AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

[H.A.S.C. No. 112–36]

HEARING

ON

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2012

AND

OVERSIGHT OF PREVIOUSLY AUTHORIZED PROGRAMS

BEFORE THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED TWELFTH CONGRESS

FIRST SESSION

SUBCOMMITTEE ON STRATEGIC FORCES HEARING

ON

BUDGET REQUEST FOR DEPARTMENT OF ENERGY ATOMIC ENERGY DEFENSE ACTIVITIES AND DEPARTMENT OF DEFENSE NUCLEAR FORCES PROGRAMS

HEARING HELD
APRIL 5, 2011

U.S. GOVERNMENT PRINTING OFFICE

65–807 WASHINGTON : 2011

For sale by the Superintendent of Documents, U.S. Government Printing Office,
http://bookstore.gpo.gov. For more information, contact the GPO Customer Contact Center,
U.S. Government Printing Office. Phone 202–512–1800, or 866–512–1800 (toll-free). E-mail, gpo@custhelp.com.

SUBCOMMITTEE ON STRATEGIC FORCES

MICHAEL TURNER, Ohio, *Chairman*

TRENT FRANKS, Arizona
DOUG LAMBORN, Colorado
MO BROOKS, Alabama
MAC THORNBERRY, Texas
MIKE ROGERS, Alabama
JOHN C. FLEMING, M.D., Louisiana
SCOTT RIGELL, Virginia
AUSTIN SCOTT, Georgia

LORETTA SANCHEZ, California
JAMES R. LANGEVIN, Rhode Island
RICK LARSEN, Washington
MARTIN HEINRICH, New Mexico
JOHN R. GARAMENDI, California
C.A. DUTCH RUPPERSBERGER, Maryland
BETTY SUTTON, Ohio

KARI BINGEN, *Professional Staff Member*
LEONOR TOMERO, *Professional Staff Member*
ALEJANDRA VILLARREAL, *Staff Assistant*

CONTENTS

CHRONOLOGICAL LIST OF HEARINGS

2011

Page

HEARING:

Tuesday, April 5, 2011, Fiscal Year 2012 National Defense Authorization Budget Request for Department of Energy Atomic Energy Defense Activities and Department of Defense Nuclear Forces Programs 1

APPENDIX:

Tuesday, April 5, 2011 49

TUESDAY, APRIL 5, 2011

FISCAL YEAR 2012 NATIONAL DEFENSE AUTHORIZATION BUDGET REQUEST FOR DEPARTMENT OF ENERGY ATOMIC ENERGY DEFENSE ACTIVITIES AND DEPARTMENT OF DEFENSE NUCLEAR FORCES PROGRAMS

STATEMENTS PRESENTED BY MEMBERS OF CONGRESS

Sanchez, Hon. Loretta, a Representative from California, Ranking Member, Subcommittee on Strategic Forces 4

Turner, Hon. Michael, a Representative from Ohio, Chairman, Subcommittee on Strategic Forces 1

WITNESSES

Benedict, RADM Terry, USN, Director, Strategic Systems Programs, U.S. Navy 38

Chambers, Maj. Gen. William A., USAF, Assistant Chief of Staff, Strategic Deterrence and Nuclear Integration, U.S. Air Force 36

D'Agostino, Hon. Thomas P., Administrator, National Nuclear Security Administration, U.S. Department of Energy 5

Triay, Hon. Inés R., Ph.D., Assistant Secretary for Environmental Management, U.S. Department of Energy 8

Weber, Hon. Andrew, Assistant Secretary of Defense for Nuclear and Chemical and Biological Defense Programs, Office of the Secretary of Defense 35

Winokur, Hon. Peter S., Ph.D., Chairman, Defense Nuclear Facilities Safety Board 10

APPENDIX

PREPARED STATEMENTS:

Benedict, RADM Terry 153

Chambers, Maj. Gen. William A. 146

D'Agostino, Hon. Thomas P. 58

Sanchez, Hon. Loretta 56

Triay, Hon. Inés R. 99

Turner, Hon. Michael 53

Weber, Hon. Andrew 131

Winokur, Hon. Peter S. 110

Page

DOCUMENTS SUBMITTED FOR THE RECORD:

[There were no Documents submitted.]

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING:

Mr. Franks 167
Mr. Turner 167

QUESTIONS SUBMITTED BY MEMBERS POST HEARING:

Mr. Heinrich 190
Mr. Larsen 188
Ms. Sanchez 179
Mr. Turner 171

FISCAL YEAR 2012 NATIONAL DEFENSE AUTHORIZATION BUDGET REQUEST FOR DEPARTMENT OF ENERGY ATOMIC ENERGY DEFENSE ACTIVITIES AND DEPARTMENT OF DEFENSE NUCLEAR FORCES PROGRAMS

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON STRATEGIC FORCES,
Washington, DC, Tuesday, April 5, 2011.

The subcommittee met, pursuant to call, at 11:34 a.m. in room 2212, Rayburn House Office Building, Hon. Michael Turner (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. MICHAEL TURNER, A REPRESENTATIVE FROM OHIO, CHAIRMAN, SUBCOMMITTEE ON STRATEGIC FORCES

Mr. TURNER. I call to order the meeting of the subcommittee and I would like to extend a warm welcome to our first panel of witnesses today, Mr. Tom D'Agostino, Administrator of the National Nuclear Security Administration, Dr. Inés Triay, Assistant Secretary of Energy for Environmental Management and Dr. Peter Winokur, Chairman of the Defense Nuclear Safety Board.

I welcome all of you and thank you for your dedication.

This annual nuclear budget hearing has typically focused solely on the Department of Energy, DOE, and National Nuclear Security Administration, NNSA.

However, the Department of Defense also has a significant role in maintaining our Nation's nuclear deterrent and is the primary customer for NNSA's weapons activities, is directly responsible for shaping many of NNSA's plans and programs. Therefore, I have asked three key DOD [Department of Defense] leaders to testify in a second panel on the Department's nuclear programs and budgets and the linkages with NNSA.

And I would also like to welcome these individuals, Mr. Andrew Weber, Assistant Secretary of Defense for Nuclear, Chemical and Biological Defense Programs and Staff Director of the Nuclear Weapons Council, Major General William Chambers, Assistant Chief of Staff of the Air Force for Strategic Deterrence and Nuclear Integration, and Rear Admiral Terry Benedict, Director of the Navy's Strategic Systems Programs.

Remarkably, a strong bipartisan and bicameral consensus has been forged over the need for nuclear modernization. This way was paved 2 years ago, with the important work done by the bipartisan Strategic Posture Commission, led by Dr. William Perry and Dr. James Schlesinger.

Less than 2 weeks ago, all 16 members of this subcommittee sent a letter to the Budget Committee, urging them to support NNSA's funding increases and to ensure that such funds are categorized as national defense.

The Nuclear Posture Review and the Section 1251 Report made many promises with respect to the modernization of our nuclear warheads, delivery systems, and infrastructure.

Based on what I have seen thus far of the fiscal year 2012 budget requests, I am encouraged that the Administration appears ready to honor these promises.

But there is much work that needs to be done, and my focus today is to understand exactly how these programs are being implemented and the plans, programs and budgets of NNSA and DOD.

NNSA has outlined a tightly choreographed warhead life extension plan over the next two decades that meets DOD's requirements, matches its availability, its variable capacity and work force, and syncs to its infrastructure modernization plans.

Any perturbations in this plan or changes in funding have wide reaching implications.

To this end, I am particularly concerned about the B61 [nuclear bomb] life extension program, LEP. Despite specific time line requirements, the magnitude of the B61 LEP will not be known until cost and design studies are completed later this year. NNSA has been unable to start the W78 [thermonuclear warhead] life extension program, which will also explore the feasibility of a common ICBM [intercontinental ballistic missile] and SLBM [submarine-launched ballistic missile] warhead due to limitations in the continuing resolution.

I would ask Administrator D'Agostino to discuss how these programs are being managed to minimize schedule and cost risk.

I am also concerned about NNSA's two major construction projects at Los Alamos and Y–12 [National Security Complex].

This year's budget request includes revised cost estimates for both projects, based on a 45 percent completion design, which are significantly higher than earlier estimates.

Despite the cost growth, only $340 million has been added to the Future-Years Nuclear Security Program, FYNSP, and the majority of the construction funds will come outside the FYNSP. I would like to understand what is driving these costs and how NNSA plans to simultaneously manage these large-scale construction projects.

The $4.1 billion increase in modernization funding contained in last November's 1251 Report is welcome, but upon further inspection, is a bit misleading. Of the $4.1 billion added to the Future-Years Nuclear Security Program, $1.5 billion of this, or 37 percent, is allocated to employee pension plans, not modernization.

I am open to any ideas that could give NNSA and its contractors greater flexibility in meeting their pension obligations.

On the DOD side, the NPR [Nuclear Posture Review] and 1251 Report described plans for the sustainment and modernization of several DOD systems, including a new bomber, dual-capable aircraft and a new cruise missile, a potential ICBM follow-on, the *Ohio*-class replacement submarine, the Trident D5 [submarine-

launched ballistic missile] life extension program, a new joint Air Force-Navy fuze replacement program, and the nuclear command and control infrastructure. This is a tremendous to-do list.

Does the budget request merely contain placeholders for these plans or are there concrete activities associated with each?

I am also concerned about the solid rocket motor industrial base and I know that Admiral Benedict's budget, in particular, has increased to accommodate rising costs to sustain this important capability.

Another issue that I am closely watching is the implementation of the New START [Strategic Arms Reduction Treaty] Treaty. We have yet to see exactly how DOD will implement the force reductions in the treaty or the associated funding requirements. However, senior Administration officials, including the President's national security advisor, have already commented that, "We are making preparations for the next round of nuclear reductions" and that, "The Department of Defense will develop options for further reductions in our current nuclear stockpile."

It would seem to me that we need to understand and work through the details of how to smartly implement New START before rushing towards another round of reductions.

Additionally, and I have said this in previous years, I remain concerned about nuclear safety and security.

There is no margin for error in the nuclear business.

I would appreciate our witnesses discussing their efforts to address nuclear safety and security, including Dr. Winokur's safety assessment of our nuclear facilities and operations.

In the area of Environmental Management, I would welcome Dr. Triay's update on EM [Environmental Management] progress to date, her priorities, and the challenges ahead. Additionally, our committee included a provision in last year's defense bill to authorize the establishment of energy parks on former defense nuclear facilities.

Miamisburg Mound in my district in Ohio was once a key Cold War-era nuclear production facility and, after an extensive cleanup effort, has been redeveloped into a business park for high-tech companies. It is certainly one of the success stories in the cleanup process and is a candidate for channeling the community's legacy nuclear expertise into new energy research.

I have also asked Deputy NNSA Administrator Harrington to participate in today's hearing to address member questions on nuclear nonproliferation. This issue is handled at the full committee level, but we have been given approval by Chairman McKeon to discuss it today with our expert witnesses.

There is strong bipartisan support to keep dangerous material out of the wrong hands, especially for the urgent task of identifying, securing, and reducing foreign sources of potential nuclear and radiological threats.

The committee is also closely monitoring plans to build nuclear centers of excellence in China and India to understand their scope and how DOD and NNSA funding would be used.

On a final note, I would want to make it clear that while our subcommittee supports the increase in nuclear funding, we do not write blank checks.

We will continue to conduct rigorous oversight of the nuclear portfolio, seek out areas for cost savings and efficiencies, and make budget modifications consistent with our oversight findings.

I would like to thank our witnesses for being with us today. Your leadership and expertise is greatly appreciated.

And with that, I would like to turn to my ranking member, Ms. Sanchez, for her opening comments.

[The prepared statement of Mr. Turner can be found in the Appendix on page 53.]

STATEMENT OF HON. LORETTA SANCHEZ, A REPRESENTATIVE FROM CALIFORNIA, RANKING MEMBER, SUBCOMMITTEE ON STRATEGIC FORCES

Ms. SANCHEZ. Thank you, Chairman Turner.

Thank you, again, to all of you for being before us. Thank you for, several of you, secretary and others, who met with us ahead of time to discuss some of the issues, and I know that that brought a whole bunch of other questions.

So I am hoping that—it is a busy morning, but that more of our members show up to ask those questions. If not, you will have a lot for the record, I am sure.

I would like to touch on a few specific issues related to nuclear nonproliferation, nuclear cleanup, and sustaining our nuclear deterrent and our nuclear forces.

First, I have been very concerned about the delays in the urgent nuclear nonproliferation effort stemming from the continuing resolution. Even securing all vulnerable weapons-usable material in 4 years remains one of the most pressing national security issues that we have.

I am also interested in hearing about interagency coordination and how the Department of Defense supports nuclear nonproliferation activities and what opportunities and challenges still remain for cooperative threat reduction.

Next, the nuclear cleanup remains an important priority; sites like Hanford and Savannah River site, played a unique and irreplaceable role during the Cold War and now we must make diligent and quick progress toward cleanup. So I would like to hear a little of that.

I look forward to the opportunity to hear about the progress made.

Especially, because I know we put monies in the stimulus package to be able to do that. And what problems and pitfalls still remain with respect to that?

Third, President Obama and Vice President Biden have made clear the importance of maintaining a safe, secure and reliable nuclear arsenal without nuclear testing, especially in the context of nuclear weapons reductions. And so I look forward to hearing about how the fiscal year 2012 budget request will strengthen the Stockpile Stewardship Program.

Several challenges loom ahead, including how NNSA will oversee concurrent construction, on time and on budget, of the Chemistry and Metallurgy Research Replacement, or the CMRR, facility at Los Alamos National Laboratory and of the Uranium Processing Facility at Y–12.

And I would also like to hear about how the fiscal year 2012 budget request supports surveillance activities, verification and dismantlement of nuclear weapons.

And I would like to hear the discussion of the Department of Defense's plans for sustaining and replacing our nuclear forces in the context of the New START force reduction and potential further nuclear reductions and what cost savings, if any, are being considered there.

I would also like to specifically point to the challenges sustaining the industrial base, with regard to our solid rocket motors in the wake of NASA's [the National Aeronautics and Space Administration's] cancelling its Constellation program and what the cost impact will have for the Department of Defense.

And finally, I would like to hear about progress made on spring cleaning the nuclear enterprise culture within the Air Force. Retaining, developing and recruiting all those critical skills remain essential for the nuclear mission at DOD, as well as NNSA.

So, again, welcome to all of our guests and, Mr. Chairman, I also want to remind you or mention that at 12:30, we have a Democratic meeting. So most of us will be leaving for that, but should come back once that is done.

Thank you.

[The prepared statement of Ms. Sanchez can be found in the Appendix on page 56.]

Mr. TURNER. Very good.

And now, we will turn to the first of three witnesses and ask each to summarize his or her statement in about 5 minutes.

We will then proceed to member questions and then transition to the second panel.

Mr. D'Agostino, the floor is yours.

STATEMENT OF HON. THOMAS P. D'AGOSTINO, ADMINISTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION, U.S. DEPARTMENT OF ENERGY

Secretary D'AGOSTINO. Thank you, Chairman Turner, Ranking Member Sanchez, for the opportunity to address the committee today.

I would also like to take the opportunity to recognize my Principal Deputy Administrator Neile Miller and Deputy Administrator Don Cook, who are both with me, in addition to Deputy Administrator Harrington, as you mentioned earlier in your remarks.

They are seated behind me.

I would like to thank you and the committee for your continued support of the Department of Energy and the National Nuclear Security Administration and the 35,000 men and women working across our enterprise to keep our country safe, protect our allies, and enhance global security.

We couldn't do this work without strong support, bipartisan support, and engaged leadership in Congress.

I come before you today to discuss the President's budget request for the NNSA, the capabilities we offer the Nation and, indeed, the world right now are on display.

As you know, the earthquake and tsunami that struck Japan on March 11, 2011, caused significant damage to the nuclear power plants there, releasing radioactive materials into the environment.

First and foremost, our thoughts and prayers are with the Japanese people as they deal with this crisis. To assist in the response, the Department deployed 45 people and over 17,000 pounds worth of equipment to Japan, including NNSA's Aerial Measuring System and our Consequence Management Response Teams.

They are on the ground, utilizing their unique skills, expertise, and equipment in partnership with Japan to help address the situation.

While these teams are at the tip of the spear here at home, we have teams working around the clock at Lawrence Livermore National Laboratory and at our Remote Sensing Laboratory in Nevada, working on the information and putting together products that can be used by the Defense Department, the interagency team and the Japanese Government to understand what is happening on the ground.

Everyone in the NNSA understands the important role we are playing with this tragedy. It shows the commitment to service and excellence that mirrors our work and the important—and, frankly, highlights the resources President Obama has requested for the NNSA.

The budget request seeks to make critical investments in the future of our enterprise, which will allow us continue to implement the President's nuclear security agenda. As I see it, the request can be broken down into three key themes.

First, we are investing in our future. President Obama has committed to invest more than $85 billion over the next decade to ensure the safety, security and effectiveness of our nuclear stockpile, and to modernize the infrastructure and revitalize the science and technology base that supports the full range of our nuclear security missions.

As part of that commitment, the budget request provides $76 billion for our Weapons Activities account to support our efforts to leverage the best science and technology in the world to maintain our deterrent.

This will enable us to enhance our surveillance of the stockpile, proceed with key life extension programs, and continue to design and modernize the facilities we need to maintain our Nation's expertise in uranium processing and plutonium research and development.

Investing in a modern, nuclear security enterprise is critical to our stockpile stewardship program. But it also supports the full range of the nuclear security mission, which brings me to the second key theme in this budget request, which is implementing the President's nuclear security agenda.

President Obama has made strengthening nuclear security and the nuclear nonproliferation regime one of his top priorities. As he said in his speech in Prague in April 2009, almost exactly 2 years ago to the date, the threat of a terrorist acquiring and using a nuclear weapon is the most immediate and extreme threat we face.

Preventing the spread of nuclear weapons and keeping dangerous nuclear material out of the hands of terrorists is a vital na-

tional security priority. These are, without a doubt, national security programs, and I hope this committee and the Congress will treat them as such.

To address that threat, we are requesting $2.5 billion in 2012 and more than $14.2 billion over the next 5 years for our Nuclear Non-Proliferation programs.

This will provide the resources required to meet the commitments secured during the 2010 Nuclear Security Summit. For fiscal year 2011, it includes $1 billion to remove and prevent the smuggling of dangerous nuclear material around the world and enable NNSA to continue to lead the international efforts to implement more stringent standards for the physical protection of nuclear material and for nuclear facilities worldwide.

To power the nuclear Navy, President Obama has requested $1.1 billion for NNSA's Naval Reactors program. This will allow us to continue the design work on a propulsion unit for the *Ohio*-class replacement submarine, in order to meet the Navy's required procurement date of 2019.

It includes critical investments in modern and sustainable spent fuel infrastructure at the naval reactors facility at Idaho National Laboratory.

And, finally, it seeks the resources to refuel the land-based prototype in upstate New York.

Mr. Chairman, I realize that this committee has many competing requirements. And while I believe that nothing is more important than ensuring our Nation's security, we also recognize that this request comes at a time of acute financial stress for our entire country.

It is my responsibility to show to you that we can manage those resources wisely.

This brings me to the third theme, outlined in this request, and that is our commitment to improving the way we do business and manage our resources.

Together, we are working with our M&O [management and operations] partners to streamline our governance model, to devote more resources to critical mission work and maximize our ability to complete our mission safely and securely. We are making sure that we have the right contracting strategy in place.

We are improving our project management by ensuring we have qualified project managers leading our major projects, setting cost and schedule baselines on construction projects when design work is 90 percent complete, subjecting those estimates to rigorous independent reviews and placing a renewed focus across our organization on sound project management.

That is why we recently created a new policy and oversight office for managing major projects that reports directly to me. This will help ensure that project management gets the senior-level, high-level, focus that it deserves.

And we are continuing to find ways to save money across our enterprise. For example, since 2007, our Supply Chain Management Center has used new technologies and pooled purchasing power to drive efficiencies across our sites.

This result has been more than $213 million in auditable cost savings.

All of this is part of our effort to create one NNSA, a true partnership and an integrated enterprise between all our programs and our partners to fulfill our continuing missions.

Taken together, these steps will ensure that we have a modern 21st century nuclear security enterprise that is safer, more secure, more efficient, and organized to succeed.

That is the vision outlined in this budget request. It supports the full range of NNSA missions. More importantly, it invests in the infrastructure, the people, and the science and technology required to fulfill our mission and to make the world a safer place.

I look forward to working with the members of this committee, and with that, I would be happy to take your questions.

[The prepared statement of Secretary D'Agostino can be found in the Appendix on page 58.]

Mr. TURNER. Thank you. Dr. Triay.

STATEMENT OF HON. INÉS R. TRIAY, PH.D., ASSISTANT SECRETARY FOR ENVIRONMENTAL MANAGEMENT, U.S. DEPARTMENT OF ENERGY

Secretary TRIAY. Thank you.

Good afternoon, Chairman Turner, Ranking Member Sanchez and members of the subcommittee.

I am pleased to be here today and to address your questions regarding the Office of Environmental Management's fiscal year 2012 budget request.

The fiscal year 2012 budget request of $6.1 billion will protect human health and the environment, through the safe environmental cleanup of past nuclear weapons development and Government-sponsored nuclear energy research.

The Office of Environmental Management's primary responsibility is to keep our employees, the public, and the states where cleanups are located safe from radioactive and hazardous materials contamination.

We continue to adhere to a safety-first culture that integrates environment, safety, and health requirements and controls into all work activities.

Over the last two decades, the Office of Environmental Management's compliance posture has evolved to where we have a well-defined and established relationship with our regulators.

The fiscal year 2012 budget request maintains a compliant position, by honoring regulatory commitments.

There are approximately 40 cleanup agreements that provide a framework for cleaning up the Cold War legacy that EM will continue to abide by.

The Office of Environmental Management's goal in fiscal year 2012 is to meet 100 percent of its enforceable agreement milestones that are located within cleanup agreements.

For example, our fiscal year 2012 budget fully funds the Tri-Party Agreement settlement with Washington State as well as the Transuranic Waste Retrievals at Idaho, that are consistent with terms of the Idaho Settlement Agreement.

In addition to keeping our program running safely and efficiently, the Office of Environmental Management enables key oper-

ations of the Department's defense complex, including the National Nuclear Security Administration.

For instance, our management of special nuclear materials, spent nuclear fuel and transuranic waste allows NNSA to continue to carry out their mission. Our fiscal year 2012 budget request supports NNSA's critical defense activities, through the continued environmental cleanup work that maintains compliance at NNSA's own sites.

Over the past 2 years, the Office of Environmental Management has made significant progress in accelerating environmental cleanup across the departmental complex.

We estimate that by the end of fiscal year 2011, the acceleration of excess facilities decontamination and decommissioning and cleanup of contaminated areas will reduce the legacy cleanup footprint by 40 percent. This will lead to approximately 90 percent footprint reduction by 2015.

In terms of square miles, we project that by the end of fiscal year 2011, the footprint will have been reduced from 900 square miles to 540 square miles. By 2015, it is envisioned that the footprint could be reduced to 90 square miles.

Footprint reduction efforts have resulted in estimated cost avoidances of approximately $3 billion and cost savings of approximately $4 billion, for a total of $7 billion in life-cycle costs.

In fiscal year 2012, the continued management and removal of legacy transuranic waste from generator sites will directly support risk reduction and aid in the goal of reducing site footprint.

We estimate that the disposition of 90 percent of legacy transuranic waste will be completed by 2015.

The last few years, the Environmental Management program has been focusing on providing opportunities to small businesses to perform our environmental cleanup work.

Recovery Act prime and sub contracts have awarded a total of $1.8 billion to small businesses. In addition, base, prime and sub contracts have awarded $1.7 billion to small businesses in fiscal year 2010.

Overall, the feedback we have received from small businesses participating in the Recovery Act projects has been very positive. Recovery Act funds have allowed small businesses to enhance their competitive skills, pursue opportunities in new markets, sectors, and reinvest in their company's infrastructure.

The Office of Environmental Management will continue to promote the usage of small businesses and identify future opportunities for small businesses to perform our environmental cleanup work.

The Office of Environmental Management's continued progress in contracts and project management performance has resulted in our program meeting three of the five criteria needed to be removed from the Government Accountability Office highest-risk list.

The GAO [Government Accountability Office] has noted that the Office of Environmental Management has demonstrated strong commitment and leadership, demonstrating progress in implementing corrective measures and develop a corrective action plan that identifies root causes, effective solutions and near-term plans for implementing those solutions.

Currently we continue to work toward meeting all of the Government Accountability Office's requirements to be removed from the high-risk list.

Mr. Chairman, ranking member and members of the subcommittee, I am honored to be here today representing the Office of Environmental Management. We are committed to achieving our mission in a safe, effective, and efficient manner. We will continue to apply innovative environmental cleanup strategies, so that we can complete quality work safely, on schedule and within costs, thereby demonstrating value to the American taxpayer.

I am pleased to answer any questions you may have.

[The prepared statement of Secretary Triay can be found in the Appendix on page 99.]

Mr. TURNER. Thank you, Dr. Triay.

I want to acknowledge that Congressman Bishop has joined us, and I ask unanimous consent that Mr. Bishop of Utah, and other committee and non-committee members, if any, be allowed to participate in today's hearing after all committee members have had an opportunity to ask their questions.

Before I recognize Dr. Winokur, I would like to acknowledge three Safety Board members joining him today and thank them for their service. If you would upon—acknowledge, raising your hand, so we can verify you.

Ms. Robertson.

Mr. Mansfield.

Mr. Bader.

Very good. Thank you for being here and thank you for your service.

Dr. Winokur.

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

Dr. WINOKUR. Thank you. Thank you, Mr. Chairman and members of the subcommittee.

I am Peter Winokur, the Chairman of the Defense Nuclear Facility Safety Board, known as the DNFSB.

I submitted a written summary for the record that describes the Board's mission and highlights a number of safety issues that are particularly important to ensuring that the defense nuclear complex can safely accomplish its missions. I will provide a brief overview for your consideration today.

Our agency was established by Congress to provide safety oversight for the defense nuclear facilities operated by DOE and, now, NNSA. We are the only agency that provides independent safety oversight of DOE's defense nuclear facilities.

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 2012 includes $29 million in new budget authority for the Board. This is $3 million more than fiscal year 2010. 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 safety oversight of DOE's defense nuclear complex, given the pace and scope of DOE's activities.

The Board's safety oversight is geared around several broad safety issues.

To begin with, we expend great effort to ensure that DOE preserves and continuously improves its safety directives. We are carefully evaluating the outcome of the DOE 2010 Safety and Security Reform Plan as well as DOE's follow-on initiative to compress its review process to expedite revision of seven health and safety directives essential to public and worker safety.

At this time, DOE and NNSA are designing and building facilities with a total project cost of more than $20 billion. I cannot overstate the importance of integrating safety into the design of these facilities at an early stage. Failing to do so will lead to surprises and costly changes later in the process.

The Board is committed to the early resolution of safety issues with DOE. To that end, we publicly document significant unresolved technical differences between the Board and DOE concerning design and construction projects in quarterly reports to Congress.

The Board is continuing to urge NNSA to replace unsound facilities and invest in infrastructure for the future. The 9212 complex at Y–12 and the Chemistry and Metallurgy Research Replacement building at Los Alamos are both well overdue for replacement.

Last September, the Board issued its first report to Congress on aging and degrading facilities. We will update this report periodically to highlight the greatest infrastructure needs affecting safety of DOE and NNSA defense nuclear facilities.

In addition to legacy facilities that need replacement, DOE and NNSA have large quantities of legacy nuclear materials awaiting disposition.

DOE's preferred disposition for many materials has been chemical processing through the H–Canyon facility at the Savannah River site.

On February 28, 2011, the Board wrote to the Secretary of Energy to express its concerns that the premature shutdown of H–Canyon could have significant, unintended safety consequences.

