early and lessons

learned are being applied in real-time; selecting proper contract types; tying fee strategies to final outcomes; and restructuring our portfolio into smaller, better defined capital asset projects and non-capital operations activities.

These reforms are already bearing fruit. On February 14, 2013, GAO issued its biennial update to the high risk list. In recognition of EM's improvements in contract and project management, GAO narrowed the scope of its high risk designation, focusing on EM capital asset projects with costs greater than \$750 million. In the report, GAO recognized EM management for demonstrating "strong commitment and top leadership support for improving contract and project management." EM will continue the specific project and contract management reforms above.

The Office of Environmental Management is continuing to make progress on constructing EM's two largest projects -- the Waste Treatment and Immobilization Plant (WTP) in Richland, Washington and the Salt Waste Processing Facility in Aiken, South Carolina.

The WTP will treat and immobilize in glass the bulk of approximately 56 million gallons of radioactive waste stored in 177 underground storage tanks at the Hanford site. We have encountered several technical and management issues at the Pretreatment Facility and the High-Level Waste Facility and are working expeditiously to address them. Full construction continues on the Low-Activity Waste Facility, Analytical Laboratory and the Balance of Facilities (support facilities). The Department has determined to ramp-up construction activities in the High-Level Waste Facility in areas not impacted by technical issues.

Over the last several months, the former Energy Secretary and a number of top scientists and engineers reviewed many aspects of the WTP. Approaches are being evaluated to resolve the issues associated with criticality, hydrogen generation, erosion/corrosion, and tank mixing issues. Technical teams developed as a result of this review draw upon expertise from academia, industry, and the Department's national laboratories.

EM's second largest construction project, the Salt Waste Processing Facility, will treat the salt portion of the liquid radioactive waste inventory at the Savannah River Site. This project and is 69% complete. A pilot version of the treatment plant has been operating successfully since 2008, providing high confidence in the technical capabilities of SWPF. To date, the pilot plant has processed over 3 million gallons of tank waste. Due to delays in the delivery of key facility components meeting acceptable quality levels for nuclear facilities, including mixing vessels, SWPF is experiencing cost over-runs and schedule delays. Since the delivery of the mixing vessels last year, we are working closely with our contractor to identify the most economical and timely path for completion.

Finally, I would like to provide an update on a third important EM construction project. The Integrated Waste Treatment Unit (more commonly known as the Sodium Bearing Waste project) will treat 900,000 gallons of radioactive liquid waste stored in underground tanks at the Idaho National Laboratory. Following the completion of construction, the facility began startup testing. However, startup testing was suspended in June 2012 to allow detailed evaluation of a system pressure event that occurred during cold commissioning. EM is planning to resume facility startup operations in early 2014.

Each of these three construction projects involve the processing, treatment and immobilizing high level radioactive/hazardous waste into glass or solid carbonate. These projects have been especially challenging considering these are first-of-a-kind and one-of-a-kind facilities.

Cleanup Progress

Thanks in part to the improvements in integrated safety management, contract management, and project management, EM has achieved major cleanup successes:

- *Footprint Reduction.* In 2009, the total footprint of EM's cleanup sites was 931 square miles. Through January 2013, we have reduced that figure by 74 percent, primarily through the use of Recovery Act funding to complete the cleanup of large areas of the Hanford and Savannah River sites.
- *High Level Radioactive Waste.* We have also made significant progress in the treatment of high-level radioactive waste, which represents the most hazardous and costly component of EM's cleanup mission. At the Savannah River Site, in FY2012 we achieved closure of two high-level waste tanks—the first tanks closed at the site since 1997—and packaged a record high of 275 canisters of high level waste in a single year at the Defense Waste Processing Facility.
- *Transuranic Waste.* Finally, we continue to achieve major successes with our nation-wide program for the transportation and disposition of transuranic waste. To date, we have sent more than 11,000 shipments of this waste to the Waste Isolation Pilot Plant in Carlsbad, New Mexico for disposal.

EM has achieved significant progress. However, I would also like to provide you an update on an issue that has emerged this year. In 2005, DOE completed a tank stabilization effort designed to remove much of the liquid waste from Hanford's single shell tanks. In February, DOE found that one tank continues to leak and five other tanks are showing declining liquid level trends that may indicate leaking. Video examination of the interior of the tanks is planned in the coming months. Both the Department of Energy and the Washington State Department of Ecology agree that the leaks pose no immediate health threat. Safe storage of tank waste until

it is treated for permanent disposal is a top priority, and EM is working to further investigate the issue and evaluate appropriate corrective actions.

Highlights of the FY 2014 Budget Request

The FY 2014 EM budget request totals \$5.621 billion, which is \$88.7 million less than the FY 2012 current enacted amount. The request includes a \$463 million net neutral transfer from Defense Environmental Cleanup to the Uranium Enrichment Decontamination and Decommissioning Fund for the Budget proposal to reauthorize the Fund. The request funds Defense Environmental Cleanup activities at \$5.317 billion for FY 2014. Examples of planned activities and milestones for FY 2014 by site-specific categories are:

Idaho National Laboratory, Idaho
(Dollars in Thousands)

FY 2012	FY 2014 Request
\$384,669	\$365,010

Key Accomplishments Planned for FY 2014

- Process and ship approximately 4,500 cubic meters of contact-handled TRU Waste to the Waste Isolation Pilot Plant.
- Continue sodium-bearing waste treatment operations.
- Maintain tank farm and systems for delivery of sodium bearing waste until treatment is complete.

Los Alamos National Laboratory, New Mexico
(Dollars in Thousands)

FY 2012	FY 2014 Request
\$188,161	\$219,789

Key Accomplishments Planned for FY 2014

- Support process towards completion of processing and removal of 3,706 cubic meters of above-ground TRU waste (June, 2014 milestone).
- Continue groundwater and remediation activities.
- Continue operation of new oversize modular box line and disposition of excess materials and TRU waste.
- Continue disposition of mixed low-level waste / low-level waste.
- Support decontamination, decommissioning and demolition activities for process-contaminated facilities at Technical Area-21.

Oak Ridge Reservation, Tennessee
(Dollars in Thousands)
(Includes Safeguards & Security Funding)

FY 2012	FY 2014 Request
\$218,902	\$216,827

Key Accomplishments Planned for FY 2014

- Continue shipments of Consolidated Edison Uranium Solidification Project material from the uranium-233 inventory in Building 3019A to Nevada for disposal.
- Complete planning and readiness activities for processing the remaining uranium-233 inventory in Building 2026.
- Conduct a screening characterization of the West End Mercury Area of Y-12 National Security Complex to refine estimates of the nature and extent of mercury contamination and to identify areas that will require full characterization and mitigation measures.
- Continue operations of liquid, gaseous and process waste systems at Oak Ridge National Laboratory.

- Continue Sludge Disposition Build-out Project Design at TRU Waste Processing Center for sludge stabilization.
- Continue transfers of transuranic waste to the Transuranic Waste Processing Center located at the Oak Ridge National Laboratory.
- Continue processing and disposal of contact-handled and remote-handled transuranic waste.

Richland Site, Washington
(Dollars in Thousands)
(Includes Safeguards & Security Funding)

FY 2012	FY 2014 Request
\$1,019,121	\$990,863

Key Accomplishments Planned for FY 2014

- Continue remediation of the 618-10 burial ground and continue remediation of other waste sites along the Columbia River.
- Initiate deactivation, decontamination, decommissioning and demolition of the high-risk Building 324 and the remediation of soil underneath.
- Continue deactivation and decommissioning of facilities in the Plutonium Finishing Plant complex, including deactivating and preparing for dismantlement of the above grade portions of 234-5Z, 243-Z and other facilities.
- Treat and dispose of liquid waste from site generators and dispose treated liquid effluents from the 200 Area Liquid Effluent Facility.

Office of River Protection, Washington
(Dollars in Thousands)

FY 2012	FY 2014 Request
\$1,182,010	\$1,210,216

Key Accomplishments Planned for FY 2014

- Continue construction of Low Activity Waste, Laboratory, and Balance of Facilities and complete construction of Analytical Laboratory.
- Continue activities for the Design Completion Team to resolve WTP technical issues and align the preliminary documented safety analysis with the design to allow for resumption of HLW construction in all areas of the facility by the end of 2014.
- Continue single shell tank retrieval activities in order to complete all C Farm retrievals by the end of 2014.
- Continue AY/AZ Farm ventilation system upgrades and Feed Delivery System activities.

Savannah River Site, South Carolina
(Dollars in Thousands)
(Includes Safeguards & Security Funding)

FY 2012	FY 2014 Request
\$1,316,922	\$1,209,457

Key Accomplishments Planned for FY 2014

- Produce 100 canisters at the Defense Waste Processing Facility.
- Continue closure activities for Tanks 5 and 6.
- Process 3 million gallons of salt tank waste and dispose over 5 million gallons of low-activity waste onsite in the Saltstone Disposal Units.
- Continue construction of the Salt Waste Processing Facility.
- Continue receipt of Foreign/Domestic Research Reactor Used Nuclear Fuel and implement Augmented Monitoring and Condition Assessment Program of Used Nuclear Fuel in wet storage.
- Store and ship non-Moxable plutonium to the Waste Isolation Pilot Plant.

- Continue processing of low-level and mixed low-level radioactive waste and disposal operations in E Area.
- Continue Building 235-F Risk Reduction scope to meet Implementation Plan for Defense Nuclear Facilities Safety Board's Recommendation 2012-1.

Waste Isolation Pilot Plant, New Mexico
(Dollars in Thousands)
(Includes Safeguards & Security Funding)

FY 2012	FY 2014 Request
\$218,179	\$208,367

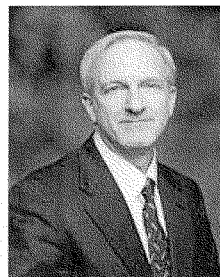
Key Accomplishments Planned for FY 2014

- Support transport and disposal of remote-handled and contact-handled TRU waste at the Waste Isolation Pilot Plant.
- Continue Central Characterization Project for TRU waste at Los Alamos National Laboratory, Idaho National Laboratory and Oak Ridge National Laboratory.
- Maintain capability for receipt and disposal for up to 21 shipments per week of contact-handled and remote-handled TRU for 41 weeks.

Conclusion

Mr. Chairman, Ranking Member Cooper, and Members of the Subcommittee, I am honored to be here today representing the Office of Environmental Management. EM is committed to achieving its mission and will continue to apply innovative environmental cleanup strategies to complete work safely, on schedule, and within cost thereby demonstrating value to the American taxpayers. I am pleased to answer any questions you may have.

DAVID G. HUIZENGA
SENIOR ADVISOR,
OFFICE OF ENVIRONMENTAL MANAGEMENT



President Obama designated David G. Huizenga as the Acting Assistant Secretary for the Office of Environmental Management, effective July 20, 2011.

A nationally and internationally recognized expert in nonproliferation and nuclear waste management issues, Mr. Huizenga has over 25 years of leadership, management, and technical experience in a wide variety of programs across the Department of Energy. He began his career researching and solving some of the Environmental Management program's greatest challenges as a Pacific Northwest National Laboratory research engineer at the Hanford site in 1985. In that capacity, Mr. Huizenga worked on long-term solutions to aging single-shell tanks that were leaking radioactive waste in the soil and other activities to protect the Columbia River and developed computer modeling tools to evaluate the long-term performance of low-level radioactive waste forms.

Mr. Huizenga played a successful leadership role for over a decade in the Office of Environmental Management, where he began as a technical advisor on waste management policy and ultimately served as a Deputy Assistant Secretary. He was instrumental in establishing complex-wide waste management and nuclear materials disposition strategies that were used to accelerate closure of the Rocky Flats Plant and the removal of special nuclear materials from Hanford and other sites. He worked closely with the Carlsbad Site Office to open the Waste Isolation Pilot Plant, the world's first deep geologic repository.