I would like to highlight two final topics today.

The first is the Board's evaluation of design changes at DOE's Hanford Waste Treatment and Immobilization Plan. The second deals with lessons learned from the March 11th earthquake in Japan.

The Hanford Waste Treatment and Immobilization Plant, or WTP, is under design and construction at an estimated cost of more than $12 billion. This project is needed to convert 53 million gallons of high-level waste stored in 177 tanks at Hanford, into glass for disposal.

DOE began a major redesign of the project in 2009, with the design more than two-thirds complete and construction of major facilities between one-quarter and halfway done.

The Board held a public hearing in October 2010, to discuss our three greatest safety concerns with WTP, which include its mixing and transfer systems, control strategies for flammable hydrogen gas and process systems, and whether the tank forms can deliver

waste that meets the criteria needed for WTP to operate safely and effectively.

The Board issued a formal recommendation to the Secretary of Energy on the need for large-scale testing of WTP's mixing and transfer systems after the public hearing. We are still evaluating the other issues as DOE continues to develop information.

The March 11th earthquake in Japan provides a sobering reminder that nuclear facilities need to continually update their assessments of natural hazards and to be ready to respond to events that analysts consider beyond their design basis. Twelve days after the earthquake, the Secretary of Energy issued a safety bulletin on Events Beyond Design Basis Analysis, which requires DOE sites with Hazard Category 1 or 2 nuclear facilities to assess their ability to respond to Beyond Design Basis accidents.

We will track this activity closely and continue our own ongoing efforts to strengthen emergency preparedness at DOE's defense nuclear facilities.

That ends my statement. I will be happy to answer any questions you may have.

[The prepared statement of Dr. Winokur can be found in the Appendix on page 110.]

Mr. TURNER. Okay. Thank you.

We are going to now turn to a 5-minute round of questions because we have so many members who are in attendance who want to ask questions. We are going to try to limit it to 5 minutes and then hopefully get to a second round with our goal of getting to the second panel with plenty of time for members to participate with the second panel.

Mr. D'Agostino, both of my questions are going to be directed to you in the first round. And the first question goes to the issue of New START. As I indicated in my opening statement, everyone has a lot of questions about how New START will be implemented, and yet Administration officials are discussing further reductions to the stockpile, as evidenced by their own statements.

NNSA's 2010 Stockpile Stewardship and Management Plan states, "a modernized complex will enable further reductions in the stockpile over time."

Now, in looking at that statement, I assume that the converse of that is also true. Meaning that, it could be viewed as a constraint, also, for the reductions, until modernization of the complex is completed.

What direction have you been given to look at further nuclear reductions beyond New START levels?

Two, what specific warhead and facility modernization activities must be completed in order for NNSA to be comfortable with further stockpile reductions?

And would it be advisable to make reductions in our hedge prior to the completion of the Chemistry and Metallurgy Research Replacement Facility, CMRR, at Los Alamos and the Uranium Processing Facility, UPF, at Y–12?

And then secondly, I would like you to end with a commercial for NNSA as a national security funding item. As you know, with H.R. 1, initially, NNSA was identified as subject to a cut, as all of DOE

was, which I think was problematic in that NNSA not being identified as national security.

Working with Senator Kyl, we certainly hope to restore that on the Senate side, but also then continue to work on the House side, both with the Appropriations and Budget Committee, that item was corrected and restored in the last CR [continuing resolution]. No one, of course, at this point knows where we are going to be after this week.

But we are certainly hopeful that in the next CR and, certainly, in the budget discussions in 2012 that NNSA will be viewed as national security and not subject to the cuts, but actually subject to the increases that are necessary in order to modernize and support the nuclear weapons infrastructure.

So if you would end with a commercial on that, I would greatly appreciate it.

Mr. D'Agostino.

Secretary D'AGOSTINO. Yes, thank you very much.

Mr. Chairman, thank you very much for the questions.

With respect to your first one, I have not been directed to reduce or to do studies on the size of the stockpile. It would be, to answer your question straight up, the plan that we have right now, the plan that we submitted in our Stockpile Stewardship and Management Plan, there is a particular—there is a classified piece of this. I won't go into those classified details, but I will answer you as specifically as I can.

The Defense Department ultimately determines and makes recommendations to the President on the size of the stockpile. But one thing we have clear with the Defense Department and the National Nuclear Security Administration is our understanding that it is important to be able to demonstrate that our infrastructure is responsive and being able to respond to needs that the country may have.

First of all, responsive in ability to take care of the existing stockpile that we have right now. And we have identified that in our plan as having a Uranium Processing Facility that is up and running, having a Chemistry and Metallurgy Research Replacement facility that is available to do the surveillance work on our stockpile and help support a modest amount of pit manufacturing capability.

We have also identified this on our high explosive pressing capability. Right now, we are very limited in our ability to make the size of high explosives that we need in order to support the stockpile out into the future, and we have a project at the Pantex Plant in Amarillo to go off and replace that capability.

These are just some examples of some infrastructure pieces that I believe will be necessary to demonstrate—not just build, but demonstrate the operation of—to show that we do have a responsive infrastructure, an infrastructure that can respond to national needs.

The advisability piece of your question might be best deferred to my Defense Department colleagues who will be joining you on the second panel. But I would say there is a consistency in what I just said and in the plans that we submitted to Congress on that front.

With respect to the National Nuclear Security Administration, the work we do is work on nuclear weapons, taking care of our

stockpile; it is providing the propulsion systems for our submarines and aircraft carriers.

It is about protecting nuclear material, so they do not get in the hands of terrorists. And it is providing the capabilities to respond to nuclear emergencies, including the emergency we have right now. It would be hard for me to imagine that that could not possibly be national security work.

In addition to those four core mission areas, the entire national security mission areas, also assist the Government in being able to respond to other events, providing the capabilities to help the Missile Defense Agency knock a satellite out of the sky, which we did do 3 years ago with the Missile Defense Agency.

It was the NNSA's classified supercomputers that helped provide the trajectory, direction, and verified and validated that when the satellite was hit, it wasn't just hit; it was a hydrazine tank that was in the satellite that was hit, which was an ultimate mission.

So my view is that that is national security work through and through. And I will leave it at that, sir.

Mr. TURNER. Ms. Sanchez.

Ms. SANCHEZ. Thank you, Chairman Turner.

I also am concerned about the money side of what is going on, as we discussed before, Secretary.

One of the impacts is the inability to remove all the highly enriched uranium from Belarus, as promised, by 2012.

Are you concerned about those reductions? And has this impacted our efforts to secure nuclear materials?

And how has this impacted your other non-proliferation programs? Since a lot of the funding—I am sorry, did you say something?

Mr. TURNER. Yes, we just wanted to note that Ms. Harrington is then going to join the panel for the purposes of the transcript.

Ms. SANCHEZ. Oh, okay.

Okay.

So, back to my question.

What is going on? What do we need to worry about here?

Secretary D'AGOSTINO. I will start the—and ask my colleague, Anne Harrington, who runs the day-to-day of the non-proliferation program for me.

We are deeply concerned about the reductions we had, particularly in fiscal year 2011. We had a very significant increase from our fiscal year 2010 request, specifically directed to work off of our goal, or the President's goal, of securing nuclear material, vulnerable nuclear material, within the next 4 years.

And that required a sizeable increase in resources. We do have the scope of our work well-identified. You mentioned one of the countries. There are a number of others that we are working on right now as well.

Without these resources, and of course we are 6 months into the fiscal year right now, without these resources, what we have been doing is, essentially, doing what I would call day-to-day program management on this to try to minimize the impact on the specific projects we have of securing this material.

I will let Ms. Harrington deal with the specifics of the countries and the like.

So, Anne.

Ms. SANCHEZ. Welcome, Ms. Harrington.

Ms. HARRINGTON. Thank you. Thank you, Chairman and thank you, Ms. Sanchez.

The impact of the continuing resolution has been minimized to this point by a lot of active and almost daily review of budget allocations within the defense nuclear nonproliferation budget.

We have tried our best to maintain an aggressive schedule for removing and protecting the vulnerable materials that have been identified around the world, but we are rapidly approaching the point where the trade-offs for continuing that very forward-looking schedule will become more and more difficult to maintain.

For example, we are confronted with choices such as do we not deliver a detector for an Air Force-launched satellite that gives us our only capability to detect nuclear detonations around the world? Anywhere from the ground through space.

Or do we reduce our efforts to install radiation detection equipment at container seaports around the world as we have been directed by Congress?

Or do we implement other programmatic slowdowns or eliminations that would cause us to reduce capabilities in one aspect or another?

But we have tried very hard, so far, because we realize we all need to make a contribution to reducing the deficit. But as the Administrator pointed out, these are national security trade-offs that we are making, and I would be untruthful if I were to say that the current situation has had no impact.

Thank you.

Ms. SANCHEZ. Thank you.

I have a question for Dr. Triay.

There was a lot of money put in the stimulus to work on cleanup. I have a lot of colleagues who say that that stimulus money wasn't spent well or its purpose wasn't very well defined.

Can you talk a little bit about those particular monies and what progress you have made with those monies?

And what challenges still remain for cleanup?

Secretary TRIAY. Thank you very much.

I believe that the Recovery Act, the portfolio of the Environmental Management program has been extremely well defined.

We selected activities in the portfolio for which the Environmental Management program has a proven successful track record. The regulatory framework was well defined and we had contracts in place, so that we could immediately put people to work.

Bottom line is that we have been able to deal with 260 of the excess facilities in the weapons complex. And we have been able to deal with 8,000 cubic meters of transuranic waste and 85,000 cubic meters of low-level waste.

Two million tons of milling and tailings, and with respect to the amount of active footprint area reduction, as I was saying before, we have been able to decrease the footprint by 30 percent so far, from over 900 square miles of active cleanup down to, by the end of 2011, 540 square miles.

We think that not only we are going to meet the Administration's goal of 40 percent reduction by 2011, but we are going to surpass it.

At our Hanford facility, we are looking to surpass the 40 percent goal to over 50 percent; at our Savannah River site, we are going to reach over 60 percent.

So I believe that the work that we have done in the Recovery Act program has really assisted the complex, the Department of Energy complex, to accelerate cleanup activities and demonstrate the progress that can be made due to these economies of scale.

Ms. SANCHEZ. Great. Thank you, Mr. Chairman.

Mr. TURNER. Mr. Franks.

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

Secretary D'Agostino, I guess I will start with you, if you don't mind.

I know that one of the five campaigns of the National Nuclear Security Administration is readiness, and I understand you have got a lot of things to keep track of. But one of those elements, of course, of readiness, includes the production of the critical nuclear weapons component of tritium. And the GAO report recently said that the sole U.S. production facility was leaking large amounts of tritium into the cooling water which, in my mind, potentially compromises that source and it being our sole source, and adds to the concern over a shortage of tritium.

And I guess my first question is, how is this shortage of that key ingredient being resolved? And is the request for $142.5 million for the readiness campaign sufficient to not only increase the tritium production to an acceptable level but, at the same time, address the other components of the readiness campaign?

Secretary D'AGOSTINO. Mr. Franks, with respect to your question on tritium, we had established an incredibly stringent permeation grade early on in the program to, what I would call, something that was probably physically impossible.

Mr. FRANKS. Not realistic, yes.

Secretary D'AGOSTINO. Yes, unrealistic.

And so we have realized, even after a check and a design on the TP bars, which are the tritium-producing bendable absorption rods, we have made an improvement in the permeation rates; in other words, reduce the permeation rates, but not to the level that we have had before.

So what that does, in effect, to make sure that we remain within our NRC, Nuclear Regulatory Commission, license piece is have a reduction in the number of tritium rods that we put inside each reactor core load at Watts Bar.

We don't have a near-term tritium problem. It will be 5 years, if we stay at this certain rate, before we end up having any concerns on tritium production.

And this gives us plenty of time to do a couple of things. We have a couple of backup plans in this area.

One of our backup plans has to do with using other reactors with the TVA [Tennessee Valley Authority], and we are entering into negotiations with them to use Watts Bar unit two and potentially

Sequoia, if we have to, which will more than cover the Nation's needs.

But we are also doing another thing, and that is modifying the environmental impact statement and taking a look at the license amendment to what will be a reasonable and still very safe tritium permeation rate to allow us to increase the number of tritium rods in each reactor core load.

So one of those two paths—first of all, there is not a near-term problem, but we are aware that if we continue down this path, we are going to need to do something different and we have kind of two tracks on resolving this particular case.

Mr. FRANKS. Well, I wish all questions could be answered that favorably. That is pretty encouraging.

Well, Mr. Secretary, let me then switch gears completely on you. I know that your testimony over the years here, that I have been here in this committee, has been, I think, dead on target, related to the potential of terrorists gaining some type of access to nuclear weapons, whether they develop them or someone gives it to them.

And one of the concerns that I have had lately, in addition to that, or I should say in specificity, is the whole concern that now there is indication that smaller warheads, very small warheads, 1- or 2-kiloton warheads, can be enhanced to emit greater gamma ray radiation that makes them a more potentially dangerous weapon in the hands of enemies trying to launch an EMP [electromagnetic pulse] attack against the Nation, or even in a given area.

So my first question is, is that, without getting into any classified origins, is that a concern that you have?

And secondarily, with all of the misinformation over Soviet, to use the phrase, "suitcase bombs," it seems like if anything would fit that category, or fit that description, it would be one of the small, 1- or 2-kiloton, warheads. And could they be enhanced for greater gamma ray emission? And do you see this as any sort of particular national security concern?

Secretary D'AGOSTINO. Mr. Franks, I would say that all of these items are of concern to us. We can provide a classified answer, to get into some of the specifics there. It would take a fair amount of effort to enhance one of these so-called suitcase devices in order to give it these special characteristics.

We are concerned about whether it is 1 kiloton, 500 tons, 10 kilotons, we are concerned with that whole range and that is why we have a program really focused on the material piece of the problem, obviously coupled with the Intelligence Community itself.

So, yes, I am concerned. I am concerned about all of these.

The smaller devices, of course, present different challenges with respect to finding these things, but at the same time, this is the reason why we have this full spectrum approach on our program.

In our nonproliferation program, we start off with the assumption that the information on how to make one of these things is out there. Not that it is or it isn't; I won't confirm that, of course, but there is an assumption that we would say information is out there.

Therefore, we have to focus on the material piece of this, protecting the material in its place, detecting illicit transfers of material across borders and land border crossings, getting rid of excess material that we may have, so it doesn't contribute to the problem,

and looking at ways to convert from high-enriched uranium to low-enriched uranium across research reactors and isotope production reactors that we have.

So I will take your specific question, which the answer would be classified and provide a classified response for the record.

[The information referred to can be found in the Appendix on page 167.]

Mr. TURNER. All right, sir. Well I am glad you got your radar out anyway.

With that, we recognize Mr. Larsen for 5 minutes.

Mr. LARSEN. Thank you, Mr. Chairman.

Secretary D'Agostino, what relation does your 2012 nonproliferation budget have to your 2011 nonproliferation budget? That is to say, what impacts will be on your 2012 budget for implementation if your 2011 request is not provided?

Secretary D'AGOSTINO. If the 2011 request is not provided, that puts us very far behind on our security work, for sure, in a number of areas. We will look to do it in a balanced way to make sure our highest priority things are completed in fiscal year 2011.

What that does is it puts an extra strain on the fiscal year 2012 budget and you will—I don't know if you have noticed, our fiscal year 2012 budget is slightly less than the fiscal year 2011 budget. And that is because in the fiscal year 2012 budget, we do not have $100 million increment in there for our work on the physical material disposition with Russia. There are a series of payments that go on with that.

So if we don't get the fiscal year 2011 budget and if we are trying to maintain our focus on securing material worldwide, without giving up the other elements of our defense nonproliferation program, those fiscal year 2012 resources would be severely strained and we would certainly not be able to honor the commitments we have made internationally and commitments we have made to ourselves, on securing this material worldwide.

Would you like additional information from Ms. Harrington?

Mr. LARSEN. That is good right now.

Secretary D'AGOSTINO. Okay.

Mr. LARSEN. I just wanted to thank the Chairman here, and the ranking member, for taking a lead on this letter that we put out in the last 2 weeks regarding the—I mean, the—not just the desire, but the need to look at this part of the budget as a part of the defense budget, as opposed to just another part of the energy budget.

And hopefully we will be successful in moving that forward.

A question for Dr. Winokur. With a short I?

Dr. WINOKUR. That is right.

Mr. LARSEN. Yes.

On page 18 of your testimony, you discussed the Hanford WTP and the three safety issues that you had found as a result of your hearing. I didn't really recall, from your testimony, what has been the follow-up? October 2010 were the hearings; we are now in March of 2011—or April 2011, perhaps 5 months is not long enough. But what has been the result of these three findings?

Dr. WINOKUR. Well, the first finding was to look at the mixing and transfer of systems.

Mr. LARSEN. Right.

Dr. WINOKUR. Because there was the concern that there might be solids building up at the bottom of vessels, which could provide safety concerns with criticality, exceeding flammable hydrogen gas and some operational problems with indexes themselves.

In December, the Board wrote a recommendation to the Secretary of Energy and would recommend that a large-scale testing program—actually during the hearing, the project agreed to a large-scale testing program.

And we wanted to make sure that I advised the Secretary about what we thought would be important in that large-scale testing program. So that when it went forward, we would have a clear resolution of issues and address the safety concerns.

Mr. LARSEN. On that point, Ms. Triay, if that is going to happen, is that going to happen within the existing requested budget? Or is that going to add costs to this particular program?

Secretary TRIAY. No, it will happen within the request that we have made for fiscal year 2012.

Mr. LARSEN. So 2012.

Secretary TRIAY. Yes.

Mr. LARSEN. Okay. Okay. Good.

Dr. Winokur.

Dr. WINOKUR. And I think the second issue we talked about were concerns about hydrogen in pipes and ancillary vessels. We were worried about detonations.

Basically, what happened was the project is using a different strategy to address this problem, using what is called a Quantitative Risk Assessment. It is the first time that the Department has used this approach and it is a different approach.

The Board is waiting, I think April, hopefully this month, we will see from the project, basically, the validation of this methodology, the results and basically, hopefully convince ourselves that we are comfortable that hydrogen-related issues in pipes and vessels will be appropriately addressed.

And the last issue, of course, deals with the tank farms themselves. I think at the hearing, the Board made the point that we have to look at this as an integrated problem, and the integrated problem is that not only does this plan have to operate effectively, but the tank farms need to be able to control, characterize, and transfer waste into that facility that it really can handle.

Mr. LARSEN. Yes.

Dr. WINOKUR. And that, I think, is an ongoing problem and certainly we have met with the Department on that. I think that is something that you should look at as an issue that we will be addressing over the next several years.

Because I think the project will continue to refine what the waste acceptance criteria is that that plant can receive, and the tank farms will continue to adjust and improve and understand the capabilities they need.

Mr. LARSEN. Good. Thank you.

Thank you, Mr. Chairman.

Mr. TURNER. Dr. Fleming.

Dr. FLEMING. Thank you, Mr. Chairman.

Yes, I have a couple of questions for Mr. D'Agostino.

With respect to the Nuclear Posture Review, Section 1251 Report to Congress, and NNSA's Stockpile Stewardship and Management Plan make many commitments to modernize America's nuclear arsenal and the complex that sustains it.

These commitments include sizeable funding plans.

Please discuss the funding increases in fiscal year 2012 in the budget request and the intent and purposes for those additional funds.

Secretary D'AGOSTINO. Mr. Fleming, thank you for the question.

We have increases across three broad fronts. The first broad front is in what we call Directed Stockpile Work. This is direct work on our nuclear weapons themselves, the surveillance activities, which is the activities needed to look inside the warheads to see how they are doing, particularly the older warheads themselves.

We are very interested in how they are aging.

Those resources went up to about $240 million from prior years, where they are steady state at about $80 million per year. So it is a significant increase, percentagewise, in surveillance activities and work on our Directed Stockpile Work to finish the production rate on the W76 [thermonuclear warhead] life extension, to do the initial studies and do the first production unit on the B61 bomb and to start the study on the W78 warhead study, which is something that we know we will have to address in about 10 years' time. And it does take a little bit of time to do the initial preparatory work.

The second area is in our science capabilities, because the scientific capabilities allows us to maintain the stockpile without underground testing, so work on a supercomputer platform, for example, to allow us to use modern codes to do accelerated aging tests.

The final area, which is our biggest increase, particularly when we compare it to fiscal year 2011, a 21-percent increase, is in our infrastructure investments. These are investments, not only at the uranium and plutonium facilities that you have heard mentioned in the hearing, but also across our enterprise, particularly at Pantex, the High Explosive Pressing Facility, which we will be getting underway very shortly, we have just received bids in hand. We will make the decision very shortly and getting this facility up and running by the year 2016.

So, some of that increase supports that activity.

It also includes an activity in fiscal year 2012 in Tennessee to do what we call Facility Risk Reduction. Chairman Winokur described some concerns. He is aware of some concerns that we have in the 9212 building, which is the Nation's only uranium-capable building, to do the kind of processing the Nation needs to do. Not just for the stockpile, but for the non-proliferation program.

We are spending upwards of $75 million over the next few years, just to keep that capability going, so that when the Uranium Processing Facility comes in play, we know we have—I would say we are almost limping along to get to the end.

So it is across those three broad areas on the stockpile that we are working on.

Dr. FLEMING. Okay.

One follow-up question, what are the most significant challenges in that process that you see?

Secretary D'AGOSTINO. Two significant challenges, as I see it. We have great people. They are very capable. They have been working the stockpile for many years. But the two biggest challenges that I see are in being able to recruit the next generation of folks, so that the people that we have now can train this new generation, because we have a golden opportunity for the next 15 years, and we are doing a tremendous amount of work.

And this is the time to get that next generation up and running. Because the next generation are the folks that are going to take us from 2025 out to 2045, 2050.

And again, this isn't just about nuclear weapons. Of course it is taking care of the stockpile. But that next generation will do that vital nuclear counterterrorism work; because the best person to have on your team to take apart an improvised nuclear device is the weapons designer that knows how to put it together to begin with.

So, we want to make sure those people are connected up.

So, the people piece is the first one.

The next challenge is project management. We have, the Chairman mentioned, a number of very significant, complicated facilities that we are going to be building over the next 15 years. We have to make sure that our project management house is in order and running well, and has all the elements of nuclear safety, project management principles, and the like.

We started down that road to address this problem. You have to address it early, because the time to catch the problem is early on in the project, not after you have started; not after you are done with the design and are trying to pour concrete.

So the things we have taken to move early is get our project management policy changed—and I mentioned one thing earlier, which is let us finish the design work before we go off and start pouring concrete—doing sound cost estimates in between each of our critical decision pieces. And we have done this. We have changed our organization.

Neile Miller has brought a tremendous amount of management expertise into the organization and has looked at this and said that is, project management is the piece. We need an office that is fairly focused on this and we need to recruit the best person to run that office. We are actively looking for the best person we possibly can to run this particular office, to get this project management piece right.

We have had some early success, but we need some longer success. And we have had early success that the Project Management Institute has awarded to some of our projects. One project in particular, in Anne's program, the distinguished award, which is the first time ever a federal agency has ever won this award, for one of Anne's projects. The National Ignition Facility has been running steady state and has executed. And they have won, there, the PMI [Project Management Institute] award of the year, last year, for the most complicated project.

But our challenge is not the past. Our challenge is the future. And that is what we are going to focus on.

Dr. FLEMING. Okay. I thank you, Mr. Secretary. I yield back.

Mr. TURNER. Ms. Sutton.

Ms. SUTTON. Thank you, Mr. Chairman.

Thank you to all the witnesses for being here today.

My questions are going to focus on the Hanford Waste Treatment Plant. The Hanford complex is the biggest and most expensive cleanup project in the DOE complex, and perhaps the most important.

It is also my understanding from the testimony here today and information that I have gathered that the project has just been plagued with cost increases, delays, and technical issues.

So, Dr. Winokur, I know you talked a little bit about this, but if you could just give us, in quick, order a short rundown on the present concerns with regard to Hanford.

Dr. WINOKUR. Well, let me begin by providing some context as to why I think it has become very challenging.

The Board has actually committed to the early integration of safety and design at these facilities.

I think we have already mentioned the fact that if you integrate things early—and I think Tom mentioned this—before you pour concrete or before the design is largely complete, you can address the issues. If you have to go back at a later time and try to retrofit safety, it is very hard.

Now, what happened with this project is it underwent a major redesign in 2009. When I say major redesign, I mean that design criteria in the project changed, and this raised safety issues for the Board.

We began communicating with the Department about these safety issues as early as January—well, really, immediately after, but since very significant communications beginning in January of 2010.

Then we felt in order to really focus these issues—and you have asked me what those issues are—we had to have a hearing.

Ms. SUTTON. I understand.

Dr. WINOKUR. At the hearing, the three issues that I think we really focused on were the mixing systems. Basically, this facility separates waste into a high- and a low-level waste stream.

In the black cell region of the facility, you have no access for 40 years while the plant operates.

One of the things you have to do is be able to mix solids, mix the actual radioactive waste, so that it can be transported and then operations performed on it.

The Board felt that, when it looked at the new design criteria that the accumulations of solids was part of that design criteria. It raised a safety concern for us.

Ms. SUTTON. I appreciate that. I want to speed this along because I have a lot of questions. So, I really appreciate that.

I understand the mixing concern. There were also concerns with respect to the hydrogen gas figures, as I understand it, and also criticality concerns, perhaps.

So, if those are the things that we are looking at right now in regard to Hanford, would you agree that those are the major concerns?

Dr. WINOKUR. Yes, those are major concerns; that is in the written oral testimony.

Ms. SUTTON. Okay. Then let me go a little bit further here, because I also have some concern about the safety culture at Hanford. I don't know if that is a concern for you.

Would you say that is a concern, Chairman?

Dr. WINOKUR. It is a concern for us.

Ms. SUTTON. Okay. So, do you think that enough attention is being paid or has been paid to safety and quality at Hanford? You talked about how, at some point, it became a big issue.

I mean, I know that, for example, a former research and technology manager has alleged that he was removed for raising safety and technical concerns.

I guess one question I would have: Has there been an investigation into that matter?

Dr. WINOKUR. Yes, there has been. The Board received a letter in July of 2010 from Dr. Walt Tamosaitis, who raised concerns about the safety culture on the project.

So the Board believed he was a credible individual who had played an important role at the project. The Board felt it was necessary to conduct an investigation.

I mean, whenever the Board gets whistleblower or other information, other concerns, the Board always investigates. Either we investigate it ourselves, or we turn it over to the IG [Inspector General].

A natural evolution of that letter was to begin the safety culture investigation, and we had a hearing.

So, the Board wanted to be sure that what happened at the hearing didn't have safety culture problems. In other words, the witnesses felt very comfortable with sharing information with the Board.

So, we certainly looked at that. Subsequent to that, we have identified other issues.

Now, I can tell you that the Board hopes to share the information of that investigation with the safety culture, the waste treatment plant, with the Secretary of Energy in the near future.

We do have concerns about safety culture. We will be identifying them for the Secretary's consideration.

Ms. SUTTON. I appreciate that, and I will look forward to seeing more information about the safety culture.

Can you just share with me, in the very brief time we have left, what do you look for when you evaluate the safety culture?

Dr. WINOKUR. Well I think the crux of the safety culture is an empowered workforce, people who are comfortable with raising concerns with their management so that you don't have the messenger being shot. I think that is really what adds to the safety culture.

Even though you measure it in the way that the work is performed and how empowered they are, safety culture is driven by leadership. So we always have to look at that aspect of it.

Ms. SUTTON. Thank you.

Mr. TURNER. Mr. Brooks.

Mr. BROOKS. Thank you, Mr. Chairman.

This question is for Dr. Triay. In looking at your bio, it says that you lead the largest, most diverse and technically complex environmental cleanup program in the world, including enough radioactive waste to completely fill the Louisiana Superdome.

In that context, it would seem, then, that we should be seeking appropriate storage facilities, not, as a country, seeking to close them down.

President Obama indicated that he does not intend to pursue Yucca Mountain as a long-term repository for high-level waste. Yucca Mountain remains designated by law as a repository for high-level radioactive waste.

In your judgment, would Yucca Mountain serve our repository needs?

Secretary TRIAY. As the Secretary has testified, we believe that the studies that are going to be conducted by the Blue Ribbon Commission will inform any decisions moving forward that the Administration will make with respect to high-level waste repositories.

I will just point out that the waste we have in the Environmental Management complex is low-level waste, transuranic waste, and high-level waste.

The Waste Isolation Pilot Plant has been operating safely for 10 years and has been able to disposition over almost 80,000 cubic meters of transuranic waste since it started working. We have very viable options for low-level waste.

As we progress in taking those lessons learned, those will all be taken into account in the Blue Ribbon Commission studies. I personally have been asked by the Blue Ribbon Commission to give them the lessons learned from my time as the field manager of the Waste Isolation Pilot Plant, dispositioning of transuranic waste.

So, I believe that we are committed as a country, ultimately, to have a repository for high-level waste. We are awaiting the Blue Ribbon Commission recommendations to the Secretary in draft form in the summer and finalized in the next calendar year.

Mr. BROOKS. Do you have a judgment as to when studies on Yucca Mountain first began and how many have been conducted?

Secretary TRIAY. The Yucca Mountain project is not part of the portfolio in the Environmental Management program. But I understand your point that——

Mr. BROOKS. We are talking many years, even a decade or so?

Secretary TRIAY. Yes.

Mr. BROOKS. Why is another study needed?

Secretary TRIAY. I believe that the studies that you refer to with respect to Yucca Mountain have been specific to the geohydrological conditions as well as how to isolate the waste.

The Blue Ribbon Commission is looking, I believe, more broadly as to what are the options for a high-level waste and spent nuclear fuel.

They are not looking specifically at the geohydrological conditions of any particular site. But they are looking at the process that got us to a point that the Administration felt that it could not move forward with the Yucca Mountain decision.

Mr. BROOKS. What insight can you share with us that would help convince us and the American public that the Administration's stance with respect that Yucca Mountain is motivated more by capturing Nevada votes or Senator Reid's capturing Nevada votes rather than sound public policy?

Secretary TRIAY. I have been working, like you mentioned, in the field of nuclear waste management for over 25 years.

The main aspect of moving forward with dispositioning of radioactive waste—whether it is low-level or transuranic, high-level waste, spent nuclear fuel—is the intent of the community that surrounds that particular site to move forward and deal with the mission that has been delineated for that particular repository.

That is what I have learned from being a field manager at the Waste Isolation Pilot Plant in Carlsbad, New Mexico, for 5 years before coming to headquarters in the Environmental Management program.

I believe that part of what the Blue Ribbon Commission is going to look at is what is the process that would get us to success, rather than starting and then having to stop and deal with extensive periods of litigation because we have not had a clear community as well as national interest merge with respect to a focus that we need to have in this very difficult field of dispositioning radioactive waste.

Mr. BROOKS. Well I would say my time is expired.

Thank you, Madam Secretary.

Mr. Chairman.

Mr. TURNER. Mr. Thornberry.

Mr. THORNBERRY. Thank you, Mr. Chairman.

Secretary D'Agostino, I think you made an important point a while ago that it is important for the U.S. to have the best nuclear capability for a variety of reasons; keeping our own nuclear deterrent, but also having that capability for a variety of contingencies is necessary that people, programs, and facilities all contribute to having that level of excellence where we want it to be.

You mentioned a few minutes ago some of the challenges on the facilities part of it, and a 21-percent increase, I think you said. Of course, that comes off what some people would argue as decades of neglect. So we have a lot of catching up to do.

One of the questions—let me ask this. Can you tell me, over the next 5 to 10 years, what percentage of your construction budget is devoted to the facility at Los Alamos and the facility at Y–12?

Secretary D'AGOSTINO. Well, let us see. In a typical year—I am going to try to get my way to answering you directly.

I think, typically, when we were a steady state and we don't have these large facilities in our program, we have spent—recapitalizing at the rate of about $200 million to $250 million to $400 million a year, depending on what facilities we have because we have, obviously, a multi-billion dollar set of infrastructure to take care of.

The two line-item projects that we have right here are probably in the neighborhood of $300 million to $600 million a year, depending on which over the next 10 years as we look ahead.

So, what we have got, I would say about these two facilities will comprise more than 50 percent of the normal recapitalization that we would be doing.

I would have to check the statistic table I have here in my book to get the exact percentage. But it is a significant share.

Mr. THORNBERRY. And it would take about how long to build?

Secretary D'AGOSTINO. These large facilities, we feel, are going to be 10-year construction activities from the initial design work that has to get done, defining the performance base line, and then actually building them.

Typically, it takes about a year and a half to 2 years to transition these into operations.

Mr. THORNBERRY. Yes.

Secretary D'AGOSTINO. A normal recapitalization project like the high explosive press is more on the order of about 3½ years or so.

Mr. THORNBERRY. Yes. It just seems to me an enormous challenge to have—and we have had these challenges since I have been on this committee.

Whether it was NIF [National Ignition Facility] or whatever, we have had some very expensive facilities——

Secretary D'AGOSTINO. Right.

Mr. THORNBERRY [continuing]. As part of NNSA.

Then we also have kind of the smaller, more routine things in competition with the same dollars.

The third thing we have is trying to transition the complex to a smaller footprint where it makes more sense with the number of weapons and the kinds of activities we are doing now.

All three of those priorities seem to me to be competing for the same dollars.

I guess I am curious what you can tell us about how you sort that out——

Secretary D'AGOSTINO. Okay.

Mr. THORNBERRY [continuing]. Year in, year out. Ten years to build a building? I mean, I know it is a complicated building, but good heavens. Surely, there has got to be a better way.

Secretary D'AGOSTINO. We are looking at better ways on these things. It is one of the challenges that we have been given.

Don Cook, who is the deputy administrator, is looking at this particular challenge. He is exactly the right person for this job.

He was the individual that was in charge of a $550 million facility at Sandia many years ago and brought that facility in under budget and early because of the way he approached the construction.

He has, in fact, directed both of our M&O contract partners at Y–12 and Los Alamos to look for ways to leverage each other's capabilities there.

In some cases for these facilities, we have similar business teams working on these projects, particularly in the early design phase.

How do we integrate those two activities so we don't relearn the lessons from before?

The one thing I would say on how do we balance priorities—I think it is a very good question.

I recall very specifically when we were in the fiscal year 2011 budget formulation process internally within the Administration and the same in the fiscal year 2012 process taking a look at the out-year resources we have dedicated not to these facilities, but to what I would call our base workload.

I asked for significant increase in resources for what I would call just your normal recapitalization. I received support from the White House for that.

So this 10-year plan does have that in there. The challenge will be, of course, making sure that it stays in that account so we don't keep adding to our deferred maintenance problem.

Many of the things that we want to do, particularly at Y–12, for example, serve similar purposes: recapitalizing and shrinking of the footprint.

You know, this is always one of those things where, 10 years from now, it will get better. But we do have a plan, and we have to execute the plan now, sir.

Mr. THORNBERRY. Yes, and shrinking the footprint reduces security costs and has a variety of benefits.

I agree. We have got to stick with the plan. It just looks challenging to get from here to there, for me.

Thank you, Mr. Chairman. I yield back.

Mr. TURNER. Thank you. We will go to Mr. Bishop. Then after that we will have a second round for questions if members have second questions for this panel.

Mr. BISHOP. Well, Mr. Chairman, I see you have changed my nameplate. I was expecting to use Mr. Scott's five and then run down to mine and get another five. Apparently, you have closed that avenue of abuse of the process to me.

I actually am here to listen to this panel and have questions for the next one. Thank you.

Mr. TURNER. Thank you.

Then turning to our second round, returning again to Mr. D'Agostino.

The B61 bomb is a key capability that supports the U.S. contribution to NATO's [the North Atlantic Treaty Organization's] nuclear alliance and our extended deterrence commitments.

The NNSA budget request contains a significant increase in funds for the B61 Life Extension Program and includes plans for NNSA to begin engineering development activities, Phase 6.3, in fiscal year 2012.

However, the cost and design study of Phase 6.2 and 6.2A is not yet complete, and the Nuclear Weapons Council will not meet until later this year to authorize entry into the next phase.

What gives NNSA confidence that it can proceed into engineering development? How is NNSA managing schedule costs and risk to meet the delivery requirements for a first LEP life extension production unit by 2017?

Secretary D'AGOSTINO. Mr. Chairman, the approach we are taking is what I would call is very active project management. This is a project.

Just like an infrastructure project is a project, this is a project. It has a defined cost, scope, and a schedule basis.

You correctly point out that we are not—we have not yet completed our, what we would call design work, if you will, to determine what the exact cost will be.

What we have done in the past is, you know, parametric analysis on estimating what the future cost will be. We will make adjustments at the end of this calendar year once we have the actual costs for this project.

One thing that is clear with—at the Nuclear Weapons Council: Mr. Ash Carter is the Chairman of the Nuclear Weapons Council.

We just had a meeting. We have regular meetings, but our most recent one actually delineated and lined out how we are going to get ourselves to a final decision point on this life extension.

We are holding firm to the 2017 date, not because we think that is a good—a date we pulled out of the air. That is a date that is required because of our concerns on some components on this system.

So without a doubt, we are going to be hitting that date; we have to. The Nation's security on this warhead demands it.

The question will be, can we do all that we had hoped to do on this warhead and take advantage of this opportunity?

We think it will be challenging, but doable. That is our plan over the next 6 months, is to really put the meat and potatoes behind that particular statement on exactly what is going to get done.

Mr. TURNER. Dr. Triay, last year, our committee authorized the Department of Energy to establish energy parks on former defense nuclear facility sites.

This is an idea way for the Department to leverage communities and have legacy nuclear and other technical expertise and transition them to focusing on new energy research and development.

Can you provide us with an update on what the Department is doing in establishing these energy parks and whether any candidate sites have been identified?

Secretary TRIAY. I am pleased to do that, Mr. Chairman. On February 17th, 2011, the Department established an Asset Revitalization Initiative Task Force that is led by the Director of Legacy Management, Mr. David Geiser.

It has representation from all the elements in the Department, especially all of the energy offices.

In addition to energy parks, the task force is going to look broadly at any beneficial reuse that the communities are interested in pursuing with the vast tracks of land that we have cleaned up as a result of our work.

So, in August of this calendar year, that task force is going to report to senior DOE management on a path forward on the Asset Revitalization Initiative.

At that time, we should be able to clearly delegate to you one of the strategies that are going to be utilized and the advantages that different approaches for beneficial reuse, such as energy parks, have.

Mr. TURNER. Thank you.

Mr. Larsen.

Mr. LARSEN. Thank you.

Dr. Winokur, in your testimony in page 12 and 13 and a little bit beyond that, you discuss the nuclear security infrastructure in some of our facilities.

So I am curious: In the Board's assessment, what challenges remain yet with the design of the CMRR and the UPF at Y–12, and how many issues have you assessed been resolved? How many have you assessed are yet outstanding?

Dr. WINOKUR. Well, with the CMRR facility, as you know, or may not know, the Board did a congressionally directed certification of that facility.

Actually, both the Board and NNSA independently performed the certification in September of 2009.

At that time, the Board was comfortable that the safety strategy had been developed for that facility that the controls had been

identified and that a path forward to implement those controls in a final design was in place.

So, I think we were comfortable with that facility and how it was proceeding. But the caution always was there is a lot of, you know, details that have to be filled in to actually build this thing and get to a final design.

The concern right now, from the Board's point of view, and is becoming a recurring concern, is that the NNSA is looking at, perhaps, a change in the safety strategy of the facility. They are going to do that by, perhaps, reducing the material at risk for the facility.

That is certainly their decision. The Board does not, you know, weigh in on that.

But if they do change the material at risk in the facility, they are also considering a change in the safety strategy or the safety controls themselves, perhaps downgrading them.

So, I think this thing is, right now, in a situation where we really have to get clearer. We wrote a letter to the Administrator in February asking him to provide a little more detail to us about exactly how NNSA is going to proceed with this facility.

So, we are kind of in a situation right now where we are waiting just to get, you know, recalibrated in terms of what the Administrator wants to do with that facility. Then we are going to have to, in a sense, relook at what the safety controls are and convince ourselves are adequate.

The UPF facility down at Y–12 was a facility that the Board had some initial structural concerns about. I think most of those are resolved.

But where the Board has had a little bit of difficulty is that—and I think the Administrator said this—they didn't want to make some decisions about the strategies until they were 90 percent, 95 percent done with the design.

The Board felt that, you know, in waiting to do that, which seemed prudent, that some of the steps along the way, some of the preliminary design steps were not actually done.

So the Board is a little bit uncertain, to some extent, in that facility about exactly what the safety strategy is going to be going forward. We need to work with NNSA to get clear about that.

Mr. LARSEN. Yes. This gets to some of the questions Mr. Thornberry was asking, you know, these big projects, we want—everyone wants to see them get done right, absolutely.

So, in that vein, Mr. Secretary, do you have some response for us today with regards to what the Board has contacted you about?

Secretary D'AGOSTINO. I don't have concerns. I would use different words, but the Chairman uses the words that he feels is appropriate.

I don't believe—the word "downgrade" is not something we apply to safety, whereby appropriately, you know, safety given—the right safety for the right risk.

We have the responsibility in the executive branch to make sure that we factor in all the pieces together, nuclear safety being a primary concern of ours.

When we go off and take a look at what it would take to build a particular safety, we assume quantities and material at risk. As time goes on, we get the opportunity to refine that.

If there is no plutonium in the building or if there is half as much plutonium in the building, that changes the safety analysis and problem and, therefore, allows us to take a look, at does that potentially reduce costs?

Of course, the Board is with us every step of the way in examining this and providing independent input. Frankly, I value that independent input——

Mr. LARSEN. Can I ask you a question? Because I don't want anyone to think there is a discussion about what the definition of "downgrade" is or anything like that——

Secretary D'AGOSTINO. Right.

Mr. LARSEN [continuing]. Or anyone is misconstruing anything like that.

Secretary D'AGOSTINO. Right.

Mr. LARSEN. Just in the sense, is it a reasonable request the Defense Nuclear Facilities Board is making to NSSA about Y–12 and about CMMR?

Secretary D'AGOSTINO. Yes, the request we are planning on giving the Board the information they need, absolutely. We always do that.

We want to do it in a way after we have taken a look at the analysis ourselves.

Mr. LARSEN. Yes, excellent. Yes, great.

Thank you very much.

Mr. TURNER. Mr. Franks.

Mr. FRANKS. Well, thank you, Mr. Chairman.

Dr. Winokur, you know, we have all been following the tragedy in Japan and the—I think it is the Fukushima power plant, if I remember the nomenclature correctly.

It occurs to me that, in the midst of all of that, that they probably had time to, you know, reinsert their control rods in the reactor. But the ancillary problem of losing their backup generators because of the—I think because of the tsunami—left them with battery power and, of course, with the reactor not in generation mode, they had to rely upon the grid, which is not a shocking thing. When that wasn't available, that became a very serious challenge to them.

Some of us on this committee, you know, have endorsed and introduced legislation to do everything we could do, to protect the grid from potential, you know, electromagnetic interference, whether it is manmade or geomagnetic, and the loss of the grid is a great concern to me.

I guess I am asking you, do we have any protocols in place that would render us fairly impervious to such a challenge here?

I know that the Administration has called for a higher capacity battery backup. But those batteries do run down. I mean, you know, there is just—I mean,—there is certainly—I am all for what they are saying.

But is this going to be enough? If we should lose our grid, what are the implications for, potentially, nuclear power plants in full generation mode at the time?

And what are our abilities to cold-start if we have to? I realize this is kind of getting a little out of your lane. But I think it is primarily still something you can address.

Do we have the ability to respond effectively to a like issue? Even though I know we have a little better—we are not quite as vulnerable to what happened in Japan.

But can we respond to that effectively?

Dr. WINOKUR. Well, let me begin by saying, as I have said in my oral statement, that the Secretary of Energy has already tasked with the Department of Energy to take a look and see, you know, whether or not they had an emergency response, or will have an emergency response in place, to address the serious either design-basis accident or beyond-design basis accident.

What you are saying is very true. You definitely need backup power. Maybe there will be some thought given to whether it needs to be doubly redundant or not.

You need water for fire suppression. You have to make sure you have guaranteed sources. And, probably just as importantly, you need a very robust defense in depth.

So, when the Board talks to the Department about safety, we usually use the word "adequate" protection of public and worker safety.

But I think when it comes to the response to the backup, you really have to think of it as being robust and bullet-proof. That is one lesson.

I think the other challenge for the Department is that emergency preparedness for them is really a very significant issue because you have sites like Savannah River where you have tritium facilities, which are in close proximity to facilities that handle plutonium and highly-enriched uranium that are near tank farms which have toxicological and radiological waste.

So, if a serious accident occurs, there is going to have to be a very carefully orchestrated plan and a command center to determine where the damage is and whether the workers should, perhaps, shelter in place or try to vacate the area. I mean, you don't really know.

So, I think it puts a real premium, and I think the Board's been interested in this for years. We became even more interested in this when we saw the BP spill out in the Gulf, and the thousand-year flood at Pantex that really, there is a lot more work that needs to be done in this emergency response and emergency preparedness area.

Mr. FRANKS. Let me just encourage the Administration, and you, Dr. Winokur, and others to take a good look at the Shield Act that we have put forth to protect the grid from EMP or geomagnetic-related damage because of the criticality of the grid to back us up in these situations. You know, it is hard to sometimes realize all of the cascading effects that occur.

I mean, if you run out of diesel fuel for whatever you have or your batteries run down and with the plant being not in full generation mode to be able to maintain its own circulation, maintain its own cooling capacity, then that becomes something to look at carefully.

I hope you will do that because it seems that there is a pretty strong consensus that we need to do this, even though it is just one area.

But I think that some impetus on your part or some encouragement on your part might help it. I hope we do that.

Mr. FRANKS. Thank you.

Dr. WINOKUR. Thank you.

Mr. TURNER. Ms. Sanchez.

Ms. SANCHEZ. Thank you, Mr. Chairman.

Dr. Winokur, I have a question along the line of what Mr. Franks just asked.

Can you refresh my memory about contingency plans? Let us say, for example, I live in the Southern California area near something called the San Onofre power plant where Southern California Edison is the one that is drawing the power from there, a private company.

It sits on the ocean, probably on what we would consider county property right within the sphere of influence of a public municipality that has its own government called San Clemente, with a federal highway running alongside it, an interstate highway, and some local arterials and state highways connecting everything.

So, I know we plan for this, and I know we have plans, and they are probably adequate. But in light of what happened in Japan and, really, a perfect storm coming together and overwhelming what probably their contingency plan is, who is in charge of that contingency plan?

Who oversees it? Are we going back and looking at every power plant we have in that way and saying, what would happen with an overwhelming situation?

Who is in charge of making sure that barriers are correct or things need to be heightened or spent rods are outside in a more vulnerable area and highways aren't adequate to evacuate people we need to evacuate if there is that type of a population right next to the reactors?

Dr. WINOKUR. Thank you. It is a little bit out of our jurisdiction. But I do want to, hopefully——

Ms. SANCHEZ. Who would I ask?

Dr. WINOKUR. The Governor of the State. I don't know.

Ms. SANCHEZ. Well, that is exactly what—you know, is it the Governor? Is it the State? Or the feds?

Dr. WINOKUR. I can't really comment. But I would like to make a relevant comment from the Safety Board's point of view because we do have responsibilities for defense nuclear facilities and DOE sites.

I want you to know that what I lose sleep over at night is what you are talking about.

When I look at facilities and I try to rate which ones I am the most concerned about, the first thing I say to myself is, "Which site is near a population center? Which site, if I have a problem, is going to more immediately impact the public?"

So, there are some places like the Nevada Test Site where, even if there was an accident, which would be a very unfortunate thing, we are still pretty far from a population center. I feel more confident, and I know that I can confine the emergency response in the site.

But there are others where that can't be done. I think those are the ones that we need to work with the Department on to ensure

that the emergency response and emergency preparedness not only, probably like you are suggesting, includes the site, the Department of Energy, but also—I am sure that the Department does this—the interacting community around it.

Ms. SANCHEZ. Do you feel comfortable that the Department of Energy and Department of Defense facilities have the contingency plan for the overwhelming scenario?

Dr. WINOKUR. You are referring to the beyond design basis accident?

Ms. SANCHEZ. Probably.

Dr. WINOKUR. Well I think that more work needs to be done in that regard.

If you look at the Code of Federal Regulations 10 CFR 830, which really defines safety at these facilities, it actually does direct the Department to look at the beyond design basis accidents.

I think the Board would probably benefit. I think we will, by taking your question to heart and having a meaningful discussion with the Department of Energy about how those kinds of assurances can be provided.

Ms. SANCHEZ. Thank you, Doctor. I know the Secretary wanted to——

Secretary D'AGOSTINO. Yes, ma'am.

You asked who is responsible. In the Department of Energy, my organization is responsible for the emergency operations organization and responding to emergencies in the Department.

Establishing that infrastructure of people and capabilities and the communication system and the teams that go out and deploy and go check, what we do—first of all, one of the things we are doing is moving nuclear material out of areas where we have large populations.

The inventory of plutonium at the Lawrence Livermore Laboratory in Livermore, California, is a prime example of that.

We recognized 3 years ago that we had a population center that was growing around our laboratory and that we had two sites in the country that were working plutonium.

We said, "Well, this is very special material. We want it in fewer sites, and we want it away from as many people as possible."

So that is why we are de-inventorying it. In fact, our FY 2012 budget goes to support the final year of de-inventory activities to do that.

The second piece of this on the emergency side is, we have a-this organization, we conduct exercises regularly.

There are national-level exercises with the FBI [Federal Bureau of Investigation] and state and local authorities. We do one of those big exercises once per year, including an example of, potentially, a power plant problem. This is all exercises, of course, so they are—we have an opportunity to do that.

The second piece are monthly, what we call, no-notice exercises, where we don't tell everybody that we are going to do one. We, I won't say, surprise them, but, in effect, we do surprise, just check and see, is everybody ready to respond to this event.

Finally, we are obviously in the middle of responding right now. We are learning a lot. As we are helping the Japanese, we are

learning a lot about better coordination that we need to have within the executive branch and within the Department of Energy.

Inés may have one last piece to add to that, if I could.

Secretary TRIAY. Thank you. Very quickly, we in the Environmental Management office are also responsible for the emergency preparedness so that we can respond to an emergency for those sites that are under the direction of the Environmental Management Program, one of those sites being the Hanford site.

To that end, of course, at the Hanford site we have, like Chairman Winokur pointed out, 177 tanks, 53 million gallons of radioactive waste, 175 million queries.

We take emergency preparedness extremely seriously, along the lines of what the Administrator was talking about. We also take the ultimate in design and construction of the Waste Treatment Plant, which will address this huge issue extremely seriously.

The Secretary has exercised great leadership when it comes to the Waste Treatment Plant. We avail ourselves of the best independent experts from industry, academia, as well as our national laboratories.

As a matter of fact, some of the issues that Chairman Winokur identified on mixing control for hydrogen tank farms readiness have benefitted from the work of those independent experts.

And we are committed to continue utilizing those independent experts, collaborate with the Board, and be ready to start the Waste Treatment Plant, finish the design by 2013, finish the construction by 2016 and start operations by 2019 to resolve this huge environmental issue of the Hanford tank farms.

Ms. SANCHEZ. Thank you.

Thank you, Mr. Chairman.

Mr. TURNER. Before we conclude with this panel, I want to give anyone an opportunity to add to their comments or to make concluding statements if they have something they would like to highlight or focus on.

Secretary D'AGOSTINO. Mr. Chairman, if I could, I wanted to recognize my father, Tom D'Agostino, who is in the room here.

He has served this country for over 45 years, starting off in the Marine Corps as an officer in the Korean War. He has been an inspiration to me and dedication.

I have learned a lot from him, and I am here because of him. So I wanted to thank him publicly.

Thank you. I appreciate your indulgence.

Mr. TURNER. Very good.

Well, in recognition with your father, we would like to continue our recognition of you all for your input and contribution.

We are just all so appreciative of the fact that you continue to serve in this capacity and know that you are making a tremendous difference.

With that, we will turn then to Panel Two. We will take a 5-minute break before we make that switch.

Thank you.

Mr. TURNER. I would like to provide a warm welcome to Mr. Weber, General Chambers and Admiral Benedict.

As I mentioned earlier, this annual nuclear budget hearing has typically focused solely on DOE and NSSA programs and budgets.

However, the Department of Defense also has a significant role in maintaining our Nation's nuclear deterrent, and is directly responsible for shaping many of NSSA's plans and programs.

Therefore, I have asked three key DOD leaders to testify in the second panel on the Department's nuclear programs and budgets and the linkages with NNSA. Mr. Weber, you are now recognized for your opening statement, if you would.

Also, we have your written statements. If you could, in about a 5-minute time period, although we are not going to run the clock, summarize what your statement is.

We will turn, then, to the first round of questions.

Mr. Weber.

STATEMENT OF HON. ANDREW WEBER, ASSISTANT SECRETARY OF DEFENSE FOR NUCLEAR AND CHEMICAL AND BIOLOGICAL DEFENSE PROGRAMS, OFFICE OF THE SECRETARY OF DEFENSE

Secretary WEBER. Chairman Turner, Ranking Member Sanchez and members of the subcommittee, thank you for giving me the opportunity to discuss the 2012 budget request for the Department of Defense nuclear forces programs.

It is an honor to come before you with my colleagues, General Chambers and Admiral Benedict, to provide testimony on the Department's nuclear deterrence requirements.

Today's testimony will focus on our work with the Department of Energy, from whom you have just heard, to ensure a safe, secure, and effective nuclear deterrent for as long as nuclear weapons exist.

Building upon a longstanding Department of Defense-Department of Energy partnership, the Nuclear Weapons Council has made substantial progress over the past 2 years.

As stated in this subcommittee's letter to the Honorable Paul Ryan concerning nuclear weapons-related appropriations, a safe, secure, and reliable nuclear stockpile is essential to United States security.

America's strategic forces continue their role as a pillar of our national security. In the past few months, I have had the opportunity to witness firsthand our Forces' dedication and commitment to this mission.

I traveled to Naval Base Kitsap in Washington State, last fall and, in February of this year, to Malmstrom Air Force Base, Montana.

During these visits, I spoke with the extraordinary airmen, sailors and marines, who gave me a great appreciation for the challenges they face each and every day executing our strategic deterrent mission.

Before discussing fiscal year 2012 plans, it is important to step back for a moment and consider the status of the nuclear security enterprise before the Nuclear Posture Review.

According to the bipartisan Schlesinger-Perry Report, the physical infrastructure was in serious need of transformation.

DOD also had inadequate plans for modernization of delivery platforms for nuclear weapons.

Perhaps most importantly, both Departments were dealing with the absence of a much-needed national consensus on the future role of our Nation's nuclear deterrent.

By completing last year's Nuclear Posture Review, the Administration helped restore this national consensus, and outlined a comprehensive plan to revitalize the nuclear enterprise and respond to all 21st-century nuclear threats, including nuclear terrorism.

The Departments of Defense and Energy now have a shared path forward to recapitalize the nuclear enterprise.

The Department of Defense has a robust plan for recapitalizing the delivery systems that support our nuclear deterrent.

The NPR concluded that the United States will retain a nuclear triad under a New START Treaty comprised of ICBMs, SLBMs and nuclear-capable bombers.

To keep the nuclear stockpile safe, secure, and effective for the long term, we are moving forward with SLBM, ICBM and gravity bomb warhead life extension programs.