In 2002, Mr. Huizenga transferred to the National Nuclear Security Administration, where he has managed several key national security programs aimed at reducing the worldwide threat of nuclear terrorism by working cooperatively with over 100 countries to secure nuclear weapons and weapons-usable nuclear materials and enhance the detection of illicit trafficking of nuclear and other radioactive materials. From February 2002 to November 2002, Mr. Huizenga served as the Deputy Director of the Office of International Nuclear Safety and Cooperation. He then went on to serve as the Assistant Deputy Administrator for the Office of International Material Protection and Cooperation. Mr. Huizenga became the Principal Assistant Deputy Administrator for the \$2.5 billion Office of Defense Nuclear Nonproliferation in January 2011.

Mr. Huizenga is well known and respected for being a consensus builder and team player both within the U.S. government and in the international community. In recognition of his international credentials, Mr. Huizenga served four years as the U.S. Senior Technical Advisor on the International Atomic Energy Agency (IAEA) Radioactive Waste Advisory Committee. Working with the Department of State, he led the technical negotiations for the 1997 IAEA Radioactive Waste and Spent Fuel Convention. He has testified numerous times before Congress on matters of international and national security.

Mr. Huizenga has a Bachelor of Science in Chemistry and a Masters in Chemical Engineering from Montana State University. He graduated as Outstanding Senior Chemist, Sigma Xi, 1980, and Outstanding Analytical Chemist, American Chemical Society, 1980. He has received Meritorious Presidential Rank Awards in 2000 and 2008 and the Secretary of Energy Gold Award in 1998.

Mr. Huizenga lives in Arlington, Virginia with his wife and two children.

TESTIMONY OF
DR. PETER S. WINOKUR, CHAIRMAN
DEFENSE NUCLEAR FACILITIES SAFETY BOARD

SAFETY OVERSIGHT OF DEPARTMENT OF ENERGY
DEFENSE NUCLEAR FACILITIES

SUBCOMMITTEE ON STRATEGIC FORCES
HOUSE ARMED SERVICES COMMITTEE

UNITED STATES HOUSE OF REPRESENTATIVES

MAY 9, 2013

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

Thank you for the opportunity to testify on nuclear safety issues at defense nuclear facilities operated by the Department of Energy (DOE) and the National Nuclear Security Administration (NNSA). This is a period of significant transition for DOE and includes billions of dollars in design and construction projects and a huge portfolio of site cleanup work, as well as ongoing activities to support the nuclear weapons stockpile. The Defense Nuclear Facilities Safety Board (Board) believes it is prudent to proactively address safety issues at DOE's defense nuclear facilities to ward off threats to public health and safety. The Board continues to champion the early integration of safety in design, efforts to improve safety culture in DOE's federal and contractor workforce, and the need to strengthen worker protections through improvements in work planning and conduct of operations at DOE's defense nuclear facilities.

Today I will briefly discuss the Board's Fiscal Year (FY) 2014 Budget Request along with the impact of the FY 2013 Continuing Resolution on the Board's mission. I will then provide some background on the Board's mission and how we operate, which will be followed by the Board's assessment of high-priority safety issues related to DOE and NNSA defense nuclear facilities. I will conclude by summarizing the changes to the Board's enabling statute enacted in the FY 2013 National Defense Authorization Act.

Resource Needs of the Defense Nuclear Facilities Safety Board

I would like to say a few words about the Board's FY 2014 Budget Request. The President's Budget Request for FY 2014 includes \$29.915 million in new budget authority for the Board. This is an increase of approximately \$3.1 million compared to the budget enacted in the FY 2013 Full-Year Continuing Appropriations Act, after the effect of sequestration. This budget request will support a staffing level of 120, which is the target that the Board has been growing toward for the past several years. Given the current pace and scope of activities in the DOE defense nuclear complex, the Board believes this level of staffing is necessary to provide

independent oversight to ensure that public and worker health and safety are adequately protected.

Our FY 2013 new budget authority under the Continuing Appropriations Act after sequestration is \$26,785,695. To meet its financial commitments for the remainder of FY 2013, the Board will reduce planned agency travel by 29%. Travel is a vital part of fulfilling our safety oversight mission. Visits by staff to DOE defense nuclear facilities are the most effective way for the Board to conduct its firsthand assessment of safety at DOE sites. The Board will also reduce its advisory and assistance contracts by 76%. These contracts have provided a valuable source of very specific expertise to the Board. The Board continues to evaluate the fiscal landscape and may ultimately reduce oversight at some sites by reducing the number of site representatives or staff reviews. Later in this testimony, the Board will discuss the risk factors it will use to prioritize its oversight to ensure adequate protection of the public and workers.

The Board's budget is essentially devoted to maintaining and supporting an expert staff of engineers and scientists (most of whom have technical master's degrees or doctorates) required to accomplish our highly specialized work. Seventy percent of our budget request for FY 2014 is for salaries and benefits, four percent is for travel and transportation (essential because of the need to physically visit defense nuclear facilities), and three percent is for technical expert contracts. In all, approximately 80 percent of the Board's obligations are directly related to technical oversight.

As you will see in my assessment of high-priority safety issues in this testimony, the scope of the Board's mission continues to evolve and grow. The Board is required to provide safety oversight of increasingly complex, high-hazard operations critical to national defense, including assembly and disassembly of nuclear weapons, fabrication of plutonium pits and weapon secondaries, production and recycling of tritium, criticality experiments, subcritical experiments, and a host of activities to address the radioactive legacy resulting from nearly 70 years of operations. Additionally, even with DOE's decision to suspend the Chemistry and Metallurgy Research Replacement project at Los Alamos, the Board is required to provide

oversight to alternate plutonium strategies that will be necessary to support the nuclear weapons stockpile.

In a joint report to Congress on July 19, 2007, the Board and DOE agreed that early integration of safety in design is both crucial and cost-effective, as it avoids schedule delays as compared to the case when safety issues are recognized late in the design process (or worse, after construction has commenced). The failure to identify design flaws that could impact public and worker health and safety early in the design process can significantly increase project costs due to the price of re-engineering and the need to make post-construction modifications to complex DOE defense nuclear facilities. Such flaws have in the past typically increased costs and delayed operations while corrections were made. With DOE's design and construction costs on the order of \$20 billion, each increase in project cost of one percent equates to an increase of about \$200 million. Consequently, the Board's Fiscal Year 2014 Budget Request provides cost-effective oversight while protecting public and worker health and safety.

The same principles of oversight apply to the safe conduct of operations—hazards are recognized while the procedure for an operation is being developed, safety controls are built into the process, and the operation is then conducted safely and efficiently. Finally, the Board oversees DOE's technology development activities and brings attention to new technologies that are important to safety and should be fully mature and capable of performing their intended safety functions.

Statutory Mission and Operations of the Board

The Board was created by Congress in 1988. Congress tasked the Board to conduct independent safety oversight of defense nuclear facilities under the control or jurisdiction of the Secretary of Energy. The mission of the Board is to provide independent analysis, advice, and recommendations to the Secretary of Energy to inform the Secretary, in the role of the Secretary as operator and regulator of the defense nuclear facilities of the Department of Energy, in providing adequate protection of public health and safety at such defense nuclear facilities. The

Atomic Energy Act of 1954, as amended, currently establishes two categories of facilities subject to Board jurisdiction: (1) those facilities under the Secretary of Energy's control or jurisdiction, operated for national security purposes that produce or utilize special nuclear materials; and (2) nuclear waste storage facilities under the control or jurisdiction of the Secretary of Energy. The Board's jurisdiction does not extend to facilities or activities associated with the Naval Nuclear Propulsion Program, transportation of nuclear explosives or materials, the U.S. Enrichment Corporation, facilities developed pursuant to the Nuclear Waste Policy Act of 1982 and licensed by the Nuclear Regulatory Commission, or any facility not conducting atomic energy defense activities.

Under its enabling statute, 42 U.S.C. § 2286 *et seq.*, the Board is responsible for independent oversight of all programs and activities impacting public health and safety within DOE's defense nuclear facility complex – a complex that has served to design, manufacture, test, maintain, and decommission nuclear weapons and has served other national security purposes. The Board is required to review the content and implementation of DOE standards, facility and system designs, and events and practices at DOE defense nuclear facilities that the Board determines have adversely affected, or may adversely affect, public health and safety. The Board is further authorized to access and analyze any information related to a DOE defense nuclear facility. In all cases, the Board is required to make recommendations to the Secretary of Energy that the Board believes are necessary to ensure adequate protection of public health and safety. In this regard, the Board's actions are distinguishable from a regulator because the Secretary may accept or reject the recommendations in whole or in part.

Under its statute, the Board must consider the technical and economic feasibility of implementing its recommended measures. Consistent with the approach taken by DOE and with commercial nuclear regulations, the Board is not required to refrain from issuing a safety recommendation based on either consideration. Nonetheless, in formulating its recommendations to the Secretary of Energy, the Board is confident that it has considered the technical and economic feasibility of each of its recommendations. On February 14, 2013, the Board issued a report to the congressional defense committees regarding how the Board

considers the technical and economic feasibility of implementing its recommended measures. The Board is very mindful of the need for efficient and cost-effective solutions to safety problems at defense nuclear facilities. In evaluating the proper course of action for existing facilities that do not meet modern industry standards and design requirements, both the Board and DOE consider the entire suite of options for mitigating hazards as well as factors such as the remaining life of the facilities, schedules for replacing them, and means to mitigate disruptions to ongoing operations that may result from recommended safety improvements. However, the Board has no authority to specify a particular solution; that authority is the Secretary's alone.

Under the Board's statute, the Secretary of Energy may "accept" a Board recommendation but make a determination that its implementation is impracticable because of budgetary considerations or because the implementation would affect the Secretary's ability to meet the annual nuclear weapons stockpile requirements. The Secretary must report any such decision to the President and to Congress. The Secretary of Energy has never made a determination that a Board recommendation cannot be implemented due to budget impracticability. The Board believes we have executed our statute in a faithful and responsible manner.

Finally, if the Board determines that a recommendation relates to an imminent or severe threat to public health and safety, the Board is required to transmit its recommendations to the President, as well as to the Secretaries of Energy and Defense. After receipt by the President, the Board is required to make such recommendations public and transmit them to the Committees on Armed Services, Appropriations, and Energy and Commerce of the House of Representatives and the Committees on Armed Services, Appropriations, and Energy and Natural Resources of the Senate. Throughout its history, the Board has never made a determination of imminent or severe threat to the public.

The Board evaluates all of DOE's and NNSA's activities at defense nuclear facilities in the context of Integrated Safety Management (ISM). The core functions of ISM are

straightforward and have been institutionalized in policy by DOE and NNSA in response to the Board's recommendations. They are:

- Define the scope of work;
- Analyze the hazards;
- Develop and implement hazard controls;
- Perform work within controls; and
- Provide feedback and continuous improvement

ISM also institutionalizes guiding principles that form the basis for a safety-conscious and efficient organization, including:

- Balanced mission and safety priorities;
- Line management responsibility for safety;
- Competence commensurate with responsibility; and
- Identification of safety standards and requirements appropriate to the task at hand

ISM is a process-based approach in which safety considerations are built into activities as they are planned and into facilities as they are designed. ISM is far more effective than attempting to add safety measures after an activity is already planned or after a facility's basic design is established. ISM is also far more effective than an outcome or performance-based approach in which thorough consideration of safety only occurs after an inadequately planned activity results in an undesirable outcome. In a defense nuclear facility, that undesirable outcome could be a catastrophic event that cripples the facility and harms the workers and the public. It is critical to avoid the low-probability, high-consequence event that could destroy a facility or program. A performance-based outcome approach may appear successful on the surface, but underlying weakness in processes may lead to serious accidents and unwanted results.

When properly implemented at all levels, ISM results in (1) facility designs that sufficiently address hazards, (2) operating procedures that are safe and productive, and (3) feedback that drives continuous improvement in both safety and efficiency. Shortcomings in safety and efficiency in the operation of DOE and NNSA defense nuclear facilities can almost always be related to a failure to apply ISM.

The Board does not impose requirements on DOE's capital projects or other activities. The Board operates by ensuring that DOE identifies a satisfactory set of safety requirements for a project or operation, and then by evaluating DOE's application of those requirements. The safety requirements are embodied in DOE's directives and/or invoked in national consensus standards. For example, the requirement that facilities withstand seismic events and other natural phenomena hazards is a DOE requirement that is implemented in a graded fashion, including consideration of the hazard associated with the facility. The requirement to assess the probabilistic seismic hazard analysis for DOE facilities built in seismically active areas every decade is likewise a DOE requirement. Up-to-date analyses incorporate the best information available about the earthquake hazards at each site, and are vital to ensure that all DOE facilities – both existing and proposed – provide adequate protection for seismic events.

The Board's overriding priority is to protect the public, including workers. In order to provide the most efficient and effective oversight, the Board considers a set of risk factors to prioritize its oversight. These factors are:

- **Location.** Proximity to collocated workers and the offsite public;
- **Nuclear Materials.** Quantity, chemical composition (i.e., pure elements, stable compounds, reactive compounds), physical form, and radiological characteristics of material stored or handled in the facility;
- **Release Mechanisms and Energetic Events.** Mechanisms for release of materials (e.g., earthquakes, tornados, chemical reactions, fires, explosions, and other potential energy sources), nuclear criticality, highly energetic violent reactions involving nuclear explosives, or nuclear detonations;

- **Safety Control Set.** Complexity of safety controls and degree of reliance on active safety systems or administrative controls instead of passive design features;
- **Unproven or Unique Applications.** Degree of application of new or one-of-a-kind materials, processes, and technologies with limited operational experience; and
- **New Circumstances.** Changes in facility configuration, facility conditions (e.g., degradation of aging systems and structures), operations, or personnel (e.g., transition to a new operating contractor).

These risk factors are inputs to calculations performed by the Board and DOE that provide a measure of risk to the public and workers following potential releases of radiological material. More specifically, these calculations estimate doses to the public and workers resulting from natural phenomena hazards and operational accidents and are used to define the types of controls necessary to mitigate or prevent their harmful consequences.

High-Priority Nuclear Safety Issues at DOE and NNSA Defense Nuclear Facilities

I would like to highlight the following safety issues as particularly important to ensuring that the defense nuclear complex can safely accomplish its missions:

- Earthquake Hazard at Los Alamos National Laboratory;
- Early Integration of Safety in Design;
- Maintaining Adequate Safety Controls;
- Revision of DOE Standard 3009;
- Integrated Safety Management at the Activity Level;
- Hanford Waste Treatment and Immobilization Plant;
- Safety Culture;
- Conclusion of DOE's 2010 Safety and Security Reform Plan;
- Contractor Assurance Systems; and
- Longevity of High-Level Waste Storage Systems

Earthquake Hazard at Los Alamos National Laboratory

The risk posed by the Plutonium Facility (PF-4) at Los Alamos National Laboratory remains among the Board's greatest concerns. An earthquake resulting in collapse of the facility would likely result in very high radiological doses to the public in nearby towns. The Board continues to urge DOE to take meaningful, near-term action to mitigate this risk.

On October 26, 2009, the Board issued Recommendation 2009-2, *Los Alamos National Laboratory Plutonium Facility Seismic Safety*, to focus DOE and the NNSA on the need to address the danger posed by the potential for an earthquake to damage PF-4 and start a major fire in the facility. In response, NNSA took immediate actions to reduce the nuclear material at risk, combustible materials, and ignition sources. NNSA also completed analyses confirming that a large earthquake would likely damage the PF-4 structure and many of its safety systems. As a result, NNSA reinforced several structural elements, including the roof.

However, continuing review of NNSA's seismic analyses has led the Board to conclude that more needs to be done to reduce the risks at the facility. The Board issued a letter to NNSA on July 18, 2012, questioning the modeling approach that the site contractor is using in seismic analyses. In response, NNSA has begun work on an independent seismic analysis of PF-4. NNSA expects to complete this analysis in 2013.

In September 2012, the site contractor completed its own detailed analysis and identified previously unknown structural weaknesses that could result in PF-4 collapsing during an earthquake. The newly revealed weaknesses result in postulated offsite dose consequences that could significantly exceed DOE's guideline for protecting the public, despite the structural upgrades made to PF-4 in response to the Board's Recommendation 2009-2. NNSA is evaluating this new information using guidance issued by the Deputy Secretary of Energy in response to the Board's Recommendation 2010-1, *Safety Analysis Requirements for Defining Adequate Protection for the Public and the Workers*. As part of this effort, NNSA is examining the need for additional actions to strengthen the facility.

In light of the developments during 2012, the Board issued a letter to the Secretary of Energy on January 3, 2013, strongly urging DOE to take additional near-term measures to reduce the consequences of a potential earthquake-induced collapse of PF-4.

Early Integration of Safety in Design

During 2012, DOE struggled to integrate safety prior to construction of its large, complex design projects and to improve timeliness in resolving safety-related issues. For example, in an April 2, 2012, letter to NNSA, the Board expressed concern that the project team developing the Uranium Processing Facility at the Y-12 National Security Complex had not integrated safety adequately into the preliminary design. The Board identified numerous deficiencies, including that the hazard analyses failed to analyze all hazards necessary to comply with the methodology in DOE Standard 3009, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analyses*, and DOE Standard 1189, *Integration of Safety Into the Design Process*, for performing unmitigated hazard analysis. NNSA is taking corrective actions to revise the safety documentation.

In the case of the Hanford Waste Treatment and Immobilization Plant, DOE struggled to integrate safety into the design, and has not resolved the most critical open technical issues. For example, DOE's response to the Board's Recommendation 2010-2, *Pulse Jet Mixing at the Waste Treatment and Immobilization Plant*, is being delayed. On April 30, 2012, DOE informed the Board that the approach described in its implementation plan for verifying the design of vessel mixing systems was inadequate. DOE committed to revise its implementation plan to describe a workable approach by December 31, 2012. However, in the ensuing period, the Secretary of Energy undertook a more comprehensive review of the plant's design. In a letter dated November 8, 2012, the Secretary informed the Board that this review may result in further changes to DOE's approach to resolving the mixing issues. The Secretary committed to incorporate these changes into the planned revision of the Recommendation 2010-2 implementation plan in early 2013. Meanwhile, DOE is slowing the construction of two key

facilities of the treatment plant to resolve longstanding safety-related issues and reevaluate the plant's design.

Maintaining Adequate Safety Controls

Weaknesses in the development, review, approval, and implementation of safety controls at DOE defense nuclear facilities were highlighted in Recommendation 2010-1. In 2012, the Board noted several examples where DOE and NNSA placed insufficient emphasis on the use of bounding safety analyses and on following the well-established "hierarchy of controls" defined in DOE Standard 3009. This standard dictates that bounding, conservative safety analyses be employed and that engineered structures, systems, and components are to be preferred over reliance on administrative controls. Deficiencies noted by the Board in the selection and implementation of safety controls were communicated to DOE in the following letters:

- At Lawrence Livermore National Laboratory, the Board identified systemic deficiencies related to the development, review, and approval of safety control strategies for nuclear operations at both the Tritium Facility and the Plutonium Facility. In particular, the Board identified non-conservative accident analyses and inadequate federal oversight that resulted in mischaracterization of hazard scenarios and improper safety controls. The Board also found that the defined safety functions of certain systems could not be reliably implemented and that the boundaries of some safety systems were inappropriately defined. (Letter, Defense Nuclear Facilities Safety Board to National Nuclear Security Administration, August 30, 2012)
- At Los Alamos National Laboratory, the Board identified deficiencies in the safety bases and control strategies at the Plutonium Facility and the Area G waste storage and disposal facility. At the Plutonium Facility, the Board found that the accident analysis used non-conservative input parameters and methodologies that resulted in underestimating the offsite dose consequences of certain accident scenarios. As a result, it is likely that compensatory measures or more robust safety control strategies will be necessary. At

Area G, the weaknesses included non-conservative and inadequately supported analyses that resulted in an inadequate set of safety controls. (Letter, Defense Nuclear Facilities Safety Board to National Nuclear Security Administration, June 18, 2012; Letter, Defense Nuclear Facilities Safety Board to Los Alamos Site Office, November 19, 2012)

- At the Hanford Tank Farms, the Board determined that a revised control strategy approved by DOE was inadequate. The revised strategy downgraded the safety importance of ventilation systems that limit the accumulation of flammable gas and thereby help to prevent explosions in the high-level waste tanks. Consequently, the Board issued Recommendation 2012-2, *Hanford Tank Farms Flammable Gas Safety Strategy*, on September 28, 2012.

Revision of DOE Standard 3009, Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analyses

DOE issued Standard 3009 in 1994 to formalize preparation of safety analyses for its nuclear facilities. This standard established safety expectations that were applied by the contractors for the following 15 years, resulting in significant improvement to the safety posture of defense nuclear facilities. Subsequent to the issuance of subpart B, *Safety Basis Requirements*, to the Nuclear Safety Management Rule (10 CFR Part 830), DOE adopted the methodology prescribed in Standard 3009 as an acceptable approach for preparing safety bases that comply with the rule. The Board agreed that the methodology described in this standard, if implemented properly, would enhance the safety of defense nuclear facilities.

DOE approved a safety basis for one of its plutonium facilities in 2008 that was a significant departure from the approach provided in Standard 3009. In subsequent correspondence with the Board, DOE stated that the standard, though a safe harbor for 10 CFR Part 830, was nevertheless guidance rather than a prescriptive requirements document. Consequently, the Board issued Recommendation 2010-1 on October 29, 2010, in order to

strengthen DOE's regulatory framework and identify clear and unambiguous requirements for protection of the public and the workers.

One of the major actions in DOE's implementation plan for the Board's recommendation is to revise Standard 3009 so that it clearly identifies the requirements that must be met to ensure adequate protection of the public and the workers. DOE is currently working on the revision. Completing and implementing a revised standard with a clear and comprehensive set of safety requirements should improve the safety posture of DOE's defense nuclear facilities significantly.

Integrated Safety Management at the Activity Level

From 2008 to 2012, the Board's staff conducted a series of reviews at all DOE sites with defense nuclear facilities to evaluate the implementation of ISM at the activity/worker level. Effective planning of work at the activity level is based on the development of effective procedures to perform work safely and the ability of workers to follow those procedures as written. This planning is essential to accomplish DOE's mission safely and involves implementing the five core functions of ISM: defining the scope of work, analyzing the hazards, developing and implementing hazard controls, performing work within those controls, and providing feedback and continuous improvement. As the staff's reviews progressed, the Board transmitted reports to NNSA and to DOE's Office of Environmental Management detailing deficiencies and weaknesses in the implementation of ISM at the activity level.

As the final product of these reviews, the Board transmitted Technical Report DNFSB/TECH-37, *Integrated Safety Management at the Activity Level: Work Planning and Control*, to DOE in August 2012. This report concluded that DOE had not achieved sustained improvement in implementing ISM at the activity level. In the Board letter accompanying the report, the Board stated that it believes "this is in large part due to a lack of formalized requirements and guidance within DOE's directives system and the resulting lack of DOE and contractor oversight in this area." The Board is currently evaluating DOE's response.

Hanford Waste Treatment and Immobilization Plant

The Hanford Waste Treatment and Immobilization Plant (WTP), under design and construction at an estimated cost of more than \$12 billion, is essential to the safe stabilization and disposal of 53 million gallons of high-level waste stored in 177 underground tanks, some of which date back to World War II. DOE began a significant redesign of the facility in 2009, when the design was already more than two-thirds complete and construction of the WTP facilities ranged from about one-quarter to halfway done. The Board is expending a significant portion of its resources evaluating the safety of the revised design, many aspects of which are continuing to evolve. Technical issues still must be resolved to support completing the design and construction of the Pretreatment Facility and, to a lesser extent, the High-Level Waste Facility at the plant. Four key safety issues that require resolution are summarized below:

- The unproven effectiveness of the mixing and transfer systems, which are essential to the operation of WTP and are needed to prevent flammable gas from accumulating in process vessels and to prevent accumulations of solids, which could pose a nuclear criticality hazard;
- Questions regarding the new control strategy for flammable gas in process systems, which implement a novel application of quantitative risk analysis as a design tool;
- The need to demonstrate that erosion and corrosion of piping, vessels, and pulse jet mixer nozzle located in black cells is within allowable limits over the 40-year design life of the facility; and
- The uncertain ability of the Tank Farms to characterize, control, and transfer waste to WTP in compliance with the waste acceptance criteria that must be met to allow the safe and successful operation of the WTP Pretreatment Facility.