We will also bolster the human capital base throughout the nuclear enterprise while restoring the infrastructure that supports the stockpile.

Nuclear threats to our Nation have changed significantly in the last 20 years. Indeed, the world is safer today from the threat of full-scale nuclear war than it was during the Cold War.

While the U.S. and Russia reduce the number and role of nuclear weapons, the U.S. must retain and maintain a safe, secure and effective arsenal.

We ask you to support the President's 2012 budget request so that we can further these goals.

I appreciate the opportunity you have given us to testify today, and would be pleased to answer your questions.

[The prepared statement of Secretary Weber can be found in the Appendix on page 131.]

Mr. TURNER. Thank you.

General Chambers.

STATEMENT OF MAJ. GEN. WILLIAM A. CHAMBERS, USAF, ASSISTANT CHIEF OF STAFF, STRATEGIC DETERRENCE AND NUCLEAR INTEGRATION, U.S. AIR FORCE

General CHAMBERS. Chairman Turner, Ranking Member Sanchez and distinguished members of the subcommittee, thank you for the opportunity to discuss your Air Force's strategic deterrent forces.

Your Air Force nuclear enterprise consists of 450 intercontinental ballistic missiles, 96 bombers, squadrons of F–15C [Boeing Eagle fighter jet] and F–15E dual-capable fighters, and approximately 23,000 dual-capable airmen who operate and sustain them.

These forces produce the strategic deterrence that remain vital at a time when the national military strategy identifies a strategic inflection point.

Maintaining credibility of our strategic deterrent requires a long-term visible commitment to our nuclear capabilities.

Continuing to strengthen our nuclear enterprise remains the Air Force's number one priority. Our Secretary and Chief of Staff articulated strategic guidance to engrain the Air Force's commitment

to the advances we have made and to sustain the focus on the nuclear enterprise.

My written statement lays out that guidance, and I respectfully request that statement be entered into the record.

Today, I would like to highlight the following areas: Our focus on human capital to ensure appropriate nuclear expertise at all levels; the importance of modernizing and recapitalizing nuclear deterrent operations capability; and implementation of the Nuclear Posture Review and New START.

When the Air Force established reinvigoration of the nuclear enterprise as our top priority, we included our most precious resource, our Airmen, as an integral part of that effort.

In response, the nuclear and personnel communities jointly created an analytical process, resulting in a comprehensive nuclear enterprise human capital effort, which lays out the active management steps required to deliberately develop Airmen and their nuclear expertise.

From investing in our people to investing in our weapons systems, every one of our systems in the Air Force's nuclear enterprise is undergoing some form of modernization or recapitalization.

Successful deterrence over the next two decades require sustaining and modernizing our fore structure in a consistent and deliberate manner.

During the next 7 years, implementation of the 2010 Nuclear Posture Review and the New START will bring a reduction in the role of numbers of nuclear weapons in our national security strategy.

The Air Force will remove, for example, multiple warheads from its ICBMs. The United States and Russia will reduce the number of accountable strategic warheads.

Final force structure numbers will be based on meeting the combatant commanders' requirements and maintaining the overall effectiveness of the deterrent force.

Our ability, as outlined in the national military strategy, to help enable other nations achieve their security goals, serve as a convener to cooperatively address common security challenges while, lastly, act as a security guarantor—preferably with partners and allies, but alone, if necessary—rests on a foundation of U.S nuclear capabilities and the strategic deterrence they provide.

The President's budget request reflects the positive steps we are taking to improve this Air Force core function.

Across the FYDP [Future Year Defense Plan], Air Force investment in nuclear deterrence operations totals $28 billion. The Air Force is committed to ensuring this investment results in systems and capabilities that best operationalize strategic deterrents for our Nation.

The national military strategy acknowledges that our Nation's security and its prosperity are inseparable. Preventing wars is as important as winning them, and far less costly.

In this time of constrained resources, the efficacy of nuclear deterrent operations is evident in the fact that for approximately 3 percent of the Air Force total obligation authority, your Air Force continues to deliver the bedrock of global strategic stability, providing the ICBM and bomber legs of the triad as well as dual-capa-

ble fighter capability 24 hours a day, 7 days a week, 365 days a year.

Thank you for this subcommittee's continued support of America's Air Force and, particularly, its support to our Airmen and their contributions to strategic deterrence.

[The prepared statement of General Chambers can be found in the Appendix on page 146.]

Mr. TURNER. Thank you.

Admiral Benedict.

STATEMENT OF RADM TERRY BENEDICT, USN, DIRECTOR, STRATEGIC SYSTEMS PROGRAMS, U.S. NAVY

Admiral BENEDICT. Chairman Turner, Ranking Member Sanchez, distinguished members of the subcommittee, it is an honor to testify before you today representing Strategic Systems Program.

SSP's [Strategic Systems Program's] mission is to design, develop, produce, support and protect our Nation's sea-based strategic deterrent, the Trident II D–5 strategic weapon system.

The recently ratified New START treaty increases the dependence on the submarine leg of the triad. The reductions in warheads and launchers will result in ballistic missile submarines carrying approximately 70 percent of the Nation's strategic commitment.

I have focused on four priorities since returning to SSP: Nuclear weapons security, the D–5 life extension program, the *Ohio* replacement program, and the solid rocket motor industrial base.

The first priority I would like to address and, arguably, the most important priority, is the safety and the security of the Navy's nuclear weapons.

Our Marines and Navy Master at Arms provide an effective and integrated elite security force at our two strategic weapons facilities in Kings Bay, Georgia, and Bangor, Washington.

The U.S Coast Guard units have been commissioned at both facilities to protect our *Ohio*-class submarines as a transit to and from their dive points. This team provides a comprehensive security umbrella.

The second priority I would like to discuss is SSP's life extension efforts to ensure an effective and reliable sea-based deterrent. The D–5 weapons system continues to demonstrate itself as a credible deterrent and exceeds the operational requirements established for the system almost 30 years ago.

Last month, the USS *Nevada* conducted the 135th consecutive successful flight test of the D–5 system.

However, we cannot simply rest on our successes. We must remain vigilant of age-related issues to ensure a continued high level of reliability.

SSP is extending the life of the D–5 weapons system through an update to all the subsystems: Launcher, navigation, fire control, guidance, missile and re-entry.

These life extension efforts will provide the Navy with the system we need to meet the operational requirements of the future.

My next priority, and one of the highest Navy priorities, is the *Ohio* replacement program. To lower development costs and leverage the proven reliability of the Trident II, the *Ohio* replacement

SSBN will enter service with the D–5 weapons system beginning in 2029.

Another critical component of the *Ohio* replacement program is the development of a common missile compartment that will support D–5 deployment on both the *Ohio*-class replacement and the successor to the United Kingdom's *Vanguard* class.

Finally, I would like to discuss the importance of the solid rocket motor industrial base. The Navy is maintaining a continuous production of rocket motors.

However, we have faced significant cost challenges as both NASA and the Air Force demands have declined.

We are working with our industry partners, the Department of Defense, and Congress to sustain the solid rocket motor industrial base and find ways to maintain successful partnerships.

We look forward to continuing this collaborative approach to maintain this critical national capability.

Thank you for the opportunity to testify here today. I respectfully request that my written statement be submitted for the record, and I am pleased to answer your questions at this time, sir.

[The prepared statement of Admiral Benedict can be found in the Appendix on page 153.]

Mr. TURNER. Thank you.

As you can tell we had a vote that was called. That is the 10-minute bell that we have to get to the Capitol for.

I am going to yield my time to Mr. Bishop so he would not have to return after the votes, since he has sat through so much of this hearing.

But before I do, Admiral, I just want to point out one correction to your statement. The *Ohio*-class submarine replacement program is not the Ohio replacement program because Ohio will never be replaced.

So the—and that, of course, is near and dear to me, being from Ohio.

Mr. Bishop.

Mr. BISHOP. Thank you, Mr. Chairman. I appreciate that kindness.

I would be willing to come back, obviously, unless we are talking about Ohio again. It should be Utah class, I think.

Rear Admiral, I appreciate your comments very much, especially your fourth point there on the base. I realize that the Navy's Strategic Systems Programs has been impacted by NASA's space shuttle conclusion as well as the completion of Minuteman III Propulsion Replacement Program.

Knowing that the current and diminished solid rocket market has impacted the D–5 missile, what does the Navy plan to do, actually, to minimize those costs?

Admiral BENEDICT. Sir, we have been working very collaboratively with our industry partners, both Lockheed Martin and ATK.

To that extent, I went out to Utah, went through the plant and took a series of briefings from ATK.

As a result of that, I requested that those briefings be provided to General Kehler, who is commander of the U.S. strategic forces

as well as Mr. Stackley, who is ASN, RD&A [Assistant Secretary of the Navy (Research, Development and Acquisition)].

What those presentations show is an aggressive approach by ATK to try to minimize their cost. Specifically, they have reduced their indirect costs approximately 24 percent over the last 3 years.

They have also significantly reduced their headcount from approximately 4,900 individuals to about 2,800, a reduction of 42 percent, in order to maintain costs.

They have consolidated within buildings to the maximum extent possible.

And while all that was happening, sir, over the last 3 years, the D–5 program has taken significant efforts in quality and process improvements where we have reduced approximately 17,000 hours and cost-avoided about $10 million a year.

So, to get—I am sorry, sir.

Mr. BISHOP. If I could just interrupt because I appreciate that; you are right on with what you are saying you are doing. Do you also have a plan in the future because NASA is still dithering on what they want to do with the heavy lift, whether they want to obey Congress or not.

So, in—regardless of what NASA ultimately decides to do, do you also have a sustainability plan regardless of NASA's involvement in the future?

Admiral BENEDICT. Sir, we have a requirement to maintain strategic deterrence. We have a requirement today to—we have a plan today to move forward with minimum sustaining.

An analysis that we conducted said that we need to produce 12 sets of motors per year in order to maintain safety at ATK.

Mr. BISHOP. So I am assuming you are planning on maintaining that——

Admiral BENEDICT. Yes, sir

Mr. BISHOP [continuing]. Production level.

Admiral BENEDICT. Yes, sir. We are.

Mr. BISHOP. Through the current as well as the new *Ohio*-class as well?

Admiral BENEDICT. Yes, sir.

Mr. BISHOP. That is wonderful.

Would the Navy benefit if the Air Force—and I am not trying to put the General on the spot here—would continue its production of the Minuteman ICBMs as well as NASA continuing on with the same manner in a low rate-production concept?

Admiral BENEDICT. Yes, sir. I think any increase in volume to the projected reduction based on NASA and the logical termination of the Minuteman line today would significantly benefit the United States Navy in terms of overhead charge.

Mr. BISHOP. I appreciate that.

Mr. Chairman, I know you are anxious to get over here to vote with everyone else. I have a couple of other questions.

But if I could submit those in writing, I would be appreciative. We will let you move on with the committee.

Thank you for the kindness of allowing me to be here.

Mr. TURNER. Okay. Thank you so much. We will be recessed.

[Recess.]

Mr. TURNER. I am going to call the subcommittee back to session.

Since we have returned from votes and we have myself and Mr. Larsen, we will just do one round of questions and clean them all up, if someone else is waiting to ask a question beyond us.

And with that, I will begin with General Chambers.

The Nuclear Posture Review states, "The Air Force will retain a dual-capable fighter as it replaces F–16s and the F–35 Joint Strike Fighter. These decisions ensure the United States will retain the capability to forward-deploy non-strategic nuclear weapons in support of its alliance commitments."

Now, please discuss the Air Force's plans to make the F–35 [Lockheed Martin Lightning II fifth-generation fighter jet] Joint Strike Fighter fully nuclear-capable and nuclear-certified. When is this capability needed and when will it occur?

Now, the F–35 Joint Strike Fighter continues to experience schedule delays. What is the Air Force's mitigation plan to sustain our current dual-capable aircraft capability in Europe, should the F–35 continue to experience schedule delays?

And also would you please discuss the current status of and future plans for our NATO allies in dual-capable aircraft? Are you seeing decisions and investments by our allies in DCA, dual-capable aircraft, sustainment or follow-on systems that would maintain their burden share commitments?

And do you have any concerns in this area?

General.

General CHAMBERS. Thank you, Chairman Turner.

A great question. As you know, the U.S.' commitment to the NATO alliance for dual-capable aircraft is currently fulfilled by a combination of F–16s [General Dynamics Fighting Falcon fighter jet] and F–15Es. The plan to eventually replace those airplanes with the F–35 is still in place.

The F–35 program, of course, is under scrutiny and under a review, a technical baseline review which, when completed, will give us some idea of the potential delays in the program.

The money to develop the F–35 as a platform that can carry the new life extended B61 is in our program. That, to answer your question about timeline, the slip of the F–35 in terms of production and delivery and IOC, initial operating capability, is unknown at this time. But it is likely to move to the right.

The block of software that makes the F–35 able to carry the new B61 is the first block of software after the development phase. And that is still part of the project and the program.

Because of this delay, our command in Europe, the United States Air Forces in Europe, who presents these forces to the alliance, has a number of planning options underway to cover this capability to NATO in the event of a slip. And it involves existing aircraft, such as the F–16 and F–15E.

And we are confident that, through a number of measures, to include the potential life extension of the F–16, to include reverting the primary high readiness mission back to F–15Es, all those options are being pursued in order to cover a potential gap that an F–35 slip might create.

Mr. TURNER. Thank you, General.

Turning then, from our bombers, to our sea-based leg of the nuclear triad; Admiral, today the sea-based leg of the nuclear triad

comprises just over half of the total deployed stockpile. Under New START, the sea-based leg of the triad will comprise two-thirds of our deployed stockpile.

As the Strategic Posture Commission observed, "Each leg of the triad has its own value." However, New START places a significant dependence on one of these legs.

How is the Department thinking through the risks of such a policy decision, and how is it managing such risks? And does this greater dependency drive certain programmatic, operational or, I am certain as you might advocate, resource considerations, than perhaps were required before looking at a triad that is certainly not going to be a third, third, third?

Admiral BENEDICT. Yes, sir.

So, as I stated in my opening statement, and as you reiterated there, under the New START treaty, we do approach greater than two-thirds of the deployed forces. As I would also mention, we also are the survivable leg of the triad.

Of course, as we look forward, we are doing life extension efforts in a very planned manner, in all of our functional subsystems, in launcher, in fire control, in guidance and navigation, missile and re-entry.

We believe that taking a phased approach in a very orderly manner through the *Ohio* program, which we are required to maintain through 2042, and then using that base line as the functional SWS [strategic weapons system] for the *Ohio* replacement program, minimizes the risk.

We are able, now, to optimize limited resources. But I would tell you that, in the Department of the Navy, from the Secretary on down, we have strong leadership and dedication to the mission and to our requirements to supply this to the COCOM [combatant commander].

So, I believe that in a trying time of resources, I have a fair voice at the table in terms of achieving and updating the requirements and resources necessary to carry out my mission, sir.

Mr. TURNER. Thank you.

Mr. Weber, the Nuclear Posture Review stated that, "The secretary of defense has directed a number of initiatives to further improve the resiliency of the NC3, the nuclear command, control, and communications system. An interagency study is being initiated to determine the investment needed and the organizational structure best suited to further strengthen the NC3 capabilities."

Individual NC3 programs are spread across the services and the lead architect in OSD [Office of the Secretary of Defense] Networks and Information Integration, NII, is being eliminated.

To the extent you can discuss this in an unclassified hearing, please describe the Department's concerns about our nuclear command and control infrastructure, and when do key program and resource decisions need to be made and when will the Department be able to provide the committee with its NC3 investment strategy?

Secretary WEBER. Okay. Well, the Nuclear Command and Control System, as outlined in the NPR, is a very high priority. The commander-in-chief needs a reliable, assured capability to communicate to the nuclear forces. I mean, that is a fundamental part of our deterrent.

And we have a few efforts under way.

One is the former commander of Strategic Command, Admiral Richard Mies, led a federal advisory committee that did a comprehensive review of the NCCS [Nuclear Command and Control System] and we are working within the Department and interagency partners on implementation of many of those recommendations.

The dissolution of the NII office will have no impact on NC3. Some of those core elements will be moved to other elements within DOD, such as the Chief Information Officer's domain as well as other parts of the AT&L [Acquisition, Technology and Logistics] side of the Department of Defense, where I work.

We are making investments currently. General Kehler, from STRATCOM appeared before this subcommittee recently and noted that the new construction that starts in the fiscal year 2012 budget request at Offutt Air Force base, includes an EMP-hardened command and control facility for Strategic Command.

So that is part—that is really a central node of the NCCS system. And that is just an example of one of the investments that we are making.

In addition, we are upgrading our cryptographic modernization programs and those are included in the President's fiscal year 2012 address.

We will provide additional details to you in a classified question for the record.

[The information referred to can be found in the Appendix on page 167.]

Mr. TURNER. We have discussed our bombers and our sea-based leg triad. Now, General Chambers and Admiral Benedict, would you please discuss some of the challenges that you are working through on how you would implement the New START force structure reductions? When will the Department make its final decisions on its post-New START force composition? And when will Congress see the specific implementation schedule and estimated funding requirements?

General CHAMBERS. Chairman Turner, the final decisions on the exact force structure numbers are still being reviewed.

The military advice on those force structure numbers is now being discussed among the services and the Joint Staff and with our partners in OSD.

That decision which, as you know, we have reported to Congress in the Section 1251 Report of the NDAA [National Defense Authorization Act] for our two legs of the triad, that the numbers will be up to 420 ICBMs and up to 60 bombers.

That "up to" must be defined and that decision will be made in the coming weeks, perhaps in a few months.

We are not yet concerned about the timeline to execute the treaty. The steps taken to implement the treaty in general are fairly straightforward. But on the Air Force side, perhaps the most challenging part of the timeline, although we have a good plan, is the final conversion method for the B–52 [Boeing Stratofortress strategic bomber] force.

Once that final B–52 number is determined and we lay that timeline into our plan, we are confident we will be able to execute.

We will need to advocate for the funds each year. As you know, we will be implementing both the eliminations and the conversions toward the latter part of the entry into the force period. And so, in the coming years, as we advocate for these needs in the budget, we will come with those figures.

Admiral BENEDICT. Sir, excuse me, sir, I would add that as General Chambers said, we are, again, we are also working with NNSA, with STRATCOM [United States Strategic Command], and with DOD in terms of the exact planning requirements, not only in terms of schedule, but also in terms of numbers, specifically with us, with hedge.

We are working closely to define those. We have submitted our budget request as part of the 1251 and in that request, we made an assumption that the implementation would be more in the out-years rather than the near-term years.

Again, as the General said, as we get more definitive definition on the exact numbers and timing, we expect our budget request to be adjusted adequately.

Mr. TURNER. Mr. Larsen.

Mr. LARSEN. Thank you, Mr. Chairman. And I was just thinking, Mr. Chairman, how useful it has been to have the two panels today. As you noted early on, it really is sort of creating that continuum for the subcommittee to understand the soup-to-nuts on the nuclear security enterprise and how the nuclear weapons play into it, how we deploy and then, obviously, following on to treaty commitments as well and how it supports it.

So thanks for setting it up this way.

General Chambers, I will start with you. If I can go back to the Chairman's question about NATO, can you characterize, what has the response been from allies to the potential or the slipping of this F–35 timeline? Are you seeing decisions and investments that allies otherwise would have made on the burden-sharing commitments slipping as well? Are they in a wait-and-see?

How is that—what is the impact here?

General CHAMBERS. Mr. Larsen, thank you.

Good question.

As you know, the current burden-sharing nations who contribute to this commitment to the alliance aren't all invested in the F–35 program. Specifically, Italy and the Netherlands are the two countries that are brought into the program. They have been consulted by the F–35 program office all along the way and will be fully briefed when the technical baseline review is completed as to how the delivery schedule is affected by a potential slip.

They, in their planning, have envisioned this new platform to fulfill its dual-capable aircraft capability to the alliance. But they, as well, obviously, argue for the money needed to do that on an annual basis, with their governments.

Very difficult to predict how that is going to come out.

At the alliance level, politically, all current burden-sharing nations continue to be committed to this mission. As you know, at the Lisbon summit, the strategic concept was confirmed and it still includes the mission of strategic deterrence based on our nuclear capability, provided by the dual-capable aircraft and all current bur-

den-sharing nations are officially on record as continuing to support that.

As this plays out, if the platform slips and governments shift their position, we will monitor that very closely.

Mr. LARSEN. Back to you, General Chambers, and this is a shift here of subject. Can you provide an update on the Air Force's nuclear surety inspection process and how things have improved since the 2007 and 2008 incidents?

General CHAMBERS. Yes, sir. Since those incidents, the Air Force has committed an increased rigor in its inspection process that actually has been very impressive.

It has involved the standup of a core inspection team at Air Force's Inspection Agency, which is a branch of our *I*nspector General and stationed at Kirtland Air Force Base. They form the core and the deepest level of expertise of all inspectors and they supplement and add to the capability of our Major Command inspectors.

The standardization of inspector training has taken place. The development has——

Mr. LARSEN. Has that taken hold?

General CHAMBERS. It has taken hold and we have seen it in the quality of discrepancies that have been written up by the inspectors, the quality in which we share the information across commands about how units have done, the ability to trend our inspection results out, so that we can improve.

Perhaps one of the most important initiatives has been the addition of root cause analysis which is a formal problem-solving method of get at the heart of what an inspector has found as a discrepancy and actually get to the root cause.

It is increasing the performance of our units and we have seen, in general, a positive trend in results. We will always look to our inspectors to find problems, so that we can get better every day.

But this increased rigor, the standardized training, standardized check list, the use of root cause analysis, has all enhanced the commanders' ability to do better every time.

Mr. LARSEN. All right.

Admiral Benedict, we have had this discussion, not you and I, I am sorry. But the subcommittee has had a discussion in the past with regards to the *Ohio*-class replacement program.

New START, though, when it was negotiated, assumed a reduction from 24 missile tubes per hull to, I think, a maximum of 20.

The current configuration, as I understand it, would move from 24 to 16.

Can you discuss, for the subcommittee here, the Navy's rationale for that? For moving from 24 to 16 as opposed to the max of 20?

Admiral BENEDICT. Sir, as part of the work-up for the Milestone A with Dr. Carter in OSD, SSP supported extensive analysis at both the OSD level as well as STRATCOM's analysis.

Throughout that process, we provided, from the SWS capability, our perspective. Ultimately that was rolled up into both STRATCOM and OSD and senior Navy leadership and in previous testimony, the Secretary of the Navy, the CNO [Chief of Naval Operations], and General Chilton have all expressed their confidence that the mission of the future, given their perspectives as they see the environment today can be met with 16.

And so, as the acquisition and the SWS provider, we are prepared to support that decision by leadership, sir.

Mr. LARSEN. Yes.

And did your analysis that fed into this, did you look at specific numbers then?

Admiral BENEDICT. Sir, we looked at the ability of the system; again, SSP does not look at specific targets with——

Mr. LARSEN. Right. Yes, yes, yes.

Admiral BENEDICT. Our input was the capability of the missile, the number of re-entry bodies and the throw weight that we can provide against those targets and, based on that analysis, the leadership decision was 16, sir.

Mr. LARSEN. I want to go back to the solid rocket motor industrial base. And I didn't quite understand the response, and I forget if it was Admiral Benedict or General Chambers, about the idea of a production line of 12 and what the necessity of that production line of 12 meant.

Is that because we needed those for replacements or we need those on the shelf just in case? How are those—how do those play out for us?

Admiral BENEDICT. Yes, sir.

When we look at minimum sustaining rate, the first thing we do is the analysis on what is the minimum number of operations that we need to do in order to sustain a viable work force and experience with both the tooling and the processes from a safety standpoint.

We have looked at a number of ranges and, through an analysis, have determined that 12—basically one set per month—is the right number in order to keep a safe throughput.

Now, we don't build one motor set per month. We do build, essentially, one first stage per month. We build second stages in groups and we build third stages four at a time, from a cost efficiency.

In terms of production from sustainment, we built the D5 very quickly at the beginning, before the Cold War ended. And so we have an aging issue that we also need to address; propellant, given its chemistry, doesn't last forever.

So as we have done the analysis, we believe that we can get approximately 30 years of life out of our rocket motors.

So as we look at our production line for the future, both in support of *Ohio* through 2042 and then entry into the *Ohio* replacement submarine class, we will need to sustain production of rocket motors to ensure that we don't have a safety issue with aging propellant in the future.

Mr. LARSEN. So as I understand it, the industrial base is important, but the requirement has to do with the safety of the motor? The certainty of it? The surety of it?

Admiral BENEDICT. Yes, sir. But in our mind, those are linked.

Mr. LARSEN. Yes. You need the industrial base in order to achieve this. But to achieve this requirement, you set the requirement first, and then that defined the industrial base?

Admiral BENEDICT. Yes, sir.

Mr. LARSEN. Yes. Okay.

Admiral BENEDICT. Yes.

Mr. LARSEN. Yes.

Thanks. Is that right? General Chambers, are you part of that response before? I don't want to have you answer something, if you don't need to.

General CHAMBERS. I wasn't, sir. But Admiral Benedict did mention, of course, that our requirements have declined because the Minuteman III propulsion program has recently been completed. So our motors are good right now. We are, through our ICBM demonstration validation program, exploring, through engineering and design angles, the potential for modernizing the propulsion for our aging issues, which will come later this decade. And we want to look at with a mind toward a potential follow-on Minuteman III as well.

Mr. LARSEN. And with any luck, the Chairman and I will still be here to deal with that one too.

General CHAMBERS. We will look forward to that, sir.

Mr. LARSEN. Maybe in different positions. We will see.

That is it. Thanks a lot. Thanks.

Mr. TURNER. Gentlemen, I want to thank you so much for participating and also for your leadership in the areas that make such a big difference for our nuclear deterrent.

With that, we will be adjourned.

[Whereupon, at 2:40 p.m., the subcommittee was adjourned.]

A P P E N D I X

April 5, 2011

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

April 5, 2011

Opening Remarks
Honorable Michael R. Turner
Chairman, Subcommittee on Strategic Forces
House Armed Services Committee

Hearing on the FY 2012 Budget Request for Department of Energy Atomic Energy Defense Activities and Department of Defense Nuclear Forces Programs

April 5, 2011

I would like to extend a warm welcome to our first panel of witnesses today:

- Mr. Tom D'Agostino, Administrator of the National Nuclear Security Administration;
- Dr. Ines Triay, Assistant Secretary of Energy for Environmental Management; and
- Dr. Peter Winokur, Chairman of the Defense Nuclear Safety Board.

This annual nuclear budget hearing has typically focused solely on the Department of Energy (DOE) and National Nuclear Security Administration (NNSA). However, the Department of Defense (DOD) also has a significant role in maintaining our nation's nuclear deterrent and, as the primary customer for NNSA's Weapons Activities, is directly responsible for shaping many of NNSA's plans and programs. Therefore, I have asked three key DOD leaders to testify in a second panel on the Department's nuclear programs and budgets, and the linkages with NNSA. I would also like to welcome those individuals:

- Mr. Andrew Weber, Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, and staff director of the Nuclear Weapons Council;
- Major General William Chambers, Assistant Chief of Staff of the Air Force for Strategic Deterrence and Nuclear Integration; and
- Rear Admiral Terry Benedict, Director of the Navy's Strategic Systems Programs.

Remarkably, a strong bipartisan and bicameral consensus has been forged over the need for nuclear modernization. This way was paved two years ago with the important work done by the bipartisan Strategic Posture Commission, led by Dr. William Perry and Dr. James Schlesinger. Less than two weeks ago, all 16 members of this subcommittee sent a letter to the Budget Committee urging them to support NNSA's funding increases and to ensure such funds are categorized as national defense.