Safety Culture

The Board issued Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant*, following an investigation into the safety culture of the Waste Treatment and Immobilization Plant project at the Hanford Site. DOE submitted its implementation plan for the recommendation to the Board in December 2011 and provided an addendum describing additional actions in September 2012. DOE completed a number of actions from the implementation plan during 2012, many of which focused on working to achieve and reinforce a safety conscious work environment at Hanford and across the DOE defense nuclear complex. Notably, the Secretary of Energy conducted a town hall meeting at Hanford to directly convey his expectations to the management personnel and staff of DOE and its contractors. DOE also developed training on achieving a safety conscious work environment for the senior leadership of DOE and its contractors.

As part of the implementation plan, DOE's Office of Health, Safety and Security undertook independent assessments of the safety culture at DOE's Office of Environmental Management, the operating contractor at the Pantex Plant, as well as several major design and construction projects across the complex. These assessments were led by recognized experts in safety culture and found numerous areas needing attention. A number of important actions remain, including performing self-assessments at sites and facilities not assessed by the Office of Health, Safety and Security; integrating the findings across the complex into a coherent whole; and developing tools to sustain a robust nuclear safety culture throughout DOE's defense nuclear complex.

Conclusion of DOE's 2010 Safety and Security Reform Plan

During 2012, the Board completed its review of key safety directives that DOE had revised as part of the *DOE 2010 Safety and Security Reform Plan*. These directives included:

- DOE Order 420.1C, *Facility Safety*;

- DOE Guide 420.1-1A, *Nonreactor Nuclear Safety Design Guide for Use with DOE O 420.1C, Facility Safety*;
- DOE Standard 1066-2012, *Fire Protection*; and
- DOE Standard 1020-2012, *Natural Phenomena Hazards Analysis and Design Criteria for DOE Facilities*

The Board ensured that the final versions included effective sets of safety requirements. DOE's approval of these directives on December 4, 2012, officially concluded the Reform Plan.

The Reform Plan significantly reduced the number of directives controlled by DOE's Office of Health, Safety and Security (HSS). However, the requirements that help ensure the safety of the public and workers at defense nuclear facilities remained largely unchanged. DOE started with 107 HSS directives (73 of interest to the Board) and ended with 55 HSS directives (40 of interest to the Board). Directives that are "of interest to the Board" involve any activity or operation at DOE defense nuclear facilities that could impact nuclear safety; for example, directives may include fire protection, quality assurance, and chemical safety.

Contractor Assurance Systems

During its May 2010 public hearing on DOE's implementation of Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Operations*, the Board expressed its concerns about DOE's increasing reliance on contractor assurance systems and the corresponding reduction in the level of independent Federal oversight for safety. As part of the Board's ongoing review of safety management programs, Board members and staff continue to find problems with the effectiveness of contractor assurance systems in identifying and correcting safety issues. Board members have addressed the use and effectiveness of contractor assurance systems during site visits and hearings. The Board is aware of lessons learned from the security incident at the Y-12 National Security Complex and will closely monitor safety management programs at defense nuclear facilities for applicability of the security lessons to safety management.

Longevity of High-Level Waste Storage Systems

DOE's plan for cleanup of the high-level waste Tank Farms at the Hanford Site rests on the integrity of 28 double-shell tanks at the site. These million-gallon tanks are to be used for decades as storage space for waste retrieved from the 149 older single-shell tanks. They will serve as feed tanks for the Waste Treatment and Immobilization Plant and for other supplemental treatment facilities designed to immobilize the waste for long-term storage and disposal.

During 2012, DOE discovered that the inner shell of Tank 241-AY-102, the first double-shell tank built at Hanford, had leaked a small quantity of waste onto the floor of the outer shell. The source of the leak was not visible, but DOE believes the leak was most likely due to corrosion of the steel bottom of the inner shell. DOE researched records from the construction of Tank 241-AY-102 and found evidence of problems that may have resulted in the inner shell being more susceptible to degradation than the other double-shell tanks. Presently, it is uncertain if the leak was caused by a defective weld, stress corrosion cracking, pitting corrosion, or some other factor. The uncertainty makes it difficult to predict the susceptibility of other tanks to failure as well as the ability of the outer shell of Tank 241-AY-102 to contain the leaking waste, since that shell also experienced construction difficulties. DOE has begun an extent-of-condition evaluation of six similar tanks and is considering options for eventually transferring waste from Tank 241-AY-102 should DOE determine that such a transfer is necessary. The Board is closely monitoring this effort because of the specific hazard posed by a leak from Tank 241-AY-102 and because of the broader implications for the high-level waste cleanup program at Hanford. It is worth noting that many double-shell tanks will be well beyond their design life before they are emptied.

In February of 2013, DOE announced that single-shell tanks are continuing to leak. This situation reinforces the need to retrieve and treat the tank waste and be vigilant in maintenance and safe operations in the Hanford Tank Farms for the foreseeable future.

Changes to the Board's Enabling Statute in the FY 2013 NDAA

The National Defense Authorization Act for Fiscal Year 2013 (NDAA), as passed by Congress and signed into law by the President on January 2, 2013, made a number of meaningful amendments to the Board's enabling legislation. Several of these amendments are listed below.

Section 3202(a) of the NDAA amended section 2286(c) of the Board's enabling legislation to provide further congressional direction regarding the Board's operation. Specifically, section 3202 modified the first sentence in section 2286(c)(2) to read "*In accordance with paragraph (5), the Chairman...*," and added the following paragraph to the end of section 2286(c):

- (5) Each member of the Board, including the Chairman and Vice Chairman, shall—
 - (A) have equal responsibility and authority in establishing decisions and determining actions of the Board;
 - (B) have full access to all information relating to the performance of the Board's functions, powers, and mission; and
 - (C) have one vote.

This amendment provides helpful clarification of the rights and responsibilities of the collective Board, which were not previously codified.

Section 3202(b) of the NDAA amended section 2286a of the Board's enabling act to add the following mission statement:

- (a) **Mission.** – The mission of the Board shall be to provide independent analysis, advice, and recommendations to the Secretary of Energy to inform the Secretary, in the role of the Secretary as operator and regulator of the defense nuclear facilities of the Department of Energy, in providing adequate protection of public health and safety at such defense nuclear facilities.

This amendment aligns with the Board's historical and current interpretation of its statutory mandate. The new section 2286a(a) codifies that the mission of the Board is to provide

independent analysis, advice, and recommendations to the Secretary of Energy to ensure that public health and safety are adequately protected.

Section 3202(b) of the NDAA also amended section 2286(b)(5) of the Board’s enabling act to read:

“In making its recommendations, the Board shall consider, *and specifically assess risk (whenever sufficient data exists)*, the technical and economic feasibility of implementing the recommended measures.”

The Board is developing a policy statement to ensure that it properly performs the “risk assessment” requirement when issuing a recommendation to the Secretary of Energy.

Section 3202(c) modified section 2286d of the Board’s enabling act to alter the process by which the Board submits recommendations to the Secretary of Energy. Specifically, section 3202(c) added the following new subsection (a) to section 2286d:

- (a) **Submission of Recommendations.**—(1) Subject to subsections (h) and (i), not later than 30 days before the date on which the Board transmits a recommendation to the Secretary of Energy under section 312, the Board shall transmit to the Secretary in writing a *draft* of such recommendation *and any related findings, supporting data, and analysis* to ensure the Secretary is adequately informed of a formal recommendation and to provide the Secretary an opportunity to provide input to the Board before such recommendation is finalized.
- (2) The Secretary may provide to the Board comments on a draft recommendation transmitted by the Board under paragraph (1) by not later than 30 days after the date on which the Secretary receives the draft recommendation. The Board may grant, upon request by the Secretary, *additional time* for the Secretary to transmit comments to the Board.
- (3) After the period of time in which the Secretary may provide comments under paragraph (2) elapses, the Board may transmit a final recommendation to the Secretary.

The Board is presently developing several directives and policy statements on the subject of “draft recommendations.” The policy statement will articulate: (1) the Board’s procedure for creating, voting upon, and transmitting a “draft recommendation” to the Secretary; (2) the Board’s extension of time for all Secretarial comments; (3) the Board’s expectation regarding the form of Secretarial comments; (4) how those comments will be collected and stored; and (5) the Board’s procedure for transmitting a “final recommendation” to the Secretary.

Section 3202(f) added a section to the Board’s enabling legislation requiring the Board to obtain inspector general services.

- (a) **In General.**—Not later than October 1, 2013, the Board shall enter into an agreement with an agency of the Federal Government to procure the services of the Inspector General of such agency for the Board, in accordance with the Inspector General Act of 1978 (5 U.S.C. App.). Such Inspector General shall have expertise relating to the mission of the Board.
- (b) **Budget.**—In the budget materials submitted to the President by the Board in connection with the submission to Congress, pursuant to section 1105 of title 31, United States Code, of the budget for each fiscal year, the Board shall ensure that a separate, dedicated procurement line item is designated for the services of an Inspector General under subsection (a).

The Board is actively working to comply with this amendment.

Conclusion

The Board is confident that DOE has put in place a safety framework that facilitates the safe operation of its defense nuclear facilities. This safety framework is based on Integrated Safety Management, which is a process-based approach in which safety considerations are built into activities as they are planned and into facilities as they are designed. When properly implemented at all levels, Integrated Safety Management results in facility designs that efficiently address hazards, operating procedures that are safe and productive, and feedback that drives continuous improvement in both safety and efficiency.

The Board believes DOE has demonstrated a good safety record. However, we cannot ignore the current and emerging challenges that will define the future of DOE's defense nuclear facilities, the need for federal stewardship of this enterprise, and the federal commitment to protect the health and safety of the workers and the public. Today's challenges of aged infrastructure, design and construction of new and replacement facilities, and the undertaking of a wide variety of new activities in defense nuclear facilities coupled with ongoing mission support activities require continued vigilance in safety oversight to assure public and worker protection.

I anticipate that the issues I have described are familiar to DOE, NNSA, and our congressional oversight committees. They have been previously identified by the Board in public documents, such as letters to DOE and NNSA, reports to Congress that summarize unresolved safety issues concerning design and construction of defense nuclear facilities, reports to Congress on aging facilities, and the Board's Annual Report to Congress. These reports and documents are available for review on the Board's public web site.

Dr. Peter S. Winokur, Ph.D.

Chairman of the Defense Nuclear Facilities Safety Board

Dr. Peter S. Winokur of Maryland has been appointed a Member of the Defense Nuclear Facilities Safety Board for a term expiring October 18, 2014. Dr. Winokur has more than 40 years of experience as a scientist and engineer in the field of radiation effects science, technology, and hardness assurance in support of military and space systems. A Fellow of the Institute of Electrical and Electronic Engineers and the American Physical Society, he was selected as one of the most highly cited researchers in Engineering by the Institute for Scientific Information, which lists the 250 most highly cited researchers in the world in given scientific fields.



Resume

2010 – Present	Chairman, Defense Nuclear Facilities Safety Board
2006 – 2010	Member, Defense Nuclear Facilities Safety Board
2005 – 2006	Senior Policy Analyst, Congressional Affairs, National Nuclear Security Administration. Liaison to Congress on a broad range of policy, legislative, and budget issues dealing with nuclear weapons, nuclear nonproliferation, energy, and research and development.
2001 – 2004	IEEE Congressional Fellow, Office of Senator Harry Reid. As Energy and Transportation Advisor, crafted energy policy that included tax legislation for renewable energy, resulting in billions in economic development and the creation of tens of thousands of jobs.
1989 – 2000	Manager, Radiation Technology and Assurance Department, Sandia National Laboratories. Led programs focused on radiation-effects science and technology, hardness assurance, and development of radiation-hardened microelectronics for military and space applications.
1987 – 1989	Supervisor, Radiation Technology and Materials Division, Sandia National Laboratories. Radiation physics, materials, and modeling in support of advanced technologies with severe reliability and radiation hardness requirements. Initiated SEMATECH programs dealing with equipment and processes for improved yield and reliability.
1983 – 1987	Member Technical Staff, Advanced Microelectronics Development Division, Sandia National Laboratories, Albuquerque, NM.
1979 – 1983	Senior Staff Physicist, Radiation Effects Branch Harry Diamond Laboratories, Adelphi, MD.
1969 – 1979	Physicist, Radiation Effects Branch Harry Diamond Laboratories, Washington, DC.
1968 – 1969	Scientist, Optical Character Reader Division Control Data Corporation, Rockville, MD.