The Nuclear Posture Review and the Section 1251 Report made many promises with respect to the modernization of our nuclear warheads, delivery systems, and infrastructure. Based on what I have seen thus far of the Fiscal Year 2012 budget request, I am encouraged that

the Administration appears ready to honor these promises. But there is much work to be done, and my focus today is to understand exactly how those promises are being implemented in the plans, programs and budgets of NNSA and DOD.

NNSA has outlined a tightly choreographed warhead life extension plan over the next two decades that meets DOD requirements, matches its available capacity and workforce, and syncs to its infrastructure modernization plans. Any perturbations in this plan or changes in funding have wide-reaching implications.

To this end, I am particularly concerned about the B-61 life extension program (LEP). Despite specific timeline requirements, the magnitude of the B-61 LEP will not be known until the cost and design study is completed later this year. NNSA has been unable to start the W-78 life extension program—which will also explore the feasibility of a common ICBM and SLBM warhead—due to limitations in the Continuing Resolution. I would ask Administrator D'Agostino to discuss how these programs are being managed to minimize schedule and cost risk.

I am also concerned about NNSA's two major construction projects at Los Alamos and Y-12. This year's budget request includes revised cost estimates for both projects—based on 45-percent completed design—which are significantly higher than earlier estimates. Despite this cost growth, only $340 million has been added to the Future-Years Nuclear Security Program (FYNSP). The majority of the construction funds will come outside the FYNSP . I would like to understand what is driving these costs and how NNSA plans to simultaneously manage these large-scale construction projects.

The $4.1 billion increase in modernization funding contained in last November's 1251 Report is welcome, but upon further inspection, is a bit misleading. Of the $4.1 billion added to the FYNSP, $1.5 billion of this—or, 37-percent—is allocated to employee pension plans, <u>not</u> modernization. I am open to any ideas that could give NNSA and its contractors greater flexibility in meeting their pension obligations.

On the DOD side, the NPR and 1251 Report describe plans for the sustainment and modernization of several DOD systems including: a new bomber, dual capable aircraft, a new cruise missile, a potential ICBM follow-on, the Ohio-class replacement submarine, the Trident D5 life extension program, a new joint Air Force-Navy fuze replacement program, and the nuclear command and control infrastructure. This is a tremendous 'to-do' list. Does the budget request merely contain placeholders for these plans or are there concrete activities associated with each? I am also concerned about the solid rocket motor industrial base and I know that Admiral Benedict's budget, in particular, has increased to accommodate rising costs to sustain this important capability.

Another issue I am closely watching is the implementation of the New START Treaty. We have yet to see exactly how DOD will implement the force reductions in the Treaty or the associated funding requirements. However, senior Administration officials, including the President's national security advisor, have already commented that, "We're making preparations for the next round of nuclear reductions" and that "the Department of Defense will... develop options for further reductions in our current nuclear stockpile." It would seem to me that we need to understand and work through the details of how to smartly implement New START before rushing towards another round of reductions.

Additionally, and I've said this in previous years, I remain concerned about nuclear safety and security. There is no margin for error in the nuclear business. I would appreciate our witnesses also discussing their efforts to address nuclear safety and security, including Dr. Winokur's safety assessment of our nuclear facilities and operations.

In the area of Environmental Management (EM), I would welcome Dr. Triay's update on EM progress to-date, her priorities, and the challenges ahead. Additionally, our committee included a provision in last year's defense bill to authorize the establishment of energy parks on former defense nuclear facilities. Miamisburg Mound in my district in Ohio was once a key Cold War era nuclear production facility and, after an extensive clean-up effort, has been redeveloped into a business park for high-tech companies. It is just such a candidate for channeling the community's legacy nuclear expertise into new energy research.

I have also asked Deputy NNSA Administrator Harrington to participate in today's hearing to address member questions on nuclear nonproliferation. This issue is handled at the full committee level, but we have been given approval by Chairman McKeon to discuss it today with our expert witnesses. There is strong bipartisan support to keep dangerous material out of the wrong hands, especially for the urgent task of identifying, securing, and reducing foreign sources of potential nuclear and radiological threats. The committee is also closely monitoring plans to build nuclear Centers of Excellence in China and India to understand their scope and how DOD and NNSA funding would be used.

On a final note, I want to make it clear that while our subcommittee supports the increase in nuclear funding, we do not write blank checks. We will continue to conduct rigorous oversight of the nuclear portfolio, seek out areas for cost savings and efficiencies, and make budget modifications consistent with our oversight findings.

I would like to thank our witnesses for being with us today. Your leadership and expertise is greatly valued. I look forward to your testimony.

House Armed Services Committee, Subcommittee on Strategic Forces
Hearing on the FY12 Request for
The Department of Energy Atomic Energy Defense Activities
and Department of Defense Nuclear Forces Programs
April 5, 2011

Ranking Member Loretta Sanchez
Opening Statement

Thank you Chairman Turner.

I would like to join Chairman Turner in welcoming Mr. D'Agostino, Dr. Triay and Dr. Winokur, as well as Mr. Weber, General Chambers and Admiral Benedict to this hearing on the FY12 budget request for the Department of Energy's Atomic Energy Defense Activities and the Department of Defense's Nuclear Programs.

I would also like to thank Ms. Harrington for being here to discuss defense nuclear non-proliferation programs during the question and answer session.

I would like to touch on a few specific issues related to nuclear non-proliferation, nuclear cleanup, and sustaining our nuclear deterrent and our nuclear forces.

First, I have been very concerned about the potential delays to urgent nuclear nonproliferation efforts stemming from the continuing resolution, even as securing all vulnerable weapons-usable material in four years remains one of the most pressing national security priorities.
I am interested in hearing about interagency coordination and how DOD supports nuclear nonproliferation activities, and what opportunities and challenges remain for Cooperative Threat Reduction.

Second, nuclear clean-up remains an important priority.

Sites like Hanford and Savannah River Site played a unique and irreplaceable role during the Cold War and now we must make diligent and expeditious progress toward clean-up.

I look forward to this opportunity to hear what progress has been made, especially with the help of the stimulus funds, and what pitfalls remain.

Third, President Obama and Vice President Biden have made clear the importance of maintaining a safe, secure and reliable nuclear arsenal without nuclear testing, especially in the context of nuclear weapons reductions.

I look forward to hearing about how the FY12 budget request will strengthen the Stockpile Stewardship program.

Several challenges loom ahead, including how NNSA will oversee concurrent construction -- on-time and on-budget -- of the Chemistry and Metallurgy Research and Replacement (CMRR) facility at Los Alamos National Laboratory and of the Uranium Processing Facility (UPF) at Y-12.

I'd also like to hear about how the FY12 budget request supports surveillance activities, verification, and dismantlement of nuclear weapons.

And fourth, I look forward to the discussion of DOD's plans for sustaining and replacing our nuclear forces in the context of New START force reductions and potential further nuclear reductions, and what cost savings are being considered.

I'd also like to specifically point to the challenge of sustaining the industrial base with regard to solid rocket motors in the wake of the NASA canceling its Constellation program, and what the cost impact has been for DOD.

And finally, I'd like to hear about progress made on strengthening the nuclear enterprise culture within the Air Force.
Retaining, developing and recruiting critical skills remain essential for the nuclear mission at DOD as well as NNSA.

Again, welcome.

Statement of Thomas P. D'Agostino
Under Secretary for Nuclear Security and
Administrator, National Nuclear Security Administration
U.S. Department of Energy
on the
Fiscal Year 2012 Nuclear Security Posture and the
President's Budget Request
Before The
Subcommittee on Strategic Forces
House Armed Services Committee

April 5, 2011

Chairman Turner, Ranking Member Sanchez, and members of the subcommittee, thank you for the opportunity to testify regarding our nuclear security posture and the President's FY2012 budget request for the National Nuclear Security Administration (NNSA).

As you know, the NNSA has the important mission to enhance global security through nuclear deterrence, nonproliferation, counterterrorism, naval nuclear propulsion, and national leadership in science and technology. Today I am going to focus on how we at NNSA are 1) investing in the future of the nuclear security enterprise, 2) implementing the President's nuclear security agenda, and 3) improving the way we do business and manage our resources from the standpoint of the status of the nuclear stockpile and supporting infrastructure. These key mission areas are interdependent, and the men and women who support them make a direct contribution to advancing national and international security.

Now more than ever, we must remain vigilant in ensuring that nuclear security programs and activities are properly managed in this tough budget climate. The national consensus that has developed following the Nuclear Posture Review (NPR) and the New START Treaty ratification on the need to modernize our arsenal and promote all aspects of nuclear security across the spectrum of deterrence, proliferation prevention, counterterrorism and response further underpins the need to execute this mission responsibly and effectively.

The Nuclear Security Policy Context and NNSA's Role

The policy context remains one in which the advancement of global nuclear security is a priority. When President Obama revealed his vision for reducing nuclear dangers and moving toward a world without nuclear weapons, he made clear that "as long as these weapons exist, the United States will maintain a safe, secure and effective arsenal to deter any adversary, and to guarantee that defense to our allies."

NNSA has been implementing the NPR guidance to ensure a safe, secure and effective arsenal and promote global nuclear security. With the entry into force of the New START

Treaty we are able to project what the stockpile will look like, to plan an integrated program that meets established military requirements, and to modernize the stockpile and infrastructure to support a leaner, modern 21st century Nuclear Security Enterprise (NSE).

The ratification of the New START Treaty brought the Administration and Congress together on the need to modernize the nation's nuclear arsenal, and to provide greater resources to the science and technology missions, the aging physical infrastructure, and the people that support our strategic deterrent. We have agreed with the Russian Federation and within the United States to decrease the number of operationally deployed nuclear weapons, but we must not lose sight of the commitment needed to maintain the current stockpile and ensure it is safe, secure and effective. The President's budget requests in FY2011 and again in FY2012 reflect this commitment in the clearest and most comprehensive terms.

21st Century Nuclear Security Enterprise

While NNSA's primary mission is to maintain and deliver the nation's nuclear deterrent to the Department of Defense, the expertise and tools used to accomplish that task have resulted in a multitude of other national security applications. The network of laboratories, production plants and sites that make up the Nuclear Security Enterprise evidences not only a shift from the Cold War capacity-based nuclear weapons complex, but a vision for preserving and enhancing one of our nation's greatest national assets.

This shift from a weapons complex into a nuclear security enterprise is about making adjustments to the program in order to prevent and respond to current and emerging global threats, particularly in relation to countering a wide-ranging set of nuclear threats such as preventing – or minimizing the impact of – the explosion of an improvised nuclear device or radiological dispersal device. It is about staying ahead and advancing cutting edge science and technology to carry out this mission.

Budget Highlights

The President's FY 2012 Budget Request provides $11.78 billion to **invest in a modern, 21st century nuclear security enterprise, implement the President's nuclear security agenda, and improve the way the NNSA does business and manages its resources.**

The FY 2012 request represents an increase of 5.1 percent over the $11.2 billion requested for FY 2011, reflecting a commitment to investing in a modern enterprise that can support the full range of nuclear security missions. The request highlights the vital role NNSA plays in implementing the President's nuclear security agenda and the broad, bipartisan consensus that has developed regarding the role NNSA plays in enhancing our nation's security and the resources needed to get the job done.

Investing in the Future

Secretary of Energy Chu and I work closely with Secretary of Defense Gates and other Defense Department (DoD) officials to ensure that NNSA remains focused on a strong

interagency partnership that meets our national security requirements and promotes NNSA's sustainability. As a result, the President's request includes $7.6 billion for the **Weapons Activities** appropriation, an 8.9 percent increase over the President's FY 2011 request and a 19.5 percent increase over the FY 2010 appropriation to **invest in the future of the nuclear security enterprise**. These resources will support, among other things, the operation and construction of the modern research facilities needed to do cutting edge science and attract the next generation of nuclear security experts. It continues implementation of the President's commitment to invest $85 billion over the next decade to sustain the nuclear deterrent and to modernize the infrastructure that supports it, as well as to implement the agenda outlined in the Nuclear Posture Review, the Stockpile Stewardship and Management Plan and the updated Section 1251 Report submitted to Congress.

NNSA's budget request also includes associated out-year projections in the Future-Years Nuclear Security Program (FYNSP) that identifies resources needed to meet the continuing requirements for significant long-term investments in the deliverables, capabilities and infrastructure of the enterprise.

These resources will help us invest in a modern, 21st century Nuclear Security Enterprise that can sustain the stockpile and support our full range of nuclear security missions. With these investments, NNSA will be able to continue to move toward an enterprise that is safer, smaller, more secure, more efficient, more sustainable, and more adaptable.

The request includes an increase of 3.1 percent over the FY 2011 level to protect and advance the scientific capabilities at the U.S. national security laboratories and a 21 percent increase for infrastructure improvements, including continuing work on the Uranium Processing Facility (UPF) at the Y-12 National Security Complex and the Chemistry and Metallurgy Research Replacement facility (CMRR) at Los Alamos National Laboratory. These capital projects are key elements for ensuring safe, secure, and reliable uranium and plutonium capabilities for nuclear security and other important missions.

To power the nuclear navy, the budget request includes $1.2 billion for the NNSA's **Naval Reactors** program, an increase of 7.8 percent over the President's FY 2011 Request. The programs in this appropriation support the U.S. Navy's nuclear fleet. Specifically, the request supports the Administration's decision to recapitalize the sea-based strategic deterrent. The OHIO Class ballistic submarines, the most survivable leg of the nation's strategic deterrent, are reaching the end of their operational life. The request will enable Naval Reactors to continue reactor plant design and development efforts begun in 2010 for procurement of long-lead reactor plant components in 2017, in support of Navy procurement of the first OHIO Class submarine replacement in 2019. Providing the OHIO Class replacement a life-of-the-ship reactor core will require substantial advances in manufacturing technology to provide new cladding and a new fuel system. The request also supports the refueling of a land based prototype reactor, providing a cost effective test platform for these new technologies.

Increased funding is also requested for the Spent Fuel Handling Recapitalization Project (SFHP), which will replace the over 50-year old Expended Core Facility (ECF) as the location for naval spent nuclear fuel receipt, inspection, dissection, packaging, and secure dry storage. FY 2012 funding continues the conceptual design for the facility, equipment, and related systems, as well as continues meeting the National Environmental Policy Act's requirements and project oversight (e.g., engineering procurement and construction management). Detailed project engineering and design work will commence in FY 2013 and construction will commence in FY 2015.

These vital projects will replace facilities that date back to the dawn of the Cold War with modern facilities that can support the full range of nuclear security missions – including maintaining the nuclear deterrent, preventing proliferation, securing vulnerable nuclear material, powering the nuclear Navy and providing the nation with the best emergency response and counterterrorism capabilities possible. They will also ensure that NNSA continues to work with the Department of Defense and other interagency partners to keep the nation safe.

Implementing the President's Nuclear Security Agenda

The FY 2012 budget request also provides the resources required to continue **to work toward the President's commitment to secure the most vulnerable nuclear material around the world within four years, a key national security goal**. The budget request includes $2.5 billion for **Defense Nuclear Nonproliferation** in FY 2012 and $14.2 billion over the next five years to reduce the global nuclear threat by detecting, securing, safeguarding, disposing and controlling nuclear and radiological material worldwide, as well as promoting the responsible application of nuclear technology and science. Working together across the nuclear security enterprise, and in collaboration with our colleagues in a range of U.S. agencies, as well as with international organizations and partners in over 100 countries, we carry out these efforts globally on a daily basis.

This request reflects the significant accomplishments of NNSA's nuclear nonproliferation programs and seeks the resources needed to complete the President's goals and prepare to respond to new challenges. This budget request provides the resources required to meet commitments secured from international partners during the 2010 Nuclear Security Summit to remove all remaining highly enriched uranium (HEU) from Belarus, Ukraine, Mexico, and other countries by April 2012, expand our efforts to prevent nuclear materials trafficking, encourage global implementation of higher standards for the physical protection of nuclear material and nuclear facilities and work with the Defense Department to improve international nuclear security cooperation.

The request of $2.5 billion is a decrease of 5.1 percent from the President's FY 2011 Request, but an increase of 19.6 percent over the FY 2010 appropriation. This 5.1 percent or $138 million decline flows logically from the FY 2011 request which was 'front loaded' to accelerate the effort to secure vulnerable nuclear materials within the President's stated timeframe. Even with this decrease, the NNSA's budget request remains consistent with our overall strategy to ensure that programs supporting the President's commitment to lead an international effort to secure the most vulnerable

nuclear materials around the world in four years are fully funded in the Request. The Global Threat Reduction Initiative efforts related to radiological material, as well as the International Nuclear Material Protection and Cooperation program's activities to enhance the ability of our foreign partners to detect nuclear smuggling at border crossings and in Megaports have been prioritized to accelerate nuclear material lockdown efforts. The decrease in the request for Fissile Materials Disposition reflects the completion of long-lead procurements for the MOX and Waste Solidification projects, as well as the decision to defer funding associated with the $400 million U.S. pledge for the Russian Surplus Fissile Materials Disposition program until agreement is reached on milestones for the program. Prior Year unobligated balances of $30 million associated with contingency funds for construction under the Elimination of Weapons Grade Plutonium Production Program are proposed for cancellation, due to the program's anticipated completion of CD-4 activities in the June 2011 timeframe.

Improving the Way NNSA Does Business

In 2010, the NNSA observed 10 years of major accomplishments since its inception. We have secured and removed hundreds of nuclear weapons-worth of nuclear material around the world; we have built the world's fastest supercomputers and largest laser; we have pushed the frontiers of science and discovery on a daily basis; and we maintain an aging stockpile to ensure that it will remain a safe and effective deterrent. In the next decade, we have major projects to complete: the First Production Unit of the life extended B61 by 2017; addressing the W78 Life Extension Program (LEP) and the potential commonality with the W88; and completing the design and construction of our plutonium and uranium capability at CMRR & UPF by 2020, with operations by 2023 and 2024 respectively. We also continue to reduce our security footprint by consolidating nuclear missions and materials. We are on track to complete removal of Category I/II Special Nuclear Materials from the Lawrence Livermore National Laboratory by the end of 2012, which will enable NNSA to reduce security risks and costs there.

We recognize that the FY 2012 request for increased investments in the nuclear security enterprise comes at a time of acute financial challenges for our nation, and we recognize the need to be effective stewards of the taxpayer's money. We have made a series of management decisions and put in place reforms and reorganizations to better reflect a 21st century mission and prepare us for the next 10 years of the NNSA.

Consistent with the President's commitment to deliver on critical national nuclear security missions at the best value to the American taxpayer, the FY 2012 budget request will enable NNSA to continue to **improve the way it does business and manages resources.** The President's Budget Request for Federal oversight and staff included in the **Office of the Administrator** appropriation is $450.1 million, an increase of 0.4 percent over the FY 2011 request and an increase of 7 percent over the FY 2010 appropriation.

To maintain Congressional support for NNSA's programs, the enterprise has a responsibility to work together as "One NNSA," a fully integrated enterprise that

operates efficiently, is organized to succeed, that performs its work seamlessly, and speaks with one voice. This "One NNSA" needs to be a true partnership among Headquarters, the Site Offices and our Management & Operations (M&O) partners. We are working from the senior management level to ensure all 35,000 employees develop a culture where we all work in a more integrated and interdependent fashion.

Changing the way NNSA does business is an important part of the effort to transform a Cold War nuclear weapons complex into a 21st Century Nuclear Security Enterprise. NNSA simply cannot expect Congress to support major investments in its programs and its facilities unless the enterprise can demonstrate that the Department of Energy is a responsible steward of the taxpayer's money.

NNSA needs to do better, which is why the federal sector leadership is working with its M&O partners to streamline the enterprise governance model in order to devote more resources to critical mission work and maximize NNSA's ability to complete its mission safely and securely.

NNSA is making sure that it has the right contracting strategy in place. The agency is improving its project management by, for example, ensuring that NNSA no longer sets cost and schedule performance baselines on construction projects until design work is 90 percent complete, ensuring it has the right leadership teams in place, and performing independent cost reviews. NNSA has also created a new policy and oversight office for managing major projects, the office of "Acquisitions and Project/Construction Management." The new office reports directly to the Administrator. This will help ensure that project management gets the high level focus it requires. In addition, we are moving to federalize pilots for our secure transportation program in order to gain efficiencies and maintain operational control. Finally, as the Facilities Infrastructure and Recapitalization Program (FIPR) comes to an end, we will create the Capabilities Based Facilities and Infrastructure (CBFI) activity to continue to focus on maintaining the infrastructure we have.

We are already beginning to see results. NNSA is increasingly recognized for its efforts to be an effective steward of tax dollars. For example, since 2007, NNSA's Supply Chain Management Center has saved $213 million by using pooled purchasing power to drive efficiencies across the enterprise. In the last year NNSA's Kansas City Plant won the prestigious Malcolm Baldrige Award, America's highest honor for innovation and performance excellence. Two other NNSA programs were recognized with Project Management Institute (PMI) awards. In 2010, the Global Threat Reduction Initiative became the first federal project to receive PMI's Distinguished Project Award, while the National Ignition Facility at Lawrence Livermore National Laboratory received PMI's project of the year.

Conclusion

Our Nation has carefully evaluated its security needs in an international landscape that remains challenging and uncertain. NNSA has charted a path forward that shows our

unwavering commitment to the Nation's security and enhances our formidable capabilities to address broader security challenges.

The NNSA is a technically based organization with a strong nuclear heritage that serves as the base for our contribution to a wide range of national security solutions. NNSA is rooted in the management of our Nation's nuclear weapons stockpile, the application of nuclear energy for naval propulsion and its nonproliferation programs. Additionally, NNSA capabilities support a broad range of U.S. and international activities that address existing dangers, identify and prepare for future challenges, and advise the U.S. Government and our international partners on nuclear security matters.

This five year budget request takes the NNSA well into its second decade and strengthens the capabilities that are integral elements of our nuclear deterrent. Our challenge is to retain the essential capabilities and to identify and develop those needed for the future.

Appropriations Detail:

Following are more detailed descriptions of each of the four specific NNSA appropriations.

*****

National Nuclear Security Administration

Appropriation and Program Summary Tables
Outyear Appropriation Summary Tables

FY 2012 BUDGET TABLES
National Nuclear Security Administration

Overview
Appropriation Summary

(dollars in thousands)

	FY 2010 Actual Approp	FY 2011 Request	FY 2011 CR	FY 2012 Request	FY 2012 vs. FY 2010 $	FY 2012 vs. FY 2010 %	FY 2012 vs. FY 2011 $	FY 2012 vs. FY 2011 %
National Nuclear Security Administration								
Office of the Administrator	420,754	448,267	420,754	450,060	29,306	7.0%	1,793	0.4%
Weapons Activities	6,386,371	7,008,835	7,008,835	7,629,716	1,243,345	19.5%	620,881	8.9%
Defense Nuclear Nonproliferation	2,131,382	2,687,167	2,136,709	2,549,492	418,110	19.6%	-137,675	-5.1%
Naval Reactors	945,133	1,070,486	945,133	1,153,662	208,529	22.1%	83,176	7.8%
Subtotal, NNSA	**9,883,640**	**11,214,755**	**10,511,431**	**11,782,930**	**1,899,290**	19.2%	**568,175**	**5.1%**
Transfer of prior year balances	-10,000	0	0	0	0	0%	0	0%
Total, NNSA	**9,873,640**	**11,214,755**	**10,511,431**	**11,782,930**	**1,899,290**	**19.2%**	**568,175**	**5.1%**

Outyear Appropriation Summary
NNSA Future-Years Nuclear Security Program (FYNSP)

(dollars in thousands)

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
NNSA					
Office of the Administrator	450,060	442,992	441,242	441,522	440,591
Weapons Activities	7,629,716	7,948,673	8,418,480	8,683,538	8,905,597
Defense Nuclear Nonproliferation	2,549,492	2,771,068	2,907,934	2,983,984	3,038,395
Naval Reactors	1,153,662	1,232,278	1,289,917	1,474,200	1,569,800
Total, NNSA	**11,782,930**	**12,395,011**	**13,057,573**	**13,583,244**	**13,954,383**

Office of the Administrator

Overview
Appropriation Summary by Program

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2011 Continuing Resolution	FY 2012 Request
Office of the Administrator				
Office of the Administrator	418,074	448,267	410,754	450,060
Congressionally Directed Projects	13,000	0	0	0
Use of Prior Year Balances	-10,320	0	0	0
Subtotal, Office of the Administrator	**420,754**	**448,267**	**410,754**	**450,060**
Transfer of Prior Year Balances	-10,000	0	0	0
Total, Office of the Administrator	**410,754**	**448,267**	**410,754**	**450,060**

Public Law Authorization:
Energy and Water Development and Related Agencies Appropriations Act, 2010 (P.L. 111-85)

Outyear Appropriation Summary by Program

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Office of the Administrator	**442,992**	**441,242**	**441,522**	**440,591**

Office of the Administrator

Congressionally Directed Projects
Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Congressionally Directed Projects	13,000	0	0

Weapons Activities

Overview
Appropriation Summary by Program

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2011 CR	FY 2012 Request
Weapons Activities				
Directed Stockpile Work	1,564,290	1,898,379		1,963,583
Science Campaign	294,548	365,222		405,939
Engineering Campaign	149,679	141,920		143,078
Inertial Confinement Fusion Ignition and High Yield Campaign	457,486	481,548		476,274
Advanced Simulation and Computing Campaign	566,069	615,748		628,945
Readiness Campaign	106,744	112,092		142,491
Readiness in Technical Base and Facilities	1,810,279	1,848,970		2,326,134
Secure Transportation Asset	240,683	248,045		251,272
Nuclear Counterrorism Incident Response	223,379	233,134		222,147
Program	95,575	94,000		96,380
Site Stewardship	63,308	105,478		104,002
Defense Nuclear Security	769,823	719,954		722,857
Cyber Security	123,338	124,345		126,614
National Security Applications	0	20,000		20,000
Congressionally Directed Projects	3,000	0		0
Use/Recission of Prior Year Balances	-81,830	0		0
Total, Weapons Activities	**6,386,371**	**7,008,835**	**7,008,835**	**7,629,716**

Public Law Authorization:
National Defense Authorization Act for Fiscal Year 2010 (P.L. 111-84)
Energy and Water Development and Related Agencies Appropriations Act, 2010 (P.L. 111-85)
National Nuclear Security Administration Act, (P.L. 106-65), as amended

Outyear Appropriation Summary by Program*

	(dollars in thousands)			
	FY 2013	FY 2014	FY 2015	FY 2016
Weapons Activities				
Directed Stockpile Work	2,111,439	2,327,859	2,529,992	2,630,707
Science Campaign	418,216	416,284	394,315	404,097
Engineering Campaign	168,418	165,898	159,449	158,693
Inertial Confinement Fusion Ignition and High Yield Campaign	476,381	471,668	485,237	495,026
Advanced Simulation and Computing Campaign	616,104	628,100	643,120	659,210
Readiness Campaign	130,753	130,754	133,706	135,320
Readiness in Technical Base and Facilities	2,484,259	2,742,504	2,729,657	2,734,890
Secure Transportation Asset	249,456	252,869	261,521	267,773
Nuclear Counterrorism Incident Response	219,737	232,680	236,045	242,205
Facilities and Infrastructure Recapitalization Program	94,000	0	0	0
Site Stewardship	104,699	175,370	207,488	212,706
Defense Nuclear Security	729,795	729,173	756,110	814,967
Cyber Security	125,416	125,321	126,898	130,003
National Security Applications	20,000	20,000	20,000	20,000
Total, Weapons Activities	**7,948,673**	**8,418,480**	**8,683,538**	**8,905,597**

* The annual totals include an allocation to NNSA from the Department of Defense's (DoD) Research, Development, Testing and Evaluation (RDT&E) account entitled: "NNSA Program Support." The amounts for Weapons Activities included from this DoD account are FY 2013, $433.172 million; FY 2014, $550.902 million; FY 2015, $854.900 million; and FY 2016, $637.933 million.

Directed Stockpile Work

Funding Profile by Subprogram

	(dollars in thousands)		
	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Directed Stockpile Work			
Life Extension Programs			
B61 Life Extension Program	0	0	223,562
W76 Life Extension Program	231,888	249,463	257,035
Subtotal, Life Extension Programs	**231,888**	**249,463**	**480,597**
Stockpile Systems			
B61 Stockpile Systems	114,195	317,136	72,396
W62 Stockpile Systems	2	0	0
W76 Stockpile Systems	65,451	64,521	63,383
W78 Stockpile Systems	52,167	85,898	109,518
W80 Stockpile Systems	20,107	34,193	44,444
B83 Stockpile Systems	36,689	39,349	48,215
W87 Stockpile Systems	53,848	62,603	83,943
W88 Stockpile Systems	42,743	45,666	75,728
Subtotal, Stockpile Systems	**385,202**	**649,366**	**497,627**
Weapons Dismantlement and Disposition	**95,786**	**58,025**	**56,770**
Stockpile Services			
Production Support	300,037	309,761	354,502
Research & Development Support	37,071	38,582	30,264
Research & Development Certification and Safety	189,174	209,053	190,892
Management, Technology, and Production	183,223	193,811	198,700
Plutonium Sustainment	141,909	190,318	154,231
Subtotal, Stockpile Services	**851,414**	**941,525**	**928,589**
Total, Directed Stockpile Work	**1,564,290**	**1,898,379**	**1,963,583**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Directed Stockpile Work				
Life Extension Programs				
B61 Life Extension Program	279,206	320,894	396,869	426,415
W76 Life Extension Program	255,000	255,000	255,000	260,099
Subtotal, Life Extension Programs	**534,206**	**575,894**	**651,869**	**686,514**
Stockpile Systems				
B61 Stockpile Systems	72,364	72,483	70,488	71,534
W62 Stockpile Systems	0	0	0	0
W76 Stockpile Systems	65,445	63,580	63,537	65,727
W78 Stockpile Systems	151,207	329,354	333,978	316,507
W80 Stockpile Systems	46,540	50,457	58,898	59,775
B83 Stockpile Systems	57,947	72,516	65,941	54,663
W87 Stockpile Systems	85,689	68,774	63,638	65,492
W88 Stockpile Systems	105,582	78,602	163,626	226,060
Subtotal, Stockpile Systems	**584,774**	**735,766**	**820,106**	**859,758**
Weapons Dismantlement and Disposition	**43,404**	**52,090**	**54,205**	**55,495**
Stockpile Services				
Production Support	319,805	320,614	332,371	341,203
Research & Development Support	31,059	31,824	33,116	33,904
Research & Development Certification and Safety	241,658	242,424	250,963	255,747
Management, Technology, and Production	199,080	207,290	215,468	222,137
Plutonium Sustainment	157,453	161,957	171,894	175,949
Subtotal, Stockpile Services	**949,055**	**964,109**	**1,003,812**	**1,028,940**
Total, Directed Stockpile Work	**2,111,439**	**2,327,859**	**2,529,992**	**2,630,707**

Science Campaign

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Science Campaign			
Advanced Certification	19,269	76,972	94,929
Primary Assessment Technologies	82,838	85,723	86,055
Dynamic Materials Properties	86,371	96,984	111,836
Advanced Radiography	28,489	23,594	27,058
Secondary Assessment Technologies	77,581	81,949	86,061
Total, Science Campaign	**294,548**	**365,222**	**405,939**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Science Campaign				
Advanced Certification	97,229	103,271	82,000	84,174
Primary Assessment Technologies	88,893	85,894	88,368	88,831
Dynamic Materials Properties	114,980	114,170	106,398	114,620
Advanced Radiography	26,816	26,528	27,421	26,473
Secondary Assessment Technologies	90,298	86,421	90,128	89,999
Total, Science Campaign	**418,216**	**416,284**	**394,315**	**404,097**

Engineering Campaign

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Engineering Campaign			
Enhanced Surety	41,928	42,429	41,696
Weapons Systems Engineering Assessment Technology	17,977	13,530	15,663
Nuclear Survivability	20,980	19,786	19,545
Enhanced Surveillance	68,794	66,175	66,174
Total, Engineering Campaign	**149,679**	**141,920**	**143,078**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Engineering Campaign				
Enhanced Surety	51,922	50,810	47,649	48,773
Weapons Systems Engineering Assessment Technology	21,233	21,502	21,244	21,699
Nuclear Survivability	24,371	25,691	26,079	26,318
Enhanced Surveillance	70,892	67,895	64,477	61,903
Total, Engineering Campaign	**168,418**	**165,898**	**159,449**	**158,693**

Inertial Confinement Fusion Ignition and High Yield Campaign

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Inertial Confinement Fusion Ignition and High Yield Campaign			
Ignition	106,575	109,506	109,888
Support of Other Stockpile Programs	0	0	0
Diagnostics, Cryogenics, and Experimental Support	72,144	102,649	86,259
Pulsed Power Inertial Confinement Fusion	4,992	5,000	4,997
Joint Program in High Energy Density Laboratory Plasmas	4,000	4,000	9,100
Facility Operations and Target Production	269,775	260,393	266,030
Total, Inertial Confinement Fusion Ignition and High Yield Campaign	**457,486**	**481,548**	**476,274**

Outyear Funding Profile by Subprogram*

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Inertial Confinement Fusion Ignition and High Yield Campaign				
Ignition	74,410	65,000	60,000	55,000
Support of Other Stockpile Programs	35,590	45,000	50,000	55,000
Diagnostics, Cryogenics, and Experimental Support	76,267	70,159	70,517	69,617
Pulsed Power Inertial Confinement Fusion	5,000	5,000	5,000	5,000
Joint Program in High Energy Density Laboratory Plasmas	9,500	9,500	9,500	9,500
Facility Operations and Target Production	275,614	277,009	290,220	300,909
Total, Inertial Confinement Fusion Ignition and High Yield Campaign	**476,381**	**471,668**	**485,237**	**495,026**

* Outyear funding profile does not include adjustments in response to the FY 2013 change in Self-Constructed Asset Pool (overhead rate at Lawrence Livermore National Laboratory). These adjustments will be reflected in the FY 2013 President's Budget.

Advanced Simulation and Computing Campaign

Funding Schedule by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Advanced Simulation and Computing Campaign			
Integrated Codes	140,882	165,947	160,945
Physics and Engineering Models	61,189	62,798	69,890
Verification and Validation	50,882	54,781	57,073
Computational Systems and Software Environment	157,466	175,833	181,178
Facility Operations and User Support	155,650	156,389	159,859
Total, Advanced Simulation and Computing Campaign	**566,069**	**615,748**	**628,945**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Advanced Simulation and Computing Campaign				
Integrated Codes	160,170	163,287	167,194	171,377
Physics and Engineering Models	69,567	70,922	72,617	74,434
Verification and Validation	56,794	57,899	59,284	60,767
Computational Systems and Software Environment	170,462	173,782	177,937	182,389
Facility Operations and User Support	159,111	162,210	166,088	170,243
Total, Advanced Simulation and Computing Campaign	**616,104**	**628,100**	**643,120**	**659,210**

Readiness Campaign

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Readiness Campaign			
Stockpile Readiness	5,670	18,941	0
High Explosives and Weapon Operations	4,583	3,000	0
Nonnuclear Readiness	19,625	21,864	65,000
Tritium Readiness	68,245	50,187	77,491
Advanced Design and Production Technologies	8,621	18,100	0
Total, Readiness Campaign	**106,744**	**112,092**	**142,491**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Readiness Campaign				
Stockpile Readiness	0	0	0	0
High Explosives and Weapon Operations	0	0	0	0
Nonnuclear Readiness	65,000	65,000	65,000	65,000
Tritium Readiness	65,753	65,754	68,706	70,320
Advanced Design and Production Technologies	0	0	0	0
Total, Readiness Campaign	**130,753**	**130,754**	**133,706**	**135,320**

Readiness in Technical Base and Facilities

Funding Profile by Subprogram

	(dollars in thousands)		
	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Readiness in Technical Base and Facilities			
Operations of Facilities			
Kansas City Plant	117,895	186,102	156,217
Lawrence Livermore National Laboratory	86,083	80,106	83,990
Los Alamos National Laboratory	338,479	318,464	318,526
Nevada National Security Site	79,326	80,077	97,559
Pantex	131,227	121,254	164,848
Sandia National Laboratory	103,618	117,369	120,708
Savannah River Site	131,129	92,722	97,767
Y-12 National Security Complex	228,601	220,927	246,001
Institutional Site Support	120,041	40,970	199,638
Subtotal, Operations of Facilities	1,336,399	1,257,991	1,485,254
Program Readiness	72,873	69,309	74,180
Material Recycle and Recovery	69,224	70,429	85,939
Containers	23,321	27,992	28,979
Storage	24,558	24,233	31,272
Subtotal, Operations and Maintenance	**1,526,375**	**1,449,954**	**1,705,624**
Construction	283,904	399,016	620,510
Total, Readiness in Technical Base and Facilities	**1,810,279**	**1,848,970**	**2,326,134**

Outyear Funding Schedule by Subprogram

	(dollars in thousands)			
	FY 2013	FY 2014	FY 2015	FY 2016
Readiness in Technical Base and Facilities				
Operations of Facilities	1,655,922	1,673,863	1,681,568	1,699,396
Program Readiness	88,900	89,511	90,780	91,504
Material Recycle and Recovery	104,940	102,782	105,021	106,642
Containers	25,016	23,997	24,809	25,396
Storage	32,347	31,872	33,647	34,208
Subtotal, Operations and Maintenance	**1,907,125**	**1,922,025**	**1,935,825**	**1,957,146**
Construction	577,134	820,479	793,832	777,744
Readiness in Technical Base and Facilities	**2,484,259**	**2,742,504**	**2,729,657**	**2,734,890**

Secure Transportation Asset

Overview
Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriaton	FY 2011 Request	FY 2012 Request
Secure Transportation Asset (STA)			
Operations and Equipment	144,542	149,018	149,274
Program Direction	96,141	99,027	101,998
Total, Secure Transportation Asset	**240,683**	**248,045**	**251,272**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Operations and Equipment				
Operations and Equipment	141,560	142,270	146,865	150,561
Program Direction	107,896	110,599	114,656	117,212
Total, Operations and Equipment	**249,456**	**252,869**	**261,521**	**267,773**

Secure Transportation Asset

Operations and Equipment
Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Operations and Equipment			
Mission Capacity	79,787	84,010	79,641
Security/Safety Capability	27,160	27,001	32,261
Infrastructure and C5 Systems	24,399	23,681	25,997
Program Management	13,196	14,326	11,375
Total, Operations and Equipment	**144,542**	**149,018**	**149,274**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Operations and Equipment				
Mission Capacity	69,715	69,033	73,476	72,771
Security/Safety Capability	32,715	32,817	32,923	33,030
Infrastructure and C5 Systems	26,583	27,621	27,411	31,444
Program Management	12,547	12,799	13,055	13,316
Total, Operations and Equipment	**141,560**	**142,270**	**146,865**	**150,561**

Secure Transportation Asset

Program Direction
Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Program Direction			
Salaries and Benefits	78,301	83,311	87,307
Travel	7,337	7,746	8,024
Other Related Expenses	10,503	7,970	6,667
Total, Program Direction	**96,141**	**99,027**	**101,998**
Total, Full Time Equivalents	**584**	**637**	**622**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Program Direction				
Salaries and Benefits	91,067	93,307	96,888	99,038
Travel	8,301	8,550	8,806	8,984
Other Related Expenses	8,528	8,742	8,962	9,190
Total, Program Direction	**107,896**	**110,599**	**114,656**	**117,212**
Total, Full Time Equivalents	**649**	**649**	**649**	**649**

Nuclear Counterterrorism Incident Response

Funding by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Nuclear Counterterrorism Incident Response (Homeland Security)*			
Emergency Response (Homeland Security)*	140,481	134,092	137,159
National Technical Nuclear Forensics (Homeland Security)*	10,227	11,698	11,589
Emergency Management (Homeland Security)*	7,726	7,494	7,153
Operations Support (Homeland Security)*	8,536	8,675	8,691
International Emergency Management and Cooperation	7,181	7,139	7,129
Nuclear Counterterrorism (Homeland Security)*	49,228	64,036	50,426
Total, Nuclear Counterterrorism Incident Response	**223,379**	**233,134**	**222,147**

Outyear Target Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Nuclear Counterterrorism Incident Response				
Emergency Response (Homeland Security)*	136,918	138,440	140,098	142,816
National Technical Nuclear Forensics (Homeland Security)*	11,694	11,577	11,828	12,274
Emergency Management (Homeland Security)*	6,629	6,506	6,694	6,776
Operations Support (Homeland Security)*	8,799	8,749	9,000	9,110
International Emergency Management and Cooperation	7,139	7,032	7,276	7,664
Nuclear Counterterrorism (Homeland Security)*	48,558	60,376	61,149	63,565
Total, Nuclear Counterterrorism Incident Response	**219,737**	**232,680**	**236,045**	**242,205**

* Office of Management and Budget (OMB) Homeland Security designation.

Facilities and Infrastructure Recapitalization Program

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Facilities and Infrastructure Recapitalization Program			
Operations and Maintenance (O&M)			
Recapitalization	70,483	79,600	81,980
Infrastructure Planning	6,153	9,400	9,400
Facility Disposition	8,976	5,000	5,000
Subtotal, Operations and Maintenance (O&M)	**85,612**	**94,000**	**96,380**
Construction	9,963	0	0
Total, Facilities and Infrastructure Recapitalization Program	**95,575**	**94,000**	**96,380**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Facilities and Infrastructure Recapitalization Program				
Operations and Maintenance (O&M)				
Recapitalization	86,600	0	0	0
Infrastructure Planning	2,400	0	0	0
Facility Disposition	5,000	0	0	0
Subtotal, Operations and Maintenance (O&M)	**94,000**	**0**	**0**	**0**
Construction	0	0	0	0
Total, Facilities and Infrastructure Recapitalization Program	**94,000**	**0**	**0**	**0**

Site Stewardship

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Site Stewardship			
Operations and Maintenance	63,308	90,478	104,002
Construction	0	15,000	0
Total, Site Stewardship	**63,308**	**105,478**	**104,002**

Outyear and Over Target Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Site Stewardship				
Operations and Maintenance	102,458	175,370	192,488	197,706
Construction	2,241	0	15,000	15,000
Total, Site Stewardship	**104,699**	**175,370**	**207,488**	**212,706**

Safeguards and Security

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriations	FY 2011 Request	FY 2012 Request
Safeguards and Security (S&S)			
Defense Nuclear Security (Homeland Security)			
Operations and Maintenance	720,823	667,954	711,105
Construction	49,000	52,000	11,752
Total, Defense Nuclear Security	**769,823**	**719,954**	**722,857**
Cyber Security (Homeland Security)	**123,338**	**124,345**	**126,614**
Total, Safeguards and Security	**893,161**	**844,299**	**849,471**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Safeguards and Security (S&S)				
Defense Nuclear Security (Homeland Security)				
Operations and Maintenance	729,795	729,173	756,110	814,967
Construction	0	0	0	0
Total, Defense Nuclear Security	**729,795**	**729,173**	**756,110**	**814,967**
Cyber Security (Homeland Security)	**125,416**	**125,321**	**126,898**	**130,003**
Total, Safeguards and Security	**855,211**	**854,494**	**883,008**	**944,970**

Defense Nuclear Security

Funding Profile by Subprogram

	(dollars in thousands)		
	FY 2010 Actual Appropration	FY 2011 Request	FY 2012 Request
Defense Nuclear Security			
Operations and Maintenance (Homeland Security)			
Protective Forces	453,779	414,166	418,758
Physical Security Systems	74,000	73,794	107,636
Information Security	25,300	25,943	30,117
Personnel Security	30,600	30,913	37,285
Materials Control and Accountability	35,200	35,602	34,592
Program Management	83,944	80,311	77,920
Technology Deployment, Physical Security	8,000	7,225	4,797
Graded Security Protection Policy (formerly DBT)	10,000	0	0
Total, Operations and Maintenance (Homeland Security)	**720,823**	**667,954**	**711,105**
Construction (Homeland Security)	49,000	52,000	11,752
Total, Defense Nuclear Security	**769,823**	**719,954**	**722,857**

Outyear Funding Profile by Subprogram

	(dollars in thousands)			
	FY 2013	FY 2014	FY 2015	FY 2016
Defense Nuclear Security				
Operations and Maintenance (Homeland Security)				
Protective Forces	405,145	402,755	417,474	451,148
Physical Security Systems	129,491	130,266	132,872	140,537
Information Security	29,540	30,148	31,406	33,806
Personnel Security	39,063	39,375	39,862	41,205
Materials Control and Accountability	33,206	33,502	34,831	37,412
Program Management	86,706	86,363	92,631	103,527
Technology Deployment, Physical Security	6,644	6,764	7,034	7,332
Total, Operations and Maintenance (Homeland Security)	**729,795**	**729,173**	**756,110**	**814,967**
Construction (Homeland Security)	0	0	0	0
Total, Defense Nuclear Security	**729,795**	**729,173**	**756,110**	**814,967**

Cyber Security

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Cyber Security (Homeland Security)			
Infrastructure Program	99,838	97,849	107,618
Enterprise Secure Computing	21,500	21,500	14,000
Technology Application Development	2,000	4,996	4,996
Total, Cyber Security (Homeland Security)	**123,338**	**124,345**	**126,614**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Cyber Security (Homeland Security)				
Infrastructure Program	106,826	106,711	108,193	111,233
Enterprise Secure Computing	14,000	14,000	14,000	14,000
Technology Application Development	4,590	4,610	4,705	4,770
Total, Cyber Security (Homeland Security)	**125,416**	**125,321**	**126,898**	**130,003**

National Security Applications

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Operations and Maintenance	**0**	**20,000**	**20,000**
Total, National Security Applications	**0**	**20,000**	**20,000**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Total, National Security Applications	**20,000**	**20,000**	**20,000**	**20,000**

Weapons Activities

Congressionally Directed Projects
Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Congressionally Directed Projects	**3,000**	**0**	**0**

Defense Nuclear Nonproliferation

Overview
Appropriation Summary by Program

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2011 CR	FY 2012 Request
Defense Nuclear Nonproliferation				
Nonproliferation and Verification Research and Development	311,274	351,568		417,598
Nonproliferation and International Security	187,202	155,930		161,833
International Nuclear Materials Protection and Cooperation [a]	572,749	590,118		571,639
Elimination of Weapons-Grade Plutonium Production	24,507	0		0
Fissile Materials Disposition	701,900	1,030,713		890,153
Global Threat Reduction Initiative	333,500	558,838		508,269
Congressional Directed Projects	250	0		0
Total, Defense Nuclear Nonproliferation	**2,131,382**	**2,687,167**	**2,136,709**	**2,549,492**

Public Law Authorization:
Energy and Water Development and Related Agencies Appropriations Act, 2010 (P.L. 111-85)
National Nuclear Security Administration Act, (P.L. 106-65), as amended National Defense Authorization Act for Fiscal Year 2010 (P.L. 111-84)

Outyear Appropriation Summary by Program

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Defense Nuclear Nonproliferation				
Nonproliferation and Verification Research and Development	479,191	506,243	503,328	519,455
Nonproliferation and International Security	163,000	168,000	171,999	174,999
International Nuclear Materials Protection and Cooperation	519,000	633,000	656,000	531,723
Fissile Materials Disposition	1,112,877	963,691	991,657	1,071,940
Global Threat Reduction Initiative	497,000	637,000	661,000	740,278
Total, Defense Nuclear Nonproliferation	**2,771,068**	**2,907,934**	**2,983,984**	**3,038,395**

Nonproliferation and Verification Research and Development

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Nonproliferation and Verification R&D			
Proliferation Detection (PD)	175,813	225,004	218,350
Homeland Security-Related Proliferation Detection [Non-Add]	[50,000]	[50,000]	[50,000]
Nuclear Detonation Detection (NDD)	135,461	126,564	127,800
University of California Pension Payments and Contractor Pension Cost	0	0	71,448
Total, Nonproliferation and Verification R&D	**311,274**	**351,568**	**417,598**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Nonproliferation and Verification R&D				
Proliferation Detection (PD)	222,623	227,838	228,517	242,357
Homeland Security-Related Proliferation Detection [Non-Add]	[50,000]	[50,000]	[50,000]	[50,000]
Nuclear Detonation Detection (NDD)	139,568	145,405	145,811	154,098
University of California Pension Payments and Contractor Pension Cost	117,000	133,000	129,000	123,000
Total, Nonproliferation and Verification R&D	**479,191**	**506,243**	**503,328**	**519,455**

Nonproliferation and International Security

Funding Profile by Subprogram*

	(dollars in thousands)		
	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Nonproliferation and International Security			
Dismantlement and Transparency	72,763	49,207	0
Global Security Engagement and Cooperation	50,708	47,289	0
International Regimes and Agreements	42,703	39,824	0
Treaties and Agreements	21,028	19,610	0
Nuclear Safeguards and Security	0	0	53,925
Nuclear Controls	0	0	48,496
Nuclear Verification	0	0	46,995
Nonproliferation Policy	0	0	12,417
Total, Nonproliferation and International Security	**187,202**	**155,930**	**161,833**

* The Nonproliferation and International Security Program is proposing a budget structure change staring in FY 2012. The structure change creates a more efficient and clearer program organization with activities aligned along functional lines that reflect United States nonproliferation priorities and initiatives. The new structure depicts more clearly the alignment of people, technology, and resources to meet and implement nuclear nonproliferation objectives.

Outyear Funding Profile by Subprogram

	(dollars in thousands)			
	FY 2013	FY 2014	FY 2015	FY 2016
Nonproliferation and International Security				
Nuclear Safeguards and Security	56,038	57,757	59,132	60,163
Nuclear Controls	50,396	51,942	53,178	54,106
Nuclear Verification	43,662	45,001	46,073	46,876
Nonproliferation Policy	12,904	13,300	13,616	13,854
Total, Nonproliferation and International Security	**163,000**	**168,000**	**171,999**	**174,999**

International Nuclear Materials Protection and Cooperation

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
International Nuclear Materials Protection and Cooperation			
Navy Complex	33,880	34,322	33,664
Strategic Rocket Forces/12th Main Directorate	48,646	51,359	59,105
Rosatom Weapons Complex	71,517	105,318	80,735
Civilian Nuclear Sites	63,481	59,027	59,117
Material Consolidation and Conversion	13,611	13,867	14,306
National Programs and Sustainability	68,469	60,928	60,928
Second Line of Defense	272,446	265,297	263,784
International Contributions [a]	699	0	0
Total, International Nuclear Materials Protection and Cooperation	**572,749**	**590,118**	**571,639**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
International Nuclear Materials Protection and Cooperation				
Navy Complex	8,146	3,900	3,750	3,600
Strategic Rocket Forces/12th Main Directorate	42,014	6,150	5,900	5,650
Rosatom Weapons Complex	51,560	46,061	39,442	38,876
Civilian Nuclear Sites	48,292	44,249	46,996	46,996
Material Consolidation and Conversion	64,627	64,627	66,433	50,000
National Programs and Sustainability	39,006	39,006	41,734	39,006
Second Line of Defense	265,355	429,007	451,745	347,595
Total, International Nuclear Materials Protection and Cooperation	**519,000**	**633,000**	**656,000**	**531,723**

Elimination of Weapons-Grade Plutonium Production

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Elimination of Weapons-Grade Plutonium Production (EWGPP)			
Zheleznogorsk Plutonium Production Elimination (ZPPEP)	22,507	0	0
Crosscutting and Technical Support Activities	2,000	0	0
Total, Elimination of Weapons-Grade Plutonium Production (EWGPP)	**24,507**	**0**	**0**
Cancellation of unobligated balalnces			**-30,000**

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2013	FY 2014	FY 2015	FY 2016
Elimination of Weapons-Grade Plutonium Production	0	0	0	0

Fissile Materials Disposition

Funding Profile by Subprogram

	(dollars in thousands)		
	FY 2010 Current Appropriation	FY 2011 Request	FY 2012 Request
Fissile Materials Disposition (FMD)			
U.S. Surplus Fissile Materials Disposition			
Operations and Maintenance (O&M)			
U.S. Plutonium Disposition	91,659	278,940	274,790
U.S. Uranium Disposition	34,691	25,985	26,435
Supporting Activities	312	0	0
Subtotal, O&M	**126,662**	**304,925**	**301,225**
Construction	574,238	612,788	578,754
Total, U.S. Surplus FMD	**700,900**	**917,713**	**879,979**
Russian Surplus FMD			
Russian Materials Disposition	1,000	113,000	10,174
Total, Fissile Materials Disposition	**701,900**	**1,030,713**	**890,153**

Outyear Funding Profile by Subprogram

	(dollars in thousands)			
	FY 2013	FY 2014	FY 2015	FY 2016
Fissile Materials Disposition				
U.S. Surplus Fissile Materials Disposition (O&M)	422,575	480,280	531,134	686,135
Construction	637,802	430,661	402,773	354,805
Russian Surplus Fissile Materials Disposition	52,500	52,750	57,750	31,000
Total, Fissile Materials Disposition	**1,112,877**	**963,691**	**991,657**	**1,071,940**

Global Threat Reduction Initiative (GTRI)

Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Global Threat Reduction Initiative			
Highly Enriched Uranium (HEU) Reactor Conversion	**102,772**	**119,000**	**148,269**
Nuclear and Radiological Material Removal			
Russian-Origin Nuclear Material Removal	94,167	145,191	147,000
U.S.-Origin Nuclear Material Removal	9,889	16,500	9,000
Gap Nuclear Material Removal	9,111	108,000	56,000
Emerging Threats Nuclear Material Removal	5,556	16,000	5,000
International Radiological Material Removal	8,333	45,000	20,000
Domestic Radiological Material Removal (Homeland Security)*	17,778	25,000	20,000
Subtotal, Nuclear and Radiological Material Removal	**144,834**	**355,691**	**257,000**
Nuclear and Radiological Material Protection			
BN-350 Nuclear Material Protection	9,109	2,000	2,000
International Material Protection	41,463	57,000	50,000
Domestic Material Protection (Homeland Security)*	35,322	25,147	51,000
Subtotal, Nuclear and Radiological Material Protection	**85,894**	**84,147**	**103,000**
Total, Global Threat Reduction Initiative	**333,500**	**558,838**	**508,269**

* Office of Management and Budget (OMB) Homeland Security designation.

Outyear Funding Profile by Subprogram

	(dollars in thousands)			
	FY 2013	FY 2014	FY 2015	FY 2016
Global Threat Reduction Initiative				
HEU Reactor Conversion	**175,000**	**230,000**	**254,000**	**269,000**
Nuclear and Radiological Material Removal				
Russian-Origin Nuclear Material Removal	112,000	110,000	105,000	100,000
U.S.-Origin Nuclear Material Removal	8,000	3,000	3,000	3,000
Gap Nuclear Material Removal	56,000	20,000	10,000	5,000
Emerging Threats Nuclear Material Removal	5,000	5,000	5,000	5,000
International Radiological Material Removal	20,000	20,000	25,000	25,000
Domestic Radiological Material Removal (Homeland Security)*	20,000	20,000	28,000	29,000
Subtotal, Nuclear and Radiological Material Removal	**221,000**	**178,000**	**176,000**	**167,000**
Nuclear and Radiological Material Protection				
International Material Protection	50,000	86,000	87,000	91,000
Domestic Material Protection (Homeland Security)*	51,000	143,000	144,000	213,278
Subtotal, Nuclear and Radiological Material Protection	**101,000**	**229,000**	**231,000**	**304,278**
Total, Global Threat Reduction Initiative	**497,000**	**637,000**	**661,000**	**740,278**

* Office of Management and Budget (OMB) Homeland Security designation.