Dr. Winokur has won numerous awards including the 2000 IEEE Millennium Medal, IEEE Nuclear & Plasma Sciences Merit and Shea Awards, R&D 100 Award, Industry Week's Top 25 Technologies of Year, Discover Award, Cooper Union's Gano Dunn Award, and prize-winning papers. He is the author of 140 publications in the open referred literature, including more than 30 invited papers, book chapters, and short courses.

Education

Ph.D., University of Maryland, 1974: Physics
M.S., University of Maryland, 1971: Physics
B.S., The Cooper Union, 1968: Physics

**WITNESS RESPONSES TO QUESTIONS ASKED DURING
THE HEARING**

MAY 9, 2013

RESPONSE TO QUESTION SUBMITTED BY MR. FRANKS

Ms. MILLER. a) The Infrastructure Security and Energy Restoration (ISER) program in the Department of Energy's Office of Electricity Delivery and Energy Reliability leads national efforts, in cooperation with public and private sector stakeholders, to enhance the reliability, survivability, and resiliency of the U.S. energy infrastructure (electricity, petroleum, natural gas), while also improving national energy security by addressing energy infrastructure interdependencies based on risk and consequences.

ISER's primary responsibility is to help secure the U.S. energy infrastructure against all hazards, whether natural or man-made, physical or cyber. It also develops tools and identifies advanced technology for deployment to enhance the ability of the energy sector to be resilient. In addition, ISER partners with state and local governments, responding to and recovering from energy disruptions, to ensure seamless collaboration at all levels. These activities place ISER in a unique role to help define the technology needs of the energy sector. ISER uses its expertise and partnerships to identify potential technical solutions and suppliers of technology, evaluate risk and cost, and drive innovation by facilitating the seamless integration of advanced technologies developed by OE's research and development programs into energy infrastructure. ISER contributes to the Department's and the energy sector's long-term responsibilities to secure the U.S. energy supply by addressing topics like High Impact Low Frequency events such as a geomagnetic disturbance (GMD) storms. ISER also mitigates risks posed to global energy infrastructure by assisting key energy-producing partners in securing their energy infrastructure, in coordination with the Department of State and on a cost-reimbursable basis.

b) The ISER program has performed these functions within an approximately \$6 million appropriation. However, as Superstorm Sandy highlighted, the Department is currently not fully equipped to respond to new challenges caused by stronger, more destructive storms; more sophisticated cyber attacks; potential accidents as a result of aging infrastructure or human error; and potential high-impact low frequency threats such as geomagnetic disturbance storms or a catastrophic earthquake. The additional \$10 million for the new Operational Energy and Resilience (OER) initiative in FY 2014 will lay the foundation to develop an enhanced capability that will enable the Department to better protect against and mitigate threats and hazards, with the ultimate goal of quicker recovery by industry and the communities they serve through. OER, in conjunction with continuing ISER activities, will enable the Department to meet these challenges.

c) The FY 2014 request for the OER supports the modification and expansion of the Energy Resilience and Operations Center (E-ROC) within the Department of Energy's Washington, D.C. headquarters. E-ROC will be a steady-state operations center, where the Department monitors, receives and analyzes real-time threat and energy sector status and coordinates and shares this information with all Energy Sector stakeholders. During emergencies, it will serve as the collaboration hub between the Department of Energy, other Federal Agencies and Energy Sector partners, including critical infrastructure owners and operators, and will be responsible for status and information sharing between DOE and other emergency operation centers (Federal and State). A state-of-the-art "knowledge wall" (screen) in the E-ROC will be capable of receiving multiple and disparate near real-time data feeds, simultaneously visualizing and overlaying over the affected area, so that decision makers can appropriately respond.

The OER subprogram will place DOE Regional Energy Advisors in 10 regional offices (aligned with FEMA's regions) to implement regionally tailored, energy resilience approaches for facility owners and States (including territories and tribal) to mitigate, prepare, prevent, respond and recover from major disasters and events that impact energy infrastructure. They will also be able to support response and restoration efforts during emergencies.

d) While the increase for OER requested in FY 2014 does not directly fund GMD related work, the request continues efforts to address the threat posed to the electricity infrastructure by geomagnetic disturbances (GMD). For example, in FY 2013, ISER completed a study and developed a strategy that led to the deployment of ad-

ditional geomagnetically-induced sensors that provide data that enables utilities to better mitigate impacts of GMD events. As a result, the number of sensors installed has increased from 10 sensors in one interconnect to 27 sensors (5 funded by DOE and the remainder by industry) that cover all three interconnects. [See page 16.]

RESPONSES TO QUESTIONS SUBMITTED BY MR. LAMBORN

Ms. MILLER. NNSA, with assistance from the Department of Defense and our contractors, envisions achieving efficiencies from management and workforce changes consistent with the President's FY 2014 Budget request and FY 2014 FYNRP. Furthermore, NNSA is undertaking this effort in coordination with other efficiency efforts examining requirements and weapons enterprise capacity. NNSA is approaching achieving the efficiencies from a long-term perspective—the goal is to implement changes that are credible, measurable and achievable to the nuclear security complex for both FY 2014 and the outyears. NNSA is now taking a number of actions to drive toward solutions:

- In June, NNSA established the NNSA Operations Council comprised of the Chief Operating Officers (COOs) from the NNSA sites and co-chaired by the NNSA Associate Principal Deputy Administrator and a NNSA site COO. One of the primary goals of the NNSA Operations Council will be to bring together senior leaders from NNSA to drive operational efficiencies. Working through the Operations Council, NNSA will reduce the “cost of doing business” with minimal impact on NNSA work scope. NNSA believes that working with our M&O partners will be the best way to identify where savings can be realized.
- In early Fall, NNSA will complete a contractor workforce analysis in close coordination with the Labs and Plants to identify workforce prioritizations and whether contractor staffing reallocations would impact project scope. As part of the efficiencies identified in the President's Budget request, NNSA committed to “workforce prioritization” efficiencies targeted at achieving Life Extension Program (LEP) performance targets by reallocating existing staff on non-LEP work to LEP work. This efficiencies target arose from a concern about the ability of NNSA sites to staff up to do all the required work. The results of the study now under way should provide insights into where efficiencies may be found.
- Finally, NNSA and the Department of Defense are working very closely together to identify both management and workforce efficiencies. This joint effort has been helpful in identifying areas to explore for savings. There is a risk that if NNSA is unable to realize sufficient savings or to prioritize requirements as targeted in the President's Budget, there could be impacts, such as schedule delays, on planned activities. [See page 34.]

Dr. HARVEY. We have verified that terms of reference for the Strategic Choices Management Review do not exist. [See page 33.]

RESPONSE TO QUESTION SUBMITTED BY DR. FLEMING

General KEHLER. USSTRATCOM works with our Service Components to continually assess infrastructure security, capabilities, and capacity in support of all of my Unified Command Plan (UCP) mission requirements.

Air Force Global Strike Command (AFGSC) is developing a proposed schedule and cost estimates for recapitalizing nuclear weapons storage and maintenance facilities at FE Warren, Malmstrom, Minot, Whiteman, and Barksdale Air Force Bases that have degraded due to age and no longer comply with nuclear surety requirements. Information will be made available as it becomes available. [See page 22.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

MAY 9, 2013

QUESTIONS SUBMITTED BY MR. ROGERS

Mr. ROGERS. 1) Secretary Creendon, we recently saw senior lawmakers in South Korea calling for South Korea to consider developing its own nuclear weapons. A recent poll shows that two-thirds of the South Korean public support such a move.

a) What actions should we be taking to strengthen our nuclear assurances to South Korea? And to Japan?

b) The recent B-2 flights to South Korea seem to have made a profound impact on the South Korean government and public—a clear demonstration of U.S. assurances and resolve in the face of nuclear threats. How should we factor this into our discussion of the long-range strike bomber that is now under development? Does this demonstrate the enduring value of long-range nuclear bombers?

c) What plans/options exist to relocate B61 gravity bombs and dual-capable aircraft in either country should circumstances warrant that action?

Secretary CREEDON. The credibility of U.S. extended deterrence is demonstrated and strengthened through a variety of actions. The first is transparency: we have substantially increased dialogue with both South Korea and Japan regarding extended deterrence, and regularly exchange views concerning strategic issues in the region. Our Extended Deterrence Dialogue with Japan and Extended Deterrence Policy Committee meetings with South Korea keep our allies informed about changes to our nuclear policy and posture, avoiding misperceptions. A second way is demonstrating resolve in the face of challenges. Examples include the recent bomber missions to the Korean Peninsula, close cooperation with Japan on missile defense, and a variety of joint exercises in the region. Furthermore, the President's recent nuclear employment guidance reaffirmed our commitment to our allies and partners that the United States will maintain the capability to forward-deploy nuclear weapons with both heavy bombers and Dual Capable Aircraft (DCA). Finally, we demonstrate our commitment to extended deterrence by investing in modernization of our nuclear forces, including the weapons, platforms, and infrastructure. It is essential that we fully support the President's plans to replace aging elements of our triad, to ensure that our extended deterrence capabilities remain safe, secure, and effective.

In accordance with the President's guidance, DOD retains the capability to forward-deploy heavy bombers and DCA with weapons.

Mr. ROGERS. 2) Secretary Creendon, the Deputy Secretary of Defense has indicated that, under sequestration, the Department will prioritize protecting: a) current operations in Afghanistan; and b) nuclear deterrence operations. Please describe why this second priority was selected.

c) If sequestration continues into FY14, will nuclear deterrence operations still be protected? How would nuclear force modernization efforts be affected by continuing sequestration into FY14?

Secretary CREEDON. There is widespread agreement on the importance of the nuclear deterrence mission, which protects the United States from nuclear attack and coercion from adversaries; contributes to strategic stability with Russia and China; and assures U.S. allies and partners in Europe and Asia that might otherwise be vulnerable to nuclear threats or prone to consider developing their own nuclear capabilities. The Administration recognizes just how important it is to refurbish and upgrade the stockpile so that we can continue to provide a safe, secure, and effective deterrent in these uncertain times.

Sequestration is already having an undesired effect on the modernization of U.S. strategic capabilities by delaying slightly the completion of the B61-12 Life Extension Program (LEP). If sequestration continues, we face the very real risk of doing serious damage to the U.S. nuclear stockpile, requiring us to delay or extend further our refurbishment efforts for weapons that are already serving well beyond their expected service lives. This would create unacceptable risk. That is why it is imperative that a solution be found to this situation before serious damage is done.

Mr. ROGERS. 3) Secretary Creendon, we understand that you are the U.S. representative to NATO's High Level Group, which discusses nuclear weapons aspects of NATO defense posture. In the past several years, NATO has made a series of decisions and declarations regarding its nuclear posture. Please describe these decisions and NATO's nuclear policy going forward.

a. Do NATO countries contribute to the cost of the B61 life extension program of the B61 and the cost to modify the Air Force tail kit? Would it be appropriate for NATO to pay for a portion of the cost of the B61 LEP?

b. What is NATO's policy regarding future changes to its nuclear posture, particularly regarding decisions to rebase or change its posture toward forward-deployed B61s?

Secretary CREEDON. Just to be clear, I am the chair of the HLG and DASD Elaine Bunn is the U.S. representative. The decision to modernize the B61 bomb is a U.S. decision, and the costs for the updated weapon are to be borne by the United States. This allows the United States to maintain control of the scope of the life extension program (LEP) and meet our nonproliferation commitments. It is also important to note that the B61 LEP is required independent of NATO in order to meet U.S. strategic requirements and to ensure the long-term viability of the B-2A stealth bomber.

It would not be appropriate to have NATO fund a portion of the B61 LEP. However, NATO members provide considerable funds to the NATO nuclear mission, including mission-related facilities, services, supplies, and other logistical support for our units at each NATO storage site; and NATO has funded substantial security enhancements and upgrades, and infrastructure upgrades at the storage sites.

In May of 2012, the NATO Alliance released its Deterrence and Defense Posture Review (DDPR), which states: "As long as nuclear weapons exist, NATO will remain a nuclear alliance." Additionally, the Alliance stated that NATO is "prepared to consider further reducing its requirement for nonstrategic nuclear weapons assigned to the Alliance in the context of reciprocal steps by Russia."

Mr. ROGERS. 4) Secretary Creendon, do you believe our extended deterrent assurances to allies lose credibility if we continue to slip deadlines for modernizing our stockpile, forces, and infrastructure?

Secretary CREEDON. I do not see an erosion of confidence among our allies with respect to the U.S. commitment to our nuclear deterrent. We have extensive consultations with key allies on a regular basis regarding the United States' extended deterrent and our plans for modernization.

Modernization of our forces, stockpile, and infrastructure is necessary and becomes even more important as the Nation considers potential further reductions. Our allies and partners watch the U.S. budget process and can observe that the President has significantly increased the funding requested to complete modernization of the stockpile and its accompanying infrastructure. This strengthens the credibility of our commitment to modernize and to provide an extended deterrent to our allies and partners. Our allies and partners do, however, express concerns regarding the effect of continued uncertainty stemming from sequestration and the recent inability to appropriate funds in a timely and predictable manner. As we continue to adjust programs in response to budget challenges, each possible slip in schedule or combinations of slips must be evaluated and the possible implications identified when considering a program adjustments.

Mr. ROGERS. 5) Secretary Creendon, by law, Congress is supposed to receive the annual Report on Stockpile Assessments, which includes the assessments of stockpile health conducted by the laboratory directors and by the commander of U.S. Strategic Command, by March 15. Like last year, Congress did not receive this report until months after the statutory deadline. Why is this report always late? Will the Administration deliver the report in 2014 by the March 15 deadline?

Secretary CREEDON. DOD recognizes and understands concerns about late reports. The Nuclear Weapons Council (NWC) always strives to submit this report in a timely manner and will continue to do so in order to meet the March 1, 2014, deadline for submission to the President and the March 15, 2014, deadline for submission to Congress. The Report on Stockpile Assessments is the result of a rigorous, nearly year-long process by three national laboratories to certify that the stockpile remains safe, secure, and effective. Additionally, it requires an assessment by the Commander, U.S. Strategic Command, of the laboratory certification results. Every year, these in-depth assessments culminate in Secretary-level review in both the Department of Defense and Department of Energy.

This review and discussion of the most serious challenges facing the U.S. nuclear deterrent warrant the time and attention to understand and address interagency concerns, particularly given that the U.S. nuclear enterprise is aging (e.g., the youngest U.S. nuclear warhead is 27 years old), and that it lacks an underground testing capability. Further contributing to these challenges is a fiscally constrained environment that requires extensive examination of priorities and often difficult choices as we highlight issues in the annual assessments for the President. Although we make every effort to address these issues in a timely manner, we often experience delays while we work through the process. Nonetheless, our goal is to respond in a timely fashion with a report that provides the best assessment possible.

Mr. ROGERS. 6) General Kehler, do you believe our extended deterrent assurances to allies lose credibility if we continue to slip deadlines for modernizing our stockpile, forces, and infrastructure?

General KEHLER. Modernization of our forces, stockpile and infrastructure is necessary and becomes even more important as the Nation considers potential further reductions. I believe our allies take into account our commitment to sustaining a safe, secure, and effective nuclear deterrent when they evaluate the value and credibility of our extended deterrence commitments to them. The implications of “slipped” deadlines fully depend on the programs that are slipped and the overall impact on U.S. deterrent capabilities.

Mr. ROGERS. 7) Ms. Miller, what steps is NNSA taking to realize the “efficiencies” described in the FY14 budget request justification documents? What are the impacts to the B61 and W76 LEPs, in particular, if these efficiencies are not achieved?

Ms. MILLER. NNSA, with assistance from the Department of Defense and our contractors, envisions achieving efficiencies from management and workforce changes consistent with the President’s FY 2014 Budget request and FY 2014 FYNSP. Furthermore, NNSA is undertaking this effort in coordination with other efficiency efforts examining requirements and weapons enterprise capacity. NNSA is approaching achieving the efficiencies from a long-term perspective—the goal is to implement changes that are credible, measurable and achievable to the nuclear security complex for both FY 2014 and the outyears.

NNSA is now taking a number of actions to drive toward solutions:

- In June, NNSA established the NNSA Operations Council comprised of the Chief Operating Officers (COOs) from the NNSA sites and co-chaired by the NNSA Associate Principal Deputy Administrator and a NNSA site COO. One of the primary goals of the NNSA Operations Council will be to bring together senior leaders from NNSA to drive operational efficiencies. Working through the Operations Council, NNSA will strive to reduce the “cost of doing business” with minimal impact on NNSA work scope. NNSA believes that working with our M&O partners will be the best way to identify where savings can be realized.
- As part of the efficiencies identified in the President’s Budget request, NNSA committed to seek “workforce prioritization” efficiencies targeted at achieving Life Extension Program (LEP) performance targets by reallocating existing staff on non-LEP work to LEP work. This efficiencies target arose from a concern raised by some about the ability of NNSA sites to staff up to do all the required work. A recently completed independent study evaluated whether the NNSA sites could staff up to support a higher level of LEP activity without reducing the quality standards for new employees. In early Fall, NNSA, in close coordination with the Labs and Plants, will complete a contractor workforce analysis to identify workforce prioritizations and whether contractor staffing reallocations would impact project scope. The results of the study should provide insights into where efficiencies may be found or the impacts due to the realignment of existing weapons activity staff.
- Finally, NNSA and the Department of Defense are working very closely together to identify both management and workforce efficiencies. This joint effort has been helpful in identifying areas to explore for savings.
- There is a risk that if NNSA is unable to realize sufficient savings or to prioritize requirements as targeted in the President’s Budget, there could be impacts, such as schedule delays, on planned activities. The shares of management efficiencies provisionally apportioned to the W76 and B61 LEPs for FY 2014 were \$2.5 M and \$5.7 M respectively. The shares of workforce prioritization savings provisionally apportioned to the W76 and B61 LEPs for FY 2014 were \$7.9 M and \$17.9 M respectively. At these levels of cuts you could expect completion of production for the W76 LEP and achievement of FPU for

the B61 LEP to be delayed. If these two efforts were protected from any cuts arising from a failure to achieve the targeted savings, the impacts would be to scope elsewhere in the program.

Mr. ROGERS. 8) Ms. Miller, you commented during the hearing on the B61 LEP, and why the so-called “triple-alt” option was not acceptable from a cost, requirements, and technical standpoint. Would you please elaborate? What about the so-called “1-E” option—why was it not acceptable from a cost, requirements, and technical standpoint? If the B61 LEP were to pursue the triple-alt or 1-E, what would be the cost and schedule impacts?

Ms. MILLER. The current B61–12 LEP option, Option 3B, is the lowest cost option that meets all DOD requirements. Neither the Triple Alt nor the 1E option addresses all aging concerns on the B61 and would each require a second life extension with a first production unit (FPU) before 2028. Additionally, until the second life extension necessitated by these options was complete, there would continue to be risk of a capability gap to the U.S. extended deterrence mission. The scope of the second LEP would include other nonnuclear electronics, such as firing, arming and safety, thermal batteries, and use control components that must be replaced due to aging. In addition, nuclear components contemplated in the Triple Alt or 1E option would need to be refurbished to improve safety and ensure an additional 20-year service life. All system qualification and flight testing conducted to certify the Triple Alt or 1E option would need to be repeated in the second life extension. Another important consideration is that these options will not consolidate modifications, not allow a decrease in bomb quantities and not put us on a path to retire the B83. Pursuit of either of these options would greatly increase sustainment costs and require a second movement of B61 bombs for the second LEP, which in turn would increase DOE transportation risk and costs, as well as DOD costs.

Mr. ROGERS. 9) Ms. Miller, we have heard a lot of complaints that NNSA and DOD have not done any analysis of alternatives for the B61 LEP. Would you please describe, in detail, the process that was used to analyze alternatives for the B61 LEP? Also, please describe the options that were considered and why they were rejected (or in the case of Option 3B, selected). In general, how do NNSA and DOD consider alternatives in the 6.X warhead life extension process?

Ms. MILLER. As discussed in the B61–12 Life Extension Program Interim Report on Commencement of Phase 6.3 Activities, July 2012, NNSA and DOD jointly assessed life cycle costs and benefits associated with life extension options during the Phase 6.2/2A Study. This assessment was done on seven options as part of Phase 6.2A, ranging from a full scope LEP with enhanced surety technologies to replacing only three aging components [Triple Alteration (Alt)]. After reviewing life cycle costs for each of the seven options, the Nuclear Weapons Council (NWC) selected Option 3B as the most cost effective option that met the minimum DOD military requirements. The option maximizes the reuse of nuclear and nonnuclear components while still meeting military requirements for service life extension and consolidation of multiple versions of the B61 into the B61–12. The option forgoes the newest surety technologies and instead improves security and safety of the bombs using somewhat older, but proven, technologies. The option includes mod consolidation using a USAF-provided tail kit assembly. Without mod consolidation, NNSA would be required to conduct two separate life extension programs with different scopes to address strategic and extended deterrence requirements. Additionally, mod consolidation will allow for reduced DOD maintenance and logistics activities and enable NNSA to maintain a more focused surveillance and assessment program for the single bomb variant than would be necessary if it were maintaining certification for two bomb variants. Although two of the other seven options had an initial lower cost, their lifecycle cost was higher as a result of not addressing all aging concerns. These two options would have necessitated another LEP to address the remaining concerns.

Mr. ROGERS. 10) Administrator Miller, if we have a continuing resolution going into FY14, will you recommend to the President that he seek an “anomaly” for NNSA—or any individual NNSA programs?

Ms. MILLER. Later this month, NNSA anticipates that the Office of Management and Budget (OMB) will be issuing additional guidance to Agencies to submit continuing resolution (CR) anomaly requests to OMB for different types of CR scenarios. At that time, NNSA will recommend some anomalies to OMB for OMB’s consideration to transmit to Congress.

Mr. ROGERS. 11) Administrator Miller, would you consider the governance/management pilot program initiated at the Kansas City Plant in 2006/2007 to be successful? Is it still in place? Approximately how much money has been saved as a result of the program?

Ms. MILLER. The following is from the April 2008 Lessons Learned Report, Implementation of the Kansas City Site Office Oversight Plan at the Kansas City Plant:

In April 2006, the Kansas City Site Office (KCSO) was directed by the Administrator of the National Nuclear Security Administration (NNSA) to develop a plan "to create a dramatic shift in oversight" and implement the results by October 2006. The KCSO implemented the required plan, which was approved in January 2007. The Oversight Plan, along with the Kansas City Responsive Infrastructure, Manufacturing and Sourcing (KCRIMS) Project, are expected to enable Honeywell Federal Manufacturing & Technologies, LLC (FM&T) to significantly reduce operating costs, leverage commercial production, and provide a more responsive facility for nonnuclear production.

In 2008, this initiative was validated by several independent assessments, which all concluded that it had been successful for Kansas City Plant. A third party was contracted to perform an analysis of the benefits of the Oversight Plan to contractor operations. The analysis concluded that the oversight plan was fully implemented, significant direct and indirect cost savings had been achieved, and no significant detrimental impacts were identified. Cost reductions for Honeywell FM&T resulted from increased use of parent corporation systems, reduced support to KCSO oversight, adjustment of the contract incentive fee structure, elimination of DOE Orders and Directives, and the development of a private enterprise like environment where cost control and reduction are important elements in decisions involving workforce size. Continued cost reductions for both KCSO and Honeywell FM&T resulted from those same Oversight Plan related drivers. The KCSO component of cost reduction was estimated to be about \$702K. For the contractor, cost reductions were validated at \$13M for FY07 and estimated at \$23M per year for FY08–13. By the end of FY 2014, Kansas City Plant will have completed a major transformation of operating procedures and facilities that save over \$100 Million per year in operating costs.