Defense Nuclear Nonproliferation

Congressionally Directed Projects
Funding Profile by Subprogram

(dollars in thousands)

	FY 2010 Actual Appropriation	FY 2011 Request	FY 2012 Request
Congressionally Directed Projects	**250**	**0**	**0**

Naval Reactors

Overview
Appropriation Summary by Program

	(dollars in thousands)		
	FY 2010 Actual Appropriations	FY 2011 Request	FY 2012 Request*
Naval Reactors Development			
Operations and Maintenance (O&M)	877,533	997,886	1,069,262
Program Direction	36,800	40,000	44,500
Construction	30,800	32,600	39,900
Total, Naval Reactors Development	**945,133**	**1,070,486**	**1,153,662**

* FY 2012 includes $27,800 DoD support for the Expended Core Facility M-290 Receiving Discharge Station line-item construction project.

Public Law Authorizations:
P.L. 83-703, "Atomic Energy Act of 1954"
"Executive Order 12344 (42 U.S.C. 7158), "Naval Nuclear Propulsion Program"
P.L. 107-107, "National Defense Authorizations Act of 2002", Title 32, "National Nuclear Security Administration"
John Warner National Defense Authorization Act for FY 2007, (P.L. 109-364)
FY 2008 Consolidated Appropriations Act (P.L. 110-161)
National Nuclear Security Administration Act, P.L. 106-65), as amended
FY 2009 Consolidated Appropriations Act (P.L. 111-8)
FY 2010 Energy and Water Related Agencies Appropriation Act (P.L. 111-85)

Outyear Appropriation Summary by Program*

	(dollars in thousands)			
	FY 2013	FY 2014	FY 2015	FY 2016
Naval Reactors Development				
Operations and Maintenance	1,093,038	1,181,847	1,234,610	1,245,900
Program Direction	47,040	49,670	52,390	54,200
Construction	92,200	58,400	187,200	269,700
Total, Naval Reactors Development	**1,232,278**	**1,289,917**	**1,474,200**	**1,569,800**

* The annual totals include an allocation to NNSA from the Department of Defense's (DoD) Research, Development, Testing and Evaluation (RDT&E) account entitled: "NNSA Program Support." The amounts included for Naval Reactors from this DoD account are FY 2013,
$5.7 million; FY 2014 $1.7 million; and FY 2015 $0.4 million.

Written Statement of Inès Triay
Assistant Secretary for Environmental Management
United States Department of Energy
Before the Subcommittee on Strategic Forces
Committee on Armed Services
United States House of Representatives

April 5, 2011

Good morning, Mr. Chairman, Ranking Member Sanchez, and Members of the Subcommittee. I am pleased to be here today to answer your questions on the President's Fiscal Year (FY) 2012 budget request for the Department of Energy's (DOE) Office of Environmental Management (EM). The EM FY 2012 budget request of $6.13 billion will protect human health and the environment through the safe environmental cleanup of the past nuclear weapons development and government-sponsored nuclear energy research.

Environmental Management Program Strategies: A National Responsibility

➢ *We reduce risks and protect our workers, our communities, and the environment through cleanup.*

EM's primary responsibility is to keep our employees, the public, and the states where cleanup sites are located, safe from radioactive and hazardous materials contamination. EM continues to adhere to a "Safety First" culture that integrates environment, safety, and health requirements and controls into all work activities. EM will continue improving safety performance with the goal of achieving zero accidents or incidents.

➢ *Our cleanup work is urgent and essential to the health and safety of communities across the nation.*

To best address the urgency of work to be done, EM continues to pursue its cleanup objectives of achieving the greatest risk reduction benefit per radioactive content (wastes that contain the highest concentrations of radionuclides), while meeting regulatory compliance commitments, and promoting best business practices to maximize cleanup progress.

EM's priorities to support this approach include:

- Activities to maintain a safe, secure, and compliant posture in the EM complex
- Radioactive tank waste stabilization, treatment, and disposal
- Spent (used) nuclear fuel (SNF) storage, receipt, and disposition
- Special nuclear materials (SNM) consolidation, processing, and disposition
- High-risk soil and groundwater remediation
- Transuranic (TRU) waste and mixed low-level (MLLW)/low-level waste (LLW) disposition

- Soil and groundwater remediation
- Excess facilities decontamination and decommissioning (D&D)

➢ *Our mission is not discretionary- we must address the cold war environmental legacy and honor our regulatory commitments.*

Over the last two decades, EM's compliance posture has evolved to where EM and its regulators have a well-defined and established relationship. The FY 2012 EM budget request maintains a compliant position by honoring regulatory commitments. There are approximately 40 cleanup agreements that provide a framework for cleaning up the cold war legacy that EM will continue to abide by. EM's goal in FY 2012 is to meet 100 percent of its enforceable agreement milestones that are found within cleanup agreements.

The FY 2012 EM budget request funds the Tri-Party Agreement settlement with Washington State, as well as, TRU waste retrievals at Idaho consistent with terms of the Idaho Settlement Agreement. Additionally, the FY 2012 EM budget request positions Los Alamos National Laboratory to comply with the 2005 Compliance Order on Consent. Though it is crucial and necessary for EM to fund the activities required by these agreements and consent orders, EM must also have the flexibility to balance these priorities with other requirements across the complex. In addition, at Oak Ridge, EM must demonstrate soil and groundwater cleanup progress in order to comply with other regulatory commitments.

➢ *Time is not on our side- costs and risks increase over time.*

The EM program is large and complex, with urgent activities that must be performed. For example, at the Idaho National Laboratory, plutonium and organic solvent wastes primarily from the Rocky Flats Plant were disposed in shallow pits from 1952 to 1970. The waste was contained in carbon steel drums which have deteriorated over the years as a result of water infiltration and flooding events. These wastes sit above the sole source Snake River Plain Aquifer, which is the size of Lake Erie, and is the irrigation supply for a substantial agricultural industry in the northwest. The EM FY 2012 budget request will allow Idaho National Laboratory to make significant progress in protecting the aquifer with an aggressive program to retrieve, repackage, and dispose of these wastes at the Waste Isolation Pilot Plant (WIPP) by the anticipated completion date in 2015.

Another example is at the Savannah River Site. Tank 48 is a modern, Type III waste tank that holds approximately 240,000 gallons of highly radioactive liquid waste that is also contaminated with hazardous organic materials from past operations of the In-Tank Precipitation process in the mid-1990's. The waste in this tank must be kept isolated due to flammability and chemical incompatibility concerns; however, it occupies space in the tank farm that is required to support the aggressive waste treatment pace needed to clean and close all Savannah River Site tanks by 2026. A Fluidized Bed Steam Reforming process is under development to eliminate the organic component of the waste in Tank 48 and allow the radioactive components to be vitrified in the Defense Waste Processing

Facility to eliminate the hazard and allow this valuable tank space to be returned to tank farm service. The EM FY 2012 budget request supports the Fluidized Bed Steam Reforming process startup in late 2014 and completion of Tank 48 waste treatment by late 2016, allowing Savannah River Site to maintain the accelerated waste cleanup and tank cleaning efforts.

At Los Alamos National Laboratory, the primary mission since 1943 has been nuclear weapons research and development. Waste resulting from this research includes both liquid and solid radioactive waste from plutonium processing, organic solvents, highly explosive by-products, metals and polychlorinated biphenyls. At Los Alamos National Laboratory, the cleanup of soil and groundwater is regulated by the New Mexico Environmental Department pursuant to RCRA. The 2005 Compliance Order on Consent requires that environmental investigations and remediation activities be completed by 2015. There are approximately 860 of the original 2,100 waste sites remaining that require investigation and remediation actions. The EM FY 2012 budget request will allow Los Alamos National Laboratory to maintain the momentum that is necessary to meet the Consent Order requirements.

Finally, there are 29 cubic meters of radioactive sludge currently stored within the water filled K-West Basin at the Hanford Site, approximately 400 yards from the Columbia River. The sludge was created when irradiated fuel rods deteriorated and corroded after many years of underwater storage. The EM FY 2012 budget request allows EM to remove the sludge from the basins and store it in a safer location until 2014, when it will be treated and packaged for transportation to WIPP for disposal.

- *We have demonstrated value for the American Taxpayers by delivering significant progress in the past several years in reducing risks associated with the Cold War environmental legacy- but our work is not done.*

Over the past two years, EM has made significant progress in accelerating environmental cleanup across the DOE complex. EM estimates that by the end of FY 2011, the acceleration of D&D of excess facilities and cleanup of contaminated areas will reduce the legacy cleanup footprint by 40 percent, leading to approximately 90 percent footprint reduction by 2015. Footprint reduction efforts have resulted in estimated cost avoidances of approximately $3 billion and cost savings of approximately $4 billion in life-cycle cost. In terms of size, in 1989, the legacy cleanup footprint was 3,125 square miles. Twenty years later, the footprint was reduced to 900 square miles. EM projects that by the end of FY 2011, 540 square miles of footprint will remain. By 2015, EM envisions that the footprint could be reduced to 90 square miles. The shrinking of the legacy footprint will lead to the D&D of 2,636 facilities and 7,745 completed remediation actions. By 2020, EM envisions that legacy cleanup will be virtually complete, with Hanford being the only large site with multiple cleanup missions remaining.

In FY 2012, the continued management and removal of legacy TRU waste from generator sites will directly support risk reduction and aid in the goal of reducing site footprint. EM estimates that the disposition of 90 percent of legacy TRU waste will be

complete by 2015. To accomplish the 2015 goal, 40,000 cubic meters of TRU waste will need to be disposed. At this time, 78,000 cubic meters of the 118,000 cubic meters total of legacy TRU waste have already been disposed. By 2020, EM envisions that all TRU waste will be sent to WIPP, with the exception of TRU waste from the Hanford Site.

- *The Environmental Management portfolio is one of our nation's largest environmental liabilities-we have a responsibility to relieve future generations of this liability.*

EM will continue identifying opportunities to make strategic investments that reduce the overall cost of the cleanup program while condensing project completion dates. The current life-cycle cost estimate for EM is between $275 billion to $308 billion. This includes $90 billion in actual costs from 1997 through 2010, and an additional estimate of $185 billion to $218 billion to complete EM's remaining mission.

Tank waste accounts for approximately one third of the total EM life-cycle cost and is a major contributor to EM's overall environmental liability. To address this large liability, EM has created the Enhanced Tank Waste Treatment Initiative led by the Enhanced Waste Strategic Team. The Team is looking at ways to focus and integrate efforts to develop and deploy technologies that are necessary to accelerate the completion of the tank waste cleanup mission. EM will focus its technology development and deployment investments to mature the science and technology associated with tank waste processing, treatment, and waste loading. In addition, EM will leverage base funding to optimize tank waste processing capabilities to enhance current tank waste cleanup approaches. To date, EM's Enhanced Tank Waste Strategic Team has identified seven major transformational strategies to reduce the life-cycle cost and length of program execution. Several of these strategies have been incorporated into Savannah River Site's tank waste program while many of these strategies are also being considered for incorporation into the Hanford site's tank waste programs. At Savannah River Site, these strategies will allow EM to accelerate the tank waste cleanup schedule by six years, reducing EM's life-cycle cost by $3 billion.

To address many of the high risk activities, $133 million has been requested for research and development in FY 2012, of which $60 million is requested within the Office of River Protection to support Hanford and Savannah River Site tank waste issues. The requested funding will be used to continue the acceleration of development and deployment of needed technologies related to tank treatment, waste chemistry for characterization and separation; advanced retrieval technologies; improved melter throughput; and increased glass waste loading. The budget request of $32.3 million for EM's Technology Development and Deployment Program supports groundwater and soil remediation subsurface science issues through the development of state-of-the-art methods and models to understand and quantify subsurface flow and contaminant transport behavior in complex geological systems. This reduces the uncertainty in the current models and methods for performance assessments. In addition, Technology Development and Deployment funding will be utilized in FY 2012 to support maturation of the Hot Isostatic Press technology to be deployed at Idaho National Laboratory.

However, this encompasses only a portion of the overall research and development initiatives being conducted across the complex in conjunction with the national laboratories. In FY 2012, the remaining funds for many of these research investments are embedded within the individual projects and programs at EM sites and are critical investments in science and technology that range from technology adaptations to demonstrations that promote the maturation of technology.

- *Improving contract and project management to ensure projects are on schedule and within cost.*

The EM program is large and complex, requiring the tracking of numerous schedules and costs. To ensure that EM delivers the best value for the American taxpayers, the FY 2012 budget request reflects an increased focus on improved acquisition, contract, and project management. To achieve this, EM will develop contract statements of work and deliverables based on clear project requirements, robust front-end planning and risk analysis, ensuring that nuclear safety requirements are addressed early, and changes to the contract and the project baseline are managed through strict timely change control processes. EM will continue to implement performance-based contracts where appropriate.

In a continuation of EM's Journey to Excellence, the EM Base Program Portfolio was restructured using the same project framework used in establishing the American Recovery and Reinvestment Act of 2009 (Recovery Act) projects. Base program operations activities have been separated from capital work within a Project Baseline Summary. Capital Asset Projects will be managed in accordance with DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*. EM is currently developing the policies and guidelines for operations activities, as they are not governed by DOE Order 413.3B.

EM's continued progress in contracts and project management has resulted in EM meeting three of the five criteria needed to be removed from the Government Accountability Office's (GAO) High Risk List. EM's objective has been to improve contract and project management to increase its efficiency and effectiveness so that EM delivers high quality performance for the American taxpayers. GAO has noted that: EM has demonstrated strong commitment and leadership; demonstrated progress in implementing corrective measures; and developed a corrective action plan that identifies root causes, effective solutions, and a near-term plan for implementing those solutions.

One of GAO's standing concerns is that EM must provide the capacity (people and resources) to address problems. To address GAO's first concern, three Program Sponsors at EM Headquarters have been assigned to three large capital projects: Sodium Bearing Waste Treatment Facility at Idaho; Salt Waste Processing Facility at Savannah River Site; and Uranium-233 Down-Blending and Disposition Project at Oak Ridge. EM is also enhancing its partnership with the U.S. Army Corps of Engineers by placing senior construction experts from the Corps as Deputy Federal Project Directors at these construction projects. EM has obtained expertise from the national laboratories,

including hiring a Chief Scientist from Los Alamos National Laboratory to provide recommendations to the Assistant Secretary for Environmental Management on complex technical and design issues. The EM program has defined goals and actions in order to make EM the employer of choice to attract highly knowledgeable candidates while highlighting ways to strengthen our current workforce. Additionally, EM is continuing to conduct Independent Project Reviews that include a review on project staffing adequacy.

GAO's second concern is that EM must monitor and independently validate the many corrective measures that it has taken are both effective and sustainable over the long term. To address GAO's second concern, EM is continuing to validate that the corrective measures taken are effective and sustainable by improved management involvement at the Monthly Project Review meetings with each site. EM also conducts semi-annual Independent Project Reviews for larger projects. The Department believes that there are success criteria that can be used to demonstrate to GAO that EM performance justifies removal from the High Risk List. These success criteria provide for 90 percent of projects to be completed within 10 percent of the original cost baseline based on a three year-rolling average. Additionally, EM will continue to share project and operations activity information openly with GAO and other stakeholders. EM is confident that it will maintain project performance, thereby demonstrating that ongoing improvements in contract and project management are effective and sustainable.

Highlights of the FY 2012 Budget Request

The Department's FY 2012 budget request for EM is $6.13 billion, of which $5.41 billion is for defense environmental cleanup activities. Examples of planned activities and milestones for FY 2012 by site-specific categories are:

Idaho National Laboratory, Idaho

(Dollars in Thousands)

FY 2010 Current Appropriation	FY 2012 Request
$469,168	**$392,000**

- *Complete construction and readiness testing in preparation for startup of operations of the Sodium Bearing Waste Treatment Facility.*

  The Sodium Bearing Waste Treatment Project supports DOE's EM mission of safely storing and treating liquid radioactive wastes. This project will treat approximately 900,000 gallons of sodium bearing waste stored in tanks that are 35 to 45 years old. The treatment of this waste will enable EM close the final four tanks, complete treatment of all tank waste at Idaho, and meet the Notice of Noncompliance- Consent Order Modification to cease use of the Tank Farm Facility by December 31, 2012. Startup operations of the Sodium Bearing Waste Treatment Facility are estimated to begin in January 2012.

- *Ship contact-handled TRU waste to WIPP, and dispose of MLLW and LLW, as required in the 1995 Idaho Settlement Agreement.*

  During FY 2012, 4,500 cubic meters of contact-handled TRU waste will be shipped to WIPP for disposal. In addition 1,640 cubic meters of MLLW/LLW will be shipped for disposal to WIPP by September 2012.

Los Alamos National Laboratory, New Mexico

(Dollars in Thousands)

FY 2010 Current Appropriation	FY 2012 Request
$200,438	**$361,577**

- *Disposition of MLLW and TRU waste.*

  The Solid Waste Stabilization and Disposition Project is comprised of the treatment, storage, and disposal of legacy TRU waste and MLLW generated between 1970 and 1999 at Los Alamos National Laboratory. The end-state of this project is the safe disposal of legacy waste. In FY 2012, in support of the requirements in the 2005 Compliance Order on Consent, Los Alamos National Laboratory will dispose of 1,300 cubic meters of MLLW and 1,000 cubic meters of TRU.

- *Maintain soil and water remediation.*

  The Soil and Water Remediation Project scope at Los Alamos National Laboratory includes identification, investigation, and remediation of chemical and/or radiological contamination attributable to past Laboratory operations and practices. The remaining scope of the project includes characterization, monitoring, and protection of the surface and groundwater at the Laboratory and approximately 860 Potential Release Sites left to be investigated, remediated or closed by evaluation and assessment of human health and ecological risks. In FY 2012, activities include complete groundwater monitoring and reporting requirements consistent with the 2005 Compliance Order on Consent and the Resource Conservation and Recovery Act Operating Permit; and complete and deliver the revised Corrective Measures Evaluation Report for Material Disposal Area G to meet the 2005 Compliance Order on Consent requirements.

Oak Ridge Site, Tennessee

(Dollars in Thousands)

(Includes Safeguards & Security Funding)

FY 2010 Current Appropriation	FY 2012 Request
$436,448	**$401,056**

- *Maintain operation of the Transuranic Waste Processing Center.*

  By the end of FY 2012, Oak Ridge will process a cumulative total of 163 cubic meters of contact-handled TRU waste and a cumulative total of 221 cubic meters of remote-handled TRU waste at the Transuranic Waste Processing Center in preparation for eventual shipment and disposal at WIPP. The continued operation of the Transuranic Waste Processing Center to process contact-handled TRU and remote-handled TRU enables Oak Ridge to meet the Site Treatment Plan milestones.

Richland Site, Washington

(Dollars in Thousands)

(Includes Safeguards & Security Funding)

FY 2010 Current Appropriation	FY 2012 Request
$1,080,503	**$1,005,987**

- *Continue facility D&D and remedial actions within the River Corridor.*

  The River Corridor Closure Project includes the D&D of contaminated facilities and various remedial actions within the geographic area of over 210 square miles within the Hanford Site adjacent to the Columbia River. In an effort to reduce Hanford's cleanup footprint, FY 2012 activities include: complete D&D of two buildings and removal of one soil site in the 100 K Area; complete the selected removal and/or remedial actions for eleven of the high priority facilities in the 300 Area; and initiate remediation of the deep chromium contamination waste site 100-C-7.

- *Conduct high priority groundwater remediation efforts.*

  To protect the groundwater resources within the Hanford site, remediation activities that address groundwater contamination, including carbon tetrachloride, chromium, technetium, and strontium must be conducted. In FY 2012, EM will begin Phase 1 operations of 200W pump and treat system. To meet FY 2012

enforceable agreement milestones, planned activities include, but are not limited to: continue the Remedial Investigation/Feasibility Study process to develop proposed plan for all 100 and 300 Areas' Operable Units; and expand the current pump-and-treat system at 100-HR-3 Operable Unit.

Office of River Protection, Washington

(Dollars in Thousands)

FY 2010 Current Appropriation	FY 2012 Request
$1,096,600	**$1,361,391**

- *Manage the tank farms in a safe and compliant manner until closure.*

  The radioactive waste stored in the Hanford tanks was produced as part of the nation's defense program and has been accumulating since 1944. To ensure protection of the Columbia River, 53 million gallons of radioactive waste must be removed and processed to a form suitable for disposal, and the 177 underground storage tanks stabilized. In FY 2012, activities include: complete bulk retrieval from one C Farm single-shell tank; complete hard heel removal from three C Farm single-shell tanks; and continue to perform single-shell tank integrity evaluations.

- *Continue construction of the WTP complex.*

  WTP is critical to the completion of the Hanford tank waste program by providing the primary treatment capability to immobilize (vitrify) the radioactive tank waste at the Hanford Site. The WTP complex includes five major facilities: Pretreatment Facility, High-Level Waste Facility, Low-Activity Waste Facility, Analytical Laboratory, and the Balance of Facilities. As of January 2011, WTP construction is approximately 58 percent complete. In FY 2012, activities include: at the Pretreatment Facility, place 3,500 cubic yards of concrete (89 percent complete) and install 825 tons of structural steel, (44 percent complete); at the High-Level Waste Facility, install the Thermal Catalytic Oxidizers and the Offgas Carbon Adsorber; the design of the Low-Activity Waste Facility will be complete; at the Analytical Laboratory, construction will be complete consisting of all major civil, structural, piping, mechanical, and electrical power equipment installed and inspected and all piping hydro-tested to confirm capability to meet design requirements; and at the Balance of Facilities, complete construction of the Chiller Compressor Plant and the Anhydrous Ammonia Facility.

Savannah River Site, South Carolina

(Dollars in Thousands)

(Includes Safeguards & Security Funding)

FY 2010 Current Appropriation	FY 2012 Request
$1,342,013	**$1,363,728**

- *Reduce radioactive liquid waste.*

  The mission of the Liquid Tank Waste Management Program at Savannah River Site is to safely and efficiently treat, stabilize, and dispose of approximately 37 million gallons of legacy radioactive waste currently stored in 49 underground storage tanks. In FY 2012, activities include: continue construction of the Salt Waste Processing Facility; continue operation of the Defense Waste Processing Facility and vitrify 312 canisters of HLW; operation of Actinide Removal Process and Modular Caustic Side Extraction at planned rates; complete construction of Saltstone Disposal Unit #2; continue Tank 48 Treatment Process Project; and close two tanks which will meet two Federal Facility Agreement tank closure commitments with due dates in the first quarter FY 2013. Closure of these two tanks is the first delivery on the recently approved tank acceleration strategy.

- *Continued storage, treatment, and disposal of LLW, MLLW, and hazardous waste.*

  In FY 2012, SRS will dispose of up to 2,517 cubic meters of newly generated LLW; dispose of 50 cubic meters of MLLW; and dispose of up to 150 cubic meters of hazardous waste.

WIPP, New Mexico

(Dollars in Thousands)

(Includes Safeguards & Security Funding)

FY 2010 Current Appropriation	FY 2012 Request
$234,981	**$233,771**

- *Operate WIPP in a safe and compliant manner and dispose of contact-handled and remote-handled TRU waste from 27 DOE sites.*

  WIPP in Carlsbad, New Mexico, is the nation's only mined geologic repository for the permanent disposal of defense-generated TRU waste. In FY 2012, the EM

budget request supports maintaining an average shipping capability of 21 contact-handled TRU waste and 5 remote-handled TRU waste shipments per week.

Conclusion

Mr. Chairman, Ranking Member Sanchez, and Members of the Subcommittee, I am honored to be here today representing the Office of Environmental Management. EM is committed to achieve its mission in a safe, effective, and efficient manner. EM will continue to apply innovative environmental cleanup strategies so that we may complete quality work safely, on schedule, and within cost thereby demonstrating value to the American taxpayers. I am pleased to answer any questions you may have.

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

APRIL 5, 2011

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). Clearly, this is a period of significant transition for DOE, which includes billions of dollars in construction projects and a huge portfolio of site cleanup work. The 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 and to resolve safety concerns early in the design process. The Board continues to champion the early integration of safety in design and efforts to strengthen DOE's safety culture. Today I will provide some background on the Defense Nuclear Facilities Safety Board (Board) and how we operate, and then I will provide the Board's assessment of safety issues related to DOE and NNSA defense nuclear facilities.

Legislative History and Statutory Mission of the Board

The Board was created by Congress in 1988. Congress tasked the Board to conduct safety oversight of defense nuclear facilities under the control or jurisdiction of DOE. 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, which has served to design, manufacture, test, maintain,

and decommission nuclear weapons. The Board is authorized to review and analyze facility and system designs, operations, practices, and events, and to make recommendations to the Secretary of Energy that the Board believes are necessary to ensure adequate protection of public health and safety, including worker safety. In this regard, the Board's actions are distinguishable from a regulator in that the Secretary may accept or reject the recommendations in whole or in part. The Board must consider the technical and economic feasibility of implementing the recommended measures, and the Secretary must report to the President and Congress if the implementation of a recommendation is impracticable because of budgetary considerations or if the implementation would affect the Secretary's ability to meet the annual nuclear weapons stockpile requirements. If the Board determines that an imminent or severe threat to public health or safety exists, 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 and Appropriations of the Senate and to the Speaker of the House.

The Board's enabling statute also requires the Board to review and evaluate the content and implementation of health and safety standards, including DOE's orders, rules, and other safety requirements, relating to the full life cycle of defense nuclear facilities, including design, construction, operation, and decommissioning. The Board must then recommend to the Secretary of Energy any specific measures, such as changes in the content and implementation of those standards that the Board believes should be adopted to ensure that public health and safety are adequately protected. The Board is also required to review the design of new defense nuclear facilities before construction begins, as well as modifications to older facilities, and to recommend changes necessary to protect health and safety. The Board periodically reviews and monitors construction at these defense nuclear facilities to evaluate whether construction practices and quality assurance ensure design requirements related to nuclear safety are met.

In support of its mission, the Board may conduct investigations, issue subpoenas, hold public hearings, gather information, conduct studies, establish reporting requirements for DOE, and take other actions in furtherance of its review of health and safety issues at defense nuclear

facilities. These powers facilitate accomplishment of the Board's primary function, which is to assist DOE in identifying and correcting health and safety problems at defense nuclear facilities. The Secretary of Energy is required to cooperate fully with the Board and provide the Board with ready access to such facilities, personnel, and information the Board considers necessary to carry out these responsibilities.

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 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 phenomenon hazards is a DOE requirement that is implemented in a graded fashion as a function of the hazard associated with the facility. The requirement to update the probabilistic seismic hazard analysis for DOE facilities built in seismically active areas every decade is likewise a DOE requirement.

Resource Needs and Cost-Awareness of the Defense Nuclear Facilities Safety Board

I would like to take the opportunity to say a few words about the Board's 2012 Budget Request. The President's budget request for Fiscal Year 2012 includes $29.13 million in new budget authority for the Board. This is a $3 million increase compared to Fiscal Year 2010 and will support a personnel strength 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 oversight to ensure that public and worker health and safety are adequately protected. A consideration for this level of resources is to provide oversight of health and safety without interfering with DOE activities' timelines. For the Board, oversight requires the resources necessary to prevent a serious nuclear accident, which must be prevented to protect public and worker health and safety.

The 2012 Budget requests $16 billion for NNSA and Environmental Management activities that involve defense nuclear facilities under the Board's purview. We believe that continuous improvements in safety serve as enablers to DOE's mission. In the area of new design and construction, 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 cost 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 exceeding $20 billion, each increase in project cost of one percent equates to an increase of more than $200 million. Consequently, we believe the Board's Fiscal Year 2012 Budget Request provides cost-effective oversight while protecting public and worker health and safety.