Mr. ROGERS. 12) Dr. Harvey, would you please describe, in detail, the process that was used to analyze alternatives for the B61 LEP? Also, please describe the options that were considered and why they were rejected (or in the case of Option 3B, selected). In general, how do NNSA and DOD consider alternatives in the 6.X warhead life extension process?

Dr. HARVEY. The Nuclear Weapons Council (NWC) decision to approve Option 3B for the B61–12 Life Extension Program was informed by analysis from the B61–12 Phase 6.2/6.2A, Feasibility Study and Option Down-select/Design Definition and Cost Study. During Phase 6.2, the DOD and National Nuclear Security Administration (NNSA) jointly evaluated options to meet military requirements, address component end-of-life/weapon performance drivers and where possible, incorporate improvements in safety and security. Initially, the analysis focused on four design options (Options 2A–2D) that all included a full nuclear and nonnuclear life extension coupled with a DOD acquisition program for a tail kit assembly to maintain weapon effectiveness. These options differed in the level of enhanced surety they provided to the DOD. Due to the high costs associated with Options 2A–2D, as well as the risks associated with their potential implementation, the NWC requested additional alternatives be assessed. These additional alternatives included a) a minimum refurbishment option that only replaced three components (radar, neutron generator and power supply) with documented performance/aging issues (commonly known as the "Triple Alt"), b) a minimum, credible nonnuclear component refurbishment program (Option 1E), and c) a minimum nuclear and nonnuclear life extension program to meet DOD requirements (Option 3B). Although the Triple Alt met immediate known aging concerns at a reduced estimated cost, it was considered a "stop gap" measure since the B61 would still require a subsequent life extension program in the mid-2020s. Likewise, even though Option 1E's estimated costs were also significantly less than Options 2A–2D, it increased the risk associated with component reuse, it did not address nuclear refurbishment and it would require a subsequent refurbishment program to sustain a long-term B61 capability. Analysis indicated that both the Triple Alt and Option 1E would ultimately be more expensive than Option 3B due to successive multiple refurbishment actions required to sustain the B61. Based on this analysis, the NWC selected Option 3B because it offered a minimum program to address DOD requirements with a cost-effective, balanced approach to capability, technology risk, and warfighter needs. This option maximized component reuse and the use of proven technologies to manage cost and schedule risk. Finally, Option 3B will enable the United States to reduce its current nuclear stockpile through consolidation of four B61 variants into one B61–12.

In general, the process used to down-select the B61-12 Option 3B is used by NNSA and DOD to assess LEP alternatives within the Phase 6.X process. Typically, the Weapon Design and Cost Report (WDCR), the NNSA product from Phase 6.2A, includes all costed design options. The DOD and NNSA, through a weapon system Project Officers Group, present these options with a recommended path forward to the NWC who in turn, authorizes a warhead LEP.

Mr. ROGERS. 13) Dr. Harvey, when does our current force of Minuteman III ICBMs start aging out? What life extension programs are currently under way for the ICBMs?

a. What assessments or surveillance are we doing related to aging in the ICBM force?

b. What are our plans or programs to replace or extend the life of the Minuteman III ICBM force into the 2030s? When must the decision be made on a replacement program?

Dr. HARVEY. The Air Force remains committed to modernizing and sustaining the Minuteman III (MM III) through 2030 while evaluating a follow-on Ground Based Strategic Deterrent (GBSD) capability. Flight tests and surveillance efforts continue for key MM III subsystems, including Solid Rocket Motors (SRM), Guidance and Re-entry Vehicles, to provide more accurate estimates for component age-out and system end-of-life timelines. MM III SRM, guidance and fuze replacements are expected to be needed prior to 2030. The ICBM Demonstration Validation program is maturing technologies for insertion into future SRM and guidance programs. The ICBM Fuze Modernization program is under way and will provide replacement fuzes starting in 2020. All of these efforts will be closely coordinated and leveraged with efforts to modernize the MM III through 2030. A GBSD Analysis of Alternatives study examining options and required capabilities for a follow-on ICBM system is scheduled to begin in August 2013 and a new ICBM development program could begin this decade.

QUESTIONS SUBMITTED BY MR. COOPER

Mr. COOPER. 14) Has the Administration considered potentially more cost-effective alternatives to provide strong and reliable extended deterrence to NATO countries, that might be discussed with the Europeans? Why, why not?

Secretary CREEDON. The United States participated actively in the NATO Deterrence and Defence Posture Review (DDPR) in 2012. Much like the U.S. Nuclear Posture Review, this critical review looked at different options before making final recommendations in the published DDPR.

In the DDPR, the Alliance decided that:

Nuclear weapons are a core component of NATO's overall capabilities for deterrence and defence alongside conventional and missile defence forces . . . As long as nuclear weapons exist, NATO will remain a nuclear alliance. The supreme guarantee of the security of the Allies is provided by the strategic nuclear forces of the Alliance, particularly those of the United States; the independent strategic nuclear forces of the United Kingdom and France, which have a deterrent role of their own, contribute to the overall deterrence and security of the Allies.

Consistent with NATO's commitment to remain a nuclear alliance for as long as nuclear weapons exist, Allies concur that the North Atlantic Council will direct that the appropriate committees develop concepts for how to ensure the broadest possible participation of Allies concerned (i.e., all members of the Nuclear Planning Group) in their nuclear sharing arrangements, including if NATO were to decide to reduce its reliance on nonstrategic nuclear weapons based in Europe.

Mr. COOPER. 15) Given that the United States plans to spend between \$9.6 billion \$11.7 billion for extending the life of the B61 and a new Air Force tail kit, how much do NATO countries contribute to retaining forward-deployed B61s in Europe?

Secretary CREEDON. Recent NATO contributions toward forward-deployed B61 warheads in Europe include funding for security enhancements and upgrades, as well as infrastructure upgrades (investment) at European weapon storage sites provided through the NATO Security Investment Program (NSIP). There have been four NATO weapons storage-related upgrades (Capability Package upgrades) since the original NATO Capability Package was approved in 2000:

Project Total (M)¹

Initial WS3 Installation	approx. \$215M USD
Basic Capability Package (Jul 2000)	12.8M EUR
Addendum 1 (Feb 2005)	17.9M EUR
Addendum 2 (Apr 2006)	13.0M EUR
Addendum 3 (Mar 2009)	13.0M EUR
Addendum 4 (Aug 2011)	108M EUR

Additionally, bilateral agreements require the host-nation to provide “mission-related facilities, services, supplies and other logistical support” for our units at each of the six sites. These may generally be scoped down to facilities and utilities, but the type and level of services, as well as funding for services provided, vary at each location.

Mr. COOPER. 16) What is the impact of delayed reprogramming and NDAA FY13 provisions withholding funds for interim Pu [plutonium] strategy?

Secretary CREEDON. Delayed reprogramming and National Defense Authorization Act for Fiscal Year (FY) 2013 provisions are affecting near-term, critical pit production and certification. Additionally, Dr. Charles McMillan, Director of Los Alamos National Laboratory, has informed the National Nuclear Security Administration that further delay of the reprogramming would harm essential personnel at the lab and would create greater difficulty in meeting near-term DOD requirements, i.e., producing 10 pits per year by FY 2019, and ramping up to 30 pits per year by FY 2021. Meeting these requirements is essential to support the W78/88-1 warhead Life Extension Program.

Mr. COOPER. 17) What is the requirement for plutonium pit production and under what circumstances might the need be fewer than 80 pits? Is the Administration examining this plutonium pit requirement as directed in Sec 3147 of the NDAA FY 2013?

Secretary CREEDON. Section 3147 of the National Defense Authorization Act for Fiscal Year 2013 requires DOD to review its pit production requirement and provide analysis for a range of production capacities in a report to Congress. This report is currently with the Nuclear Weapons Council members for review and approval. DOD maintains its requirement for 50–80 pits per year in order to perform planned stockpile work, maintain the highly skilled workforce that performs this work, and hedge against technical failure and geopolitical surprise. Because multiple factors affect DOD requirements, including stockpile needs and U.S. policy objectives, DOD recognizes that at times fewer than 80 pits are required; therefore, DOD allows for a range of 50–80 pits per year. We look forward to informing Congress of our analysis more fully.

Mr. COOPER. 18) Would increasing decision-time for the President by reducing alert levels, as Senator Nunn has recommended, provide opportunities for increasing stability and reducing the risk of miscalculation?

Secretary CREEDON. The Nuclear Posture Review follow-on analysis of deterrence requirements did look at this issue and did examine postures that involved some additional reduction in readiness. We found that additional steps in this regard would be difficult to verify on the other side, and more importantly could be destabilizing in a crisis if alert levels were restored. Our conclusion was that modernized and improved command and control systems and processes were a better method of increasing Presidential decisionmaking time than reducing alert levels.

Mr. COOPER. 19) What is the impact of delayed reprogramming and NDAA FY13 provisions withholding funds for interim Pu [plutonium] strategy?

General KEHLER. NNSA’s reprogramming request provides the initial funding to develop an interim plutonium processing capability at Los Alamos National Laboratory, which is necessary to support the stockpile modernization program. Specifically, the funds will be used to equip the Radiological Laboratory Utility Office Building at Los Alamos for higher materials limits, repurpose portions of the Los

¹NATO common funding derives from U.S. and other contributions. The U.S. burden-share costs are generally 24 percent of the NATO budget. The U.S. burden-share is generally 22–24 percent of the total NSIP costs. As a result, the NATO funds above include the U.S. contribution to NATO.

Alamos Plutonium Facility (PF-4), and initiate preconceptual work for establishing enduring capabilities. Deferral of the reprogramming approval delays the initial implementation steps of the interim capability and delays the current plan to produce 30 pits per year by 2021 by at least 2 years.

Mr. COOPER. 20) What is the requirement for plutonium pit production and under what circumstances might the need be fewer than 80 pits? Is the Administration examining this plutonium pit requirement as directed in Sec 3147 of the NDAA FY 2013?

General KEHLER. The long-term requirement for pit production is 50–80 pits per year. NNSA has a plan to build this capacity over time to realize a fully responsive infrastructure. The near term life extension program needs can be met with less than this capacity by refurbishing and reusing components. As required in Sec. 3147 of the NDAA FY 2013, the Pit Production Requirements Report will address this question further and is in interagency coordination.

Mr. COOPER. 21) Are you concerned about the risk of unexpected cost and schedule slips for the B61 LEP causing a delay to other LEPs?

General KEHLER. Yes. As currently planned, the B61 life extension provides an opportunity to cost-effectively address known and projected aging and performance issues and to enhance the safety and security of the system while aligning the effort within the overall capacity of the weapons complex. Slipping the B61 LEP schedule out of the narrow window of opportunity will create significant cost growth and impact refurbishments on other systems.

Mr. COOPER. 22) Does New START remain in U.S. interests? Why? What would be the risks of limiting funding for New START implementation in FY14?

General KEHLER. Yes. New START reduces the potential threat to the American people, enhances stability and provides the U.S. with valuable insight into Russian strategic nuclear forces. The treaty's verification regime includes data exchanges, on-site inspections, and other measures enabling us to observe and evaluate Russian activities, including compliance with treaty obligations.

Funding limitations in FY14 would introduce significant risk for the U.S. to comply with the treaty's central limits by February 2018. FY14 funding is necessary to continue elimination of deactivated, nondeployed systems and prepare to implement additional actions necessary to ensure compliance.

Mr. COOPER. 23) Could further nuclear weapons reductions increase U.S. security?

General KEHLER. They could depending on the scale, scope, and nature of the reductions. I believe the negotiated mutual and verifiable reductions the U.S. has implemented with the Russians have definitely increased U.S. security by reducing significantly the number of nuclear weapons Russia could employ against us.

Mr. COOPER. 24) What part of the nuclear weapons hedge is for technical surprise and what part is for guarding against geopolitical surprise?

General KEHLER. Our nondeployed stockpile addresses both technical and geopolitical uncertainty and risks. There is no specific stockpile distinction. Execution of the modernization program for weapons and infrastructure is imperative to ensure appropriate hedge capabilities.

Mr. COOPER. 25) What is the impact of delayed reprogramming and NDAA FY13 provisions withholding funds for interim Pu [plutonium] strategy?

Ms. MILLER. The reprogramming funds initiate the activities associated with getting out of CMR and maintaining capabilities without CMR or CMRR–NF in the near term. Additional delays in approval of the reprogramming request slow down our efforts to ensure continuity in plutonium operations and will impact mission deliverables. The reprogramming request was submitted in September 2012; further delays in approval of the reprogramming pose a serious challenge to Los Alamos to meet mission requirements and will likely impact our ability to produce war reserve pits on the schedule required by the Life Extension Program. These challenges are described in the July 1, 2013 letter from LANL Director Charles McMillan to Secretary Moniz. Language in the FY2013 NDAA initially presented a challenge to begin execution of some activities associated with the plutonium strategy. Recent communication from both the House Armed Services Committee and the Senate Armed Services Committee indicates their conditional support for releasing part of the reprogramming to begin initial efforts associated with the Pu strategy. Release of the remaining funds would be approved after continued communication with both committees.

Mr. COOPER. 26) What is the requirement for plutonium pit production and under what circumstances might the need be fewer than 80 pits? Is the Administration examining this plutonium pit requirement as directed in Sec 3147 of the NDAA FY 2013?

Ms. MILLER. As directed in Section 3147 of the FY 2013 National Defense Authorization Act, the Secretary of Defense, in coordination with the Secretary of Energy and the Commander of U.S. Strategic Command is preparing a report for Congress on pit production capacity requirements. As of late August, the draft report is in interagency coordination and should be delivered soon.

NNSA's current requirements for pit production are based on the NWC-approved plan as described in the classified annex of the FY 2014 Stockpile Stewardship and Management Plan. The President's speech given in Berlin on June 19, 2013 announced changes in U.S. nuclear weapon employment guidance. That guidance may lead the Department of Defense to implement force structure changes that then may create circumstances leading to different pit production capacity requirements than we have in our current plans. Due to the anticipated length of time required for the Department of Defense to develop nuclear force structure changes, the report responding to section 3147 of the FY 2013 NDAA is based on current requirements. In any event, large changes are not expected as a result of any Department of Defense nuclear force structure changes.

Mr. COOPER. 27) What is NNSA's plan to reduce cost and schedule risk for performing 4 concurrent LEPs? What is the risk that B61 could delay other LEPs for the W78/88 and other life extension programs for militarily necessary weapons?

Ms. MILLER. NNSA is continuing to work with the Department of Defense to define the anticipated scope, schedule, and costs for all the LEPs. The LEPs are not overlapping in a conflicted manner since they are in different phases of the Life Extension process. An example of reducing cost and schedule risk is the recent approval of the B61-12 LEP. Based on a joint assessment of risk and costs, the Nuclear Weapons Council (NWC) selected Option 3B which combines a large amount of component reuse and some remanufacture and redesign where needed to minimize costs while meeting military requirements. As part of the decision process, the NWC also approved a 2019 First Production Unit (FPU) to reduce overall execution risk and better align B61-12 first production with completion of the W76-1 production.

Regarding the B61, NNSA acknowledges there are risks to maintaining a B61-12 FPU in 2019 in part due to sequestration impacts and the expected integration challenges associated with a full life extension program scope. NNSA is aggressively working to manage those risks, hold schedule and complete production by the 2024-2025 timeframe. As NNSA executes the LEP, we will continue to work with the Department of Defense to balance future LEP requirements to meet cost constraints and address the needs of the Department of Defense.

Mr. COOPER. 28) Why was DNN reduced by \$542M, including an 18% cut to Global Threat reduction Initiative? Was this money transferred to weapons activities which was increased by \$567M?

Ms. MILLER. In general, the reductions in DOE/NNSA's Office of Defense Nuclear Nonproliferation (DNN) reflect the successful completion of major program milestones, such as the surge in nuclear removals by the Global Threat Reduction Initiative (GTRI) in support of the 4-year plans, the planned December 2013 completion of the domestic uranium enrichment research, development, and demonstration project, and from reassessing the plutonium disposition program. Specifically, the reduction in funding for GTRI is not related to the increase in Weapons Activities; a significant portion of the Weapons Activities' increase came from an additional transfer of funds from the Department of Defense. Preventing nuclear and radiological terrorism remains one of the highest priorities for the Administration and DOE/NNSA, and we are working to address these dangers in the most effective, cost-efficient, and timely manner possible.

Mr. COOPER. 29) Why was GTRI funding reduced while the President was working toward a 4-year goal? How much HEU remains unsecured?

Ms. MILLER. The top-line reduction in funding for DOE/NNSA's Global Threat Reduction Initiative (GTRI) is mainly the result of the successful completion of our 4-year effort to secure vulnerable nuclear materials. The reduction is consistent with the 4-year plan and reflects increased funding requested in FY 2013 for removal efforts occurring in early FY 2014. Great strides have been made to reduce the prospect of nuclear terrorism in the last 4 years. As of August 6, 2013, GTRI had removed and/or confirmed the disposition of 5,017 kilograms of highly enriched uranium (HEU) and plutonium. GTRI has recently completed a 5-year effort to reconcile the amounts and location of U.S.-origin HEU outside the United States. As a result of that effort—as well as efforts to identify additional non-U.S.-origin HEU and plutonium that could be eliminated—GTRI has identified up to 3,000 kilograms of additional HEU and plutonium that could be targeted for removal or downblending beyond the 4-year effort.

Mr. COOPER. 30) How much highly Enriched Uranium remains outside the United States that could be secured or removed to decrease the risk of nuclear terrorism?

Ms. MILLER. DOE/NNSA's Global Threat Reduction Initiative (GTRI) has recently completed a 5-year effort to reconcile the amounts and location of U.S.-origin HEU located outside the United States. As a result of that effort—as well as efforts to locate additional non-U.S.-origin HEU and plutonium that could be eliminated—GTRI has identified up to 3,000 kilograms of additional HEU and plutonium that could be targeted for removal or downblending.

DOE/NNSA's Office of International Material Protection and Cooperation's (IMPC) immediate priority continues to be increasing the security of buildings and facilities in Russia that contain potentially vulnerable weapons-usable nuclear material. To date, the program has completed security upgrades at a cumulative 218 of the 229 buildings in Russia and has supported the downblending of over 15 metric tons of HEU.

While considerable security benefits have been gained from these cooperative efforts, much work is left to be done in Russia. Our ongoing nuclear security partnership with Russia will continue to foster improvements in nuclear security best practices in Russia and will facilitate faster and more effective solutions to meeting the security challenges that both countries consider critically important.

Mr. COOPER. 31) What is the impact of delayed reprogramming and NDAA FY13 provisions withholding funds for interim Pu [plutonium] strategy?

Dr. HARVEY. According to National Nuclear Security Administration (NNSA), delayed reprogramming and NDAA FY13 provisions are affecting near-term pit production and certification requirements. Additionally, Dr. Charles McMillan, Director of Los Alamos National Laboratory, has informed NNSA that further delay of the reprogramming will harm essential workforce at the lab and create even greater difficulty in meeting near-term DOD requirements, i.e., producing 10 pits per year by FY 2019 and ramping up to 30 pits per year by FY 2021. Meeting these requirements is essential to support the W78/88-1 Life Extension Program needs.

Mr. COOPER. 32) What is the requirement for plutonium pit production and under what circumstances might the need be fewer than 80 pits? Is the Administration examining this plutonium pit requirement as directed in Sec 3147 of the NDAA FY 2013?

Dr. HARVEY. The report requirement pursuant to section 3147 of the FY 2013 NDAA mandates the DOD review its pit production requirement and provide analysis for a range of production capacities. This report is currently with the Nuclear Weapons Council Members for review and approval. DOD maintains its requirement for 50–80 pits per year in order to perform planned stockpile work, maintain the highly skilled workforce that performs this work, and hedge against technical failure and geopolitical surprise. Because multiple factors affect DOD requirements, including stockpile needs and U.S. policy objectives, DOD recognizes that the range of 50–80 pits per year must be updated and refined frequently. We look forward to more fully informing Congress of our analysis.

Mr. COOPER. 33) What is the requirement for plutonium pit production and under what circumstances might the need be fewer than 80 pits? Is the Administration examining this plutonium pit requirement as directed in Sec 3147 of the NDAA FY 2013?

Dr. WINOKUR. The Board does not participate in developing the requirements for plutonium pit production. Pursuant to Section 3147 of the National Defense Authorization Act for Fiscal Year 2013, the responsibility to assess the annual plutonium pit production requirement resides with the Secretary of Defense, in coordination with the Secretary of Energy and the Commander of the United States Strategic Command.

Mr. COOPER. 34) How has the cost to procure IG services according to the intent of the Appropriations and authorization bills affected your budget?

Dr. WINOKUR. The National Defense Authorization Act for Fiscal Year (FY) 2013 directed the Board to procure Inspector General (IG) services from a Federal Government agency having expertise in the Board's mission by no later than October 1, 2013. In so requiring, the NOAA was silent concerning the authorization of funds necessary to implement this provision.

The Board's budget for FY 2014 is based on the current state of the relevant appropriations bills. Both the House and Senate Appropriations Energy and Water Development Subcommittees have authorized \$29.915 million for the Board's activities. Title IV of the House bill, however, further mandates that the Board provide \$850,000 to the U.S. Nuclear Regulatory Commission's IG (NRC-IG) for IG services. While the Senate bill contains no such language, it must be noted that this bill has not yet passed the Senate floor.

Consistent with the House bill, the NRC-IG has informed the Board that it will not provide IG services to the Board for less than \$850,000. The Board believes \$850,000 is grossly disproportionate to IG appropriations typically imposed on agencies of the Board's size. Nearly every similarly structured agency the Board examined had IG appropriations ranging from approximately 0.16 percent to 0.85 percent. Conversely, \$850,000 would amount to nearly 2.84% of the Board's total current budget—the equivalent of three to four Board engineers. This reduction in the Board's staffing would necessarily result in less safety oversight of Department of Energy defense nuclear facilities.

QUESTION SUBMITTED BY MR. LANGEVIN

Mr. LANGEVIN. 35) While the FY 2014 budget request for NNSA weapons activities is more than 7% above last year's presequeter appropriated level, the budget request for the Global Threat Reduction Initiative is a reduction of more than 15% below the FY 2013 level. Are you concerned that funding for weapons programs is crowding out funding for NNSA's vital nuclear and radiological material security programs?

Ms. MILLER. The funding level for the Global Threat Reduction Initiative (GTRI) largely reflects the successful completion of major program milestones. While the overall funding for GTRI is less in the FY 2014 request, the FY 2014 request for GTRI's Reactor Conversion program reflects a 16% increase, supporting the acceleration of the establishment of reliable supplies of the medical isotope molybdenum-99 (Mo-99) produced without the use of highly enriched uranium (HEU). For GTRI's radiological material protection efforts, there is a partial offset by increases from cost sharing with volunteer domestic protection partners that does not appear in the GTRI budget.

Four years of accelerated effort helped DOE/NNSA make a significant contribution to global security, but it is accurately described as "a sprint in the middle of a marathon." More than 100 research reactors and isotope production facilities still operate with HEU, significant stockpiles of HEU still exist in too many places, and global inventories of plutonium are steadily rising. DOE/NNSA will continue to work with international partners to minimize the use of HEU, and eliminate additional stocks of HEU and plutonium after the completion of the 4-year effort. Preventing nuclear and radiological terrorism remains one of the highest priorities for the Administration and DOE/NNSA. We are working with our domestic and international partners to secure these dangerous materials in the most effective, efficient, and timely manner possible.