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) required to accomplish our highly specialized work. Seventy-one percent of our budget request for Fiscal Year 2012 is for salaries and benefits, 5 percent is for travel and transportation (essential because of the need to physically visit defense nuclear facilities), and 3 percent is for technical expert contracts. The remainder is for rent, information technology and communication expenses, security, administrative support, training, and supplies, which are largely fixed costs. As you will see in my assessment of safety issues in this testimony, the workload of providing health and safety oversight is growing as the defense nuclear complex evolves, and will continue for decades as DOE and NNSA continue cleanup activities and weapons operations to support DOE's national security mission.

The Board is very mindful of the need for cost-effective solutions to safety problems at defense nuclear facilities, and always seeks the simplest practical remedy. The Board considers factors such as the remaining useful life of facilities, schedules and plans for replacing them, and means to mitigate disruptions to ongoing operations that may result from recommended safety

improvements. 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). In most cases, the types of safety measures needed to meet DOE's safety requirements are a small fraction of the cost of the project. The same principle applies to oversight of operations—in an effective Integrated Safety Management system, 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 works with DOE to ensure that new technology important to safety is fully mature and capable of performing its intended safety function.

The National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling concluded that the Macondo well blowout revealed such systematic failures in risk management that they place in doubt the safety culture of the entire industry. A key finding in the commission's January 2011 report is that fundamental reform will be needed in both the structure of those in charge of regulatory oversight and their internal decision-making process to ensure their political autonomy, technical expertise, and their full consideration of environmental protection concerns. Likewise, the Board seeks to ensure that oversight and decision-making processes in the DOE defense nuclear complex remain strong and technically defensible. The bottom line is that a nuclear accident is unacceptable to the public and the Administration.

Although not a regulatory body, the Board is the only agency that provides independent scientific and technical safety oversight of DOE's defense nuclear facilities. The Board remains the last line of defense to ensure DOE line management implements the safety requirements needed to ensure accidents do not happen within the defense nuclear weapons complex. DOE is undertaking initiatives to create and test new governance models that rely more heavily on the objectivity of its line organizations for safety oversight, eliminate or streamline its directives, and eliminate or streamline contractor requirements to achieve more efficient operations. This increases the overall reliance on the Board to provide independent oversight. The DOE-Board

independent safety oversight model has yielded a positive safety performance record in DOE's defense nuclear complex since the Congress established the Board.

Nuclear Safety Issues at DOE and NNSA Defense Nuclear Facilities

The Board evaluates all of DOE's and NNSA's activities in the context of Integrated Safety Management. The core functions of Integrated Safety Management 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

Integrated Safety Management 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

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. 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 Integrated Safety Management.

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

- The need to preserve and continuously improve safety directives
- The need to consider safety early in the design of new defense nuclear facilities
- The need to replace unsound facilities and invest in infrastructure for the future
- The need to safely store and disposition DOE's and NNSA's large inventories of nuclear materials
- The need to develop and maintain a technically qualified federal workforce dedicated to the effective oversight of safety
- The need to resolve safety issues at the Hanford Waste Treatment and Immobilization Plant
- The need to learn appropriate lessons from the March 11 earthquake that caused such devastation in Japan

Preserving an Effective Nuclear Safety Directives System:
Preserve the Departmental requirements and guidance essential to ensuring safety within the DOE defense nuclear complex.

DOE and NNSA are self-regulated, and to facilitate self-regulation have developed a system of nuclear safety directives enumerating a comprehensive set of nuclear safety requirements, garnered from 60 years of operating experience in both the commercial and defense-related arenas. Many of these directives came about in the late 1980s when DOE needed a safety framework to reliably perform its mission. The Board was created by Congress in this same time period. The Board evaluates these safety directives, provides comments on gaps or weaknesses, and uses the directives as fundamental yardsticks for evaluating safety of facilities and activities. The Board views the directives system as the primary means by which DOE enables the safe accomplishment of work at defense nuclear facilities.

Last year, DOE and NNSA pursued several initiatives to rapidly reduce the scope and impact of the directives system:

- DOE commenced a *2010 Safety and Security Reform Plan* that sought to revise, cancel, or consolidate 107 safety and security directives maintained by DOE's Office of Health, Safety and Security on an extremely aggressive schedule. The plan and its associated End-State Vision contemplated reducing health and safety directives by 50 percent in about 6 months.

- Under its Governance Reform Initiative, NNSA bypassed DOE's established directives review system to conduct its own line-by-line evaluation of the contractor requirements of selected directives, including directives related to nuclear safety. NNSA sought to identify duplicative, overly prescriptive, inconsistent, and unclear requirements and authorized its site offices to delete them (in some cases, deleting the entire Contractor Requirements Document) from site contracts, starting at the Nevada National Security Site and Sandia National Laboratories.

- At the end of 2010, DOE adopted an "expedited" process for changing directives, beginning with seven health and safety directives that had been targeted in the NNSA Governance Reform Initiative, to "achieve the Department's management excellence goals."

The Board cannot ascertain a need for the extremely compressed schedules for the revision of health and safety directives. DOE was unable to articulate any specific problem in the field, and the Board was unable to find problems caused by the existing safety directives or significant deficiencies in their requirements. In May 2010, DOE responded to the Board's concerns which were enumerated at the Board's public meeting earlier in the month by instituting a rigorous and disciplined process for its *2010 Safety and Security Reform Plan* that

would carefully assess the content of each directive, the value of each requirement, and the consequences of each requirement's removal or modification. This approach yielded positive results. However, the NNSA Governance Reform Initiative circumvented the newly adopted systematic approach. DOE responded to the Board's concerns about the NNSA initiative in November 2010 by committing to review NNSA's modified contractual approaches through the DOE directives review system consistent with its *2010 Safety and Security Reform Plan.* However, DOE's end-of-year announcement of the expedited processing of seven key directives essentially countermanded its systematic approach even as it superseded the NNSA initiative.

The Board is maintaining an intense level of oversight of the revision to the directives system and the vitality of the directives being revised to ensure that the margin of safety embodied in DOE's directives is maintained or increased. It is essential that the senior leadership of DOE and NNSA do the same, or many years of progress in development and refinement of the directives system could be undone. It is not apparent that accelerated directives reform efforts yield benefits commensurate with the demands they place upon the finite resources at DOE, NNSA, and the Board, nor is it clear how this initiative will improve and strengthen safety.

Integrating Nuclear Safety Early in the Design of Defense Nuclear Facilities:
Continue implementation of the safety-in-design initiative as a high priority.

DOE and NNSA defense nuclear facilities currently under design and construction have a total project cost of more than $20 billion. The Board is required by law to make such recommendations to the Secretary during design and construction that would ensure that new defense nuclear facilities provide adequate protection of the health and safety of the workers and the public. For the past several years, the Board has driven an initiative to ensure that DOE and NNSA design project teams focus on early recognition and rapid resolution of safety issues. The Board and DOE prepared a joint report to Congress, dated July 19, 2007, that describes in detail many of the actions being taken to accelerate identification and resolution of safety issues.

Performing thorough reviews of safety issues earlier in the design process allows issues to be resolved efficiently and in a timely manner, and minimizes adverse impacts to project cost and schedule. This approach is essential to the success of major design and construction projects, which include facilities such as:

- Waste Treatment and Immobilization Plant, Hanford Site
- Chemistry and Metallurgy Research Replacement Project, Los Alamos National Laboratory (LANL)
- Uranium Processing Facility, Y-12 National Security Complex
- Pit Disassembly and Conversion Project, Savannah River Site
- Salt Waste Processing Facility, Savannah River Site
- Integrated Waste Treatment Unit, Idaho National Laboratory
- Radioactive Liquid Waste Treatment Facility Upgrade Project, LANL

The importance of early integration of safety into the design cannot be overstated. This approach is the best way to avoid costly late resolution of major design issues or surprises late in the development of a new facility as is the current situation with the Waste Treatment and Immobilization Plant.

The Duncan Hunter National Defense Authorization Act for Fiscal Year 2009, Public Law 110-417, enacted a limitation on funding for the Chemistry and Metallurgy Research Replacement Project at LANL until the Board and NNSA each certified that certain design issues reported by the Board had been resolved. The Board submitted its certification report to Congress on September 4, 2009. The Board applied significant resources toward accomplishing this certification, consuming about 6,500 hours of Board and staff effort. Working with NNSA, the Board identified specific concerns and the actions necessary to resolve them prior to certification. As discussed in detail in the Board's certification report, NNSA revised or agreed to revise the preliminary design, design requirements, and design processes to address the Board's concerns. NNSA also committed to implement the design requirements agreed upon in

the certification process during final design. The Board has continued to review the facility design as it has developed to ensure that it remained consistent with the commitments made by NNSA. For example, earlier this year, the Board requested that NNSA provide the technical basis for changes in the safety strategy being proposed by the LANL contractor that would reduce the allowable material-at-risk, downgrade the classification of several safety systems, and reduce seismic design requirements for the safety-related ventilation system.

The House Conference Report 109-702 on the National Defense Authorization Act for Fiscal Year 2007 (H.R. 5122) directed the Board to provide quarterly reports on the status of significant unresolved technical differences between the Board and DOE on issues concerning the design and construction of DOE's defense nuclear facilities. While Congressional direction no longer requires the Board to continue providing quarterly reports, the Board continues to provide these reports to keep all parties informed of the Board's concerns with design of new DOE defense nuclear facilities. The Board has also been encouraged by the feedback received from the Congressional committees to continue providing these reports to Congress and DOE. The twelve reports issued thus far are available to the public on the Board's web site.

Ending Reliance on Unsound Facilities and Investing in Infrastructure for the Future: *Parallel investments are needed to safely operate existing facilities and develop replacements.*

Last fall, the Board issued its first report to Congress on aging and degrading facilities in the DOE defense nuclear complex. This report will be updated periodically to highlight the greatest infrastructure needs affecting safety of defense nuclear facilities at DOE and NNSA sites. NNSA's production infrastructure includes aging facilities overdue for replacement as well as newer facilities that require upgrades to provide safe and reliable support for the nation's enduring nuclear deterrent. Examples of aging facilities include the 9212 Complex at Y-12 (portions of which are more than 60 years old), to be replaced by the planned Uranium Processing Facility; and the Chemistry and Metallurgy Research (CMR) building at LANL (nearly 60 years old), to be replaced by the Chemistry and Metallurgy Research Replacement

Project. The 9212 Complex cannot meet existing nuclear safety requirements for Hazard Category 2 nuclear facilities, and the CMR building's seismic fragility poses a continuing risk to the public and workers. Other facilities in similar situations include the Radioactive Liquid Waste Treatment Facility at LANL and the scattered facilities that constitute LANL's capability to repackage, characterize, and ship transuranic wastes offsite for disposal.

To its credit, NNSA has taken actions to reduce the radioactive material-at-risk in aging facilities. NNSA has reduced the inventory of uranium solutions in polymer bottles at the 9212 Complex and committed to relocate some activities from the CMR building to a more robust facility at Los Alamos. In addition, NNSA initiated a line item project to upgrade certain systems in the 9212 Complex based on a facility risk review and is consolidating operations in the CMR building into wings of the structure that do not lie directly above a seismic fault. These are, however, stop-gap measures. These facilities are structurally unsound and are unsuitable for use any longer than absolutely necessary. They may need to be shut down before the replacement facilities are ready.

The planned replacement facilities have been delayed beyond original projections, but the need to proceed with them appears to be broadly recognized and supported. This is a positive development, but the new facilities are at least a decade away. NNSA must continue to drive safety improvements at the existing facilities while the replacement facilities are developed. Unsafe conditions would rapidly develop if NNSA were to turn away from maintaining and upgrading facilities such as the 9212 Complex and CMR in anticipation of their eventual replacement.

NNSA also needs to invest in safety upgrades at newer facilities with enduring missions. The Plutonium Facility at LANL is a compelling example. NNSA planned to rely on that facility as its sole manufacturing capability for nuclear weapon pits for decades to come, but had not made commensurate investments in the building's safety systems. The Board issued an urgent formal recommendation in 2009 on the need to implement reliable safety systems in the facility

to reduce the consequences of severe accident scenarios. In response, NNSA has taken a number of interim actions to quickly improve the safety posture of the Plutonium Facility and is developing longer-term upgrades to the facility's safety systems. The Board believes a seismically qualified active confinement ventilation system provides the best solution to ensure adequate protection of public and worker safety for this essential facility.

A similar situation exists at the Device Assembly Facility at the Nevada National Security Site, but the path forward is less clear. That facility is the permanent home to the Critical Experiments Facility relocated from LANL. It also performs assembly work for subcritical experiments and is a potential location for nuclear explosive assembly and disassembly operations. Despite these important, enduring missions, the facility's fire suppression system has numerous, long-standing deficiencies that need to be corrected.

The most pressing concerns for DOE's Environmental Management program are the aging tank farms at the Savannah River Site and Hanford. DOE is building several facilities to process and vitrify waste in these tanks for eventual disposition. Some tanks may be 80 to 100 years old when they are finally emptied. DOE is actively engaged in tank integrity programs to provide the correct chemical environment to prevent corrosion and ensure no new leaks occur in the interim.

Investments such as these are a continuing need in the defense nuclear complex. Failing to devote sufficient resources to these improvements has long-term negative effects on DOE's ability to safely accomplish its objectives.

Safe Storage and Disposition of Nuclear Materials

Safely package, store, and disposition excess nuclear materials to eliminate the risk they may pose to facility workers and the public.

DOE faces several challenges related to nuclear materials that have been declared surplus to national security needs or are otherwise no longer needed. These materials exist in many

chemical and physical forms and include large inventories of used nuclear fuel, plutonium, uranium, and other highly radioactive isotopes. More materials are being added to these inventories as DOE ends Cold War era programs, decommissions old nuclear facilities, and uncovers or produces additional wastes during site cleanup work.

Three main challenges exist: (1) DOE must provide safe interim storage for the large inventory of nuclear materials, (2) DOE must develop timely disposition plans for the materials to limit the risks to workers and the public, and (3) DOE must identify the facility and infrastructure requirements that will support safe completion of the disposition mission.

The Board believes premature shutdown of the H-Canyon facility could have significant unintended safety consequences. For many nuclear materials, DOE's preferred method of disposition has been chemical processing through the H-Canyon facility. DOE needs to define its long-term processing needs clearly, based on options supported by a sound technical basis, before taking actions that would impact the future operability of H-Canyon.

Effectively Performing Federal Safety Oversight:
Ensure federal personnel have appropriate backgrounds, training, and qualifications, and are dedicated to the oversight of safety of defense nuclear facilities.

Safe and efficient execution of DOE's and NNSA's missions requires an adequate complement of qualified technical staff at its headquarters and site offices. DOE and NNSA have committed to developing and maintaining a technically competent federal workforce. Both DOE and NNSA have made good progress in assigning qualified federal staff to the Technical Qualification Program, Facility Representative Program, and Safety System Oversight Program, each of which is critical for providing technically competent personnel for the oversight of defense nuclear facilities.

Safe and efficient execution of DOE's and NNSA's missions also requires commitment by senior federal management to dedicate sufficient resources to safety oversight of the

contractors who design, build, operate, maintain, and decommission DOE's and NNSA's facilities. DOE and NNSA are reevaluating their roles in overseeing the work of their contractors, which includes increasing reliance by DOE on contractors' assurance systems. The Board believes DOE must meet its inherently governmental statutory responsibility to protect public and worker health and the environment. In the end, contractors are responsible to DOE for the safety of their operations, and DOE is responsible to the President, Congress, and the public.

Last year, NNSA declared a 6-month moratorium on NNSA-initiated functional assessments, reviews, evaluations, and inspections of its contractors. NNSA stated the purpose of the moratorium was to "1) free up resources to be redirected to higher mission direct work; and, 2) to allow NNSA to use available resources to develop an integrated, comprehensive, interdisciplinary oversight approach with an implementing plan consistent with the Secretarial objective to rely more on contractor assurance systems, reduce or eliminate requirements for transactional oversight where not required by law or regulations and rely on rigorous peer reviews." The outcome of this effort was a policy letter issued by NNSA in February of this year, titled *Transformational Governance and Oversight*.

The NNSA policy letter defines an approach to self-regulation that has many positive attributes aimed at focusing federal oversight where it is most needed. The NNSA Administrator's opening message, repeated in Chapter 1 of the policy, commits that, "Rigor and implementation of independent oversight for nuclear and high hazard activities will continue to be maintained and enhanced" under the transformed system of oversight. However, the policy also states the operating principle that "We constantly strive to reduce or eliminate requirements for transactional oversight where not required by statute or the Federal Acquisition Regulation [FAR]...." This principle could be applied in a manner that undercuts the federal role as defined in DOE's current safety directives, because many requirements for federal oversight defined in DOE's directives are not driven by statute or the FAR. The policy later states that as contractors demonstrate the effectiveness of their self-assurance systems, NNSA will "reduce duplicative or transactional oversight in favor of system oversight" but subsequently states that transactional

oversight of nuclear and high-hazard activities would continue.

In parallel with this effort, DOE's Office of Health, Safety and Security (HSS) changed its operational model from the traditional role of performing independent oversight to one that emphasizes assisting line organizations in addressing problem areas in safety and security. DOE's 2010 *Safety and Security Reform Plan* stated that HSS had suspended independent oversight of low-hazard operations except where site performance warranted increased attention, but that rigorous and informed oversight would continue for high-hazard operations. The reform plan stated that DOE's directive on independent oversight—DOE Order 470.2B, *Independent Oversight and Performance Assurance Program*—would be revised to redefine the independent oversight and regulatory enforcement functions of HSS. This revision is still in progress, so the final role of HSS is still being determined. The Board is actively providing input to DOE on this important directive.

The Board believes that there are noteworthy elements in DOE's and NNSA's oversight reform efforts. For example, the Board agrees that DOE should cultivate and maintain the technical expertise within its headquarters organizations to advise line organizations and field elements on safety issues. The Board also agrees that DOE and NNSA should require their contractors to implement and continuously improve assurance systems that drive the safe execution of work. However, contractor assurance systems at defense nuclear facilities have not achieved a degree of effectiveness that would warrant a reduction in federal safety oversight, nor are they expected to in the foreseeable future. It would not be prudent to reduce federal safety oversight of defense nuclear facilities in expectation of future improved assurance by the contractors. Similarly, it is important that DOE and NNSA continue to recognize requirements pertaining to quality assurance, integrated safety management, operating experience/lessons learned, and other such safety programs as essential to ensuring the safety of nuclear and high-hazard activities, and not treat them as "non-nuclear" requirements.

Hanford Waste Treatment and Immobilization Plant:

Ensure the design and construction of the Waste Treatment and Immobilization Plant will enable DOE to stabilize and dispose of Hanford's high-level wastes safely.

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, some aspects of which are continuing to evolve. The Board is concerned that some changes are being implemented before outstanding technical issues are resolved.

The Board set forth its concerns in a public hearing held near the Hanford Site on October 7 and 8, 2010. The Board is continuing to evaluate all aspects of the WTP design as it develops; three key safety issues that require prompt 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 implements a novel application of quantitative risk analysis as a design tool

- The uncertain ability of the Tank Farms to characterize, control, and transfer waste to WTP in compliance with the waste acceptance criteria that need to be met to allow the safe and successful operation of the WTP Pretreatment Facility

After the public hearing, the Board issued Recommendation 2010-2, *Pulse Jet Mixing at the Waste Treatment and Immobilization Plant*, to address unresolved technical concerns related to the mixing and transfer systems in WTP. The Board believes that testing and analysis completed to date has been insufficient to establish with confidence that the pulse jet mixing and transfer systems will perform adequately at full scale, given the solids content and other characteristics of the wastes to be processed. During the Board's public hearing, DOE committed to conduct large-scale testing to better assess the performance of the mixing system before installing the affected vessels in the facility. The Board's recommendation will guide DOE in developing a test plan that resolves all technical issues and should help minimize future delays. DOE is developing a plan to implement the recommendation now, but it is not yet clear whether the plan will be fully responsive to the Board's concerns.

The Board is particularly concerned that DOE's revised strategy for controlling flammable gas in piping and equipment does not credit the safety function of the primary confinement boundary consisting of piping, vessels, and related components to prevent release of radioactive material. The Board also remains concerned about the use of quantitative risk analysis as part of the flammable gas control strategy for WTP. The application of quantitative risk analysis as a risk assessment and design tool is a first use for DOE. DOE has no standards or requirements for the use of quantitative risk analysis, nor for controlling the assumptions that underpin the quantitative risk analysis in the safety basis. If DOE's current approach cannot be shown to be adequate, the design team will need to reestablish active safety controls to prevent flammable gas from accumulating in numerous systems.

Lastly, the Board is concerned regarding the ability of the Tank Farms to supply waste that is compatible with WTP. Because of the limited ability of WTP's pulse jet mixers to handle solids, the amount and size of solid particles in the waste feed need to be controlled to ensure that the mixing and transfer systems in WTP can operate safely and effectively. This will require that the Tank Farms prepare, control, and characterize the feed to ensure it meets the waste

acceptance criteria before it is transferred to WTP. Waste that does not comply with WTP's acceptance criteria will need to be preconditioned in some manner or dispositioned by alternate means.

Impacts of March 11 Earthquake in Japan on Safety at DOE's Defense Nuclear Facilities: *Ensure DOE learns appropriate lessons from the major earthquake that struck Japan.*

The review of data from the March 11 earthquake in Japan, as well as other new earthquakes, plays an important role in updating the standards used by DOE and industry to characterize seismic hazards and establish conservative design requirements. DOE has a directive, Order 420.1B Change 1, *Facility Safety*, requiring its contractors to conduct a review of natural phenomena hazard assessments at least every 10 years to determine whether there have been significant changes in methods or data that would, for example, indicate an increase in seismic hazards and seismic design ground motions. Although changes in the assessment of natural phenomena hazards can impact the design requirements of structures, systems, and components for new facilities like the Uranium Processing Facility, the Chemistry and Metallurgy Research Replacement facility, and the Waste Treatment and Immobilization Plant, it is too early to fully understand the impacts of and lessons to be learned from the events in Japan. The Board's review of the design of new defense nuclear facilities focuses on ensuring that adequate safety margin exists to address residual uncertainties with earthquakes and ground motions that some might consider as beyond design basis. The events in Japan clearly validate the need for robust defense-in-depth and emergency response plans to ensure sufficient safety systems are available to address unexpected situations including the potential for release of radioactive material.

Twelve days after the earthquake, the Secretary of Energy issued Safety Bulletin 2011-01, *Events Beyond Design Safety Basis Analysis*, based on reports from the U.S. Nuclear Regulatory Commission that events at the Fukushima Daiichi nuclear power station in Japan appear to have been caused by factors that were outside the design basis for the facility. The

bulletin requires DOE sites with Hazard Category 1 and 2 nuclear facilities (with certain exclusions) to (1) review how beyond design basis events have been considered or analyzed and any controls that have been put in place that could prevent or mitigate them, (2) discuss the ability to safely manage a total loss of power including a loss of backup capabilities, (3) confirm that safety systems are being maintained in an operable condition in accordance with technical safety requirements, and (4) confirm that emergency plans, procedures, and equipment are current, functional, and have been appropriately tested. These reports are due to DOE Headquarters by April 14 for Hazard Category 1 facilities and by May 13 for Hazard Category 2 facilities. The Board will evaluate these reports carefully. The Board has been conducting a focused review of the emergency plans, practices, and drills, including recovery, at the Savannah River Site during the past year and will use DOE's reports in response to the Secretary's safety bulletin to help establish our priorities for reviewing other sites.

Conclusion

I anticipate that the issues I have described are familiar to 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, the Board's report 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.

Not for Public Release until Approved by the
House Armed Services Committee

Statement of Mr. Andrew Weber
Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs

On

Fiscal Year 2012 National Defense Authorization Budget Request for Department of Energy Atomic Energy Defense Activities and Department of Defense Nuclear Forces Programs

Before the
Strategic Forces
Subcommittee

Committee on Armed Services
U.S. House of Representatives

April 5, 2011

Introduction

Chairman Turner, Ranking Member Sanchez, and members of the Subcommittee, thank you for giving me the opportunity to testify regarding the Fiscal Year 2012 (FY12) National Defense Authorization budget request for Department of Energy (DOE) Atomic Energy Defense Activities and Department of Defense (DoD) Nuclear Forces Programs. I am honored to serve as the principal advisor to the Secretary of Defense, Deputy Secretary of Defense, and the Under Secretary of Defense for Acquisition, Technology and Logistics for matters concerning Nuclear, Chemical, and Biological Defense Programs. It is my pleasure to join General Chambers and Admiral Benedict to provide testimony on DoD's nuclear deterrence requirements. I am also pleased to discuss U.S. nuclear weapons activities conducted in partnership with DOE, which this committee heard about in an earlier panel with Mr. Tom D'Agostino, Under Secretary of Energy for Nuclear Security, and his team from the National Nuclear Security Administration (NNSA).

Today's testimony will focus on DoD's work with the Department of Energy to ensure the U.S. maintains a safe, secure and effective nuclear deterrent for as long as nuclear weapons exist. The DoD-DOE partnership is marked by extraordinary teamwork, and together we have made substantial progress over the past two years. To ensure that progress continues, it is essential that Congress support the President's FY12 budget request for nuclear weapons activities carried out by the NNSA and DoD. This includes funds to ensure a safe and effective stockpile without nuclear testing, to modernize the infrastructure that supports that stockpile, and to modernize ballistic

missile and bomber delivery systems. This effort cannot be accomplished over the course of one year and requires a multi-year commitment as outlined in the Section 1251 Report Update for Fiscal Year 2012 that was recently provided to Congress. I am here today to tell you how we plan to use Fiscal Year 2012 funding to do that.

The Under Secretary for Acquisition, Technology and Logistics (AT&L), Dr. Ashton Carter, plays a key role in managing the U.S. nuclear deterrent. AT&L leads the Department's efforts to acquire the strategic delivery systems for nuclear weapons in order to meet the operational needs of our military.

The Nuclear Weapons Council, created by Congress in the National Defense Authorization Act for Fiscal Year 1987, provides a strategic level forum among DoD and DOE for establishing priorities, developing policy guidance and oversight of the nuclear stockpile management process, and ensuring high confidence in the safety, security, and effectiveness of U.S. nuclear weapons. The Council is comprised of five members: the Under Secretary of Defense for Acquisition, Technology and Logistics, the Under Secretary of Defense for Policy, the Vice Chairman of the Joint Chiefs of Staff, the Commander of the U.S. Strategic Command, and the Under Secretary of Energy for Nuclear Security. As Chairman of the Council, Dr. Carter leads the Department's efforts to coordinate weapons stockpile management with the Department of Energy. By ensuring program alignment between the DoD and DOE, the Nuclear Weapons Council is a model of interagency cooperation established to achieve national security objectives.

Within AT&L, I have the privilege to serve as the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (NCB) and as the Nuclear Weapons Council Staff Director. In this capacity, I am the principal advisor to the Secretary of Defense for providing the U.S. and our allies with a safe, secure, and effective nuclear deterrent capability and ensuring the nuclear-survivability of U.S. military forces and DoD infrastructure. Also within its mission, NCB leads the Department's efforts with interagency and international partners to counter nuclear terrorism through activities such as Global Nuclear Lockdown, the Nuclear Security Summit, and the Global Initiative to Combat Nuclear Terrorism.

President Obama said, "Make no mistake: As long as these weapons exist, the United States will maintain a safe, secure and effective arsenal to deter any adversary, and guarantee that defense to our allies." America's strategic forces continue their role as a pillar of our national security. In the past few months I have had the opportunity to witness firsthand our forces' dedication and commitment to this mission. I traveled to Naval Base Kitsap in Washington State last fall, and in February of this year, to Malmstrom Air Force Base, Montana. During these visits I spoke with the extraordinary Airmen, Sailors, and Marines who gave me a great appreciation for the challenges they face each and every day executing our strategic deterrent mission.

A Path Forward for a New U.S. Nuclear Posture

Before discussing plans for the U.S. nuclear deterrent in Fiscal Year 2012, it is important to step back for a moment and consider the status of the nuclear security enterprise before the release of the

Nuclear Posture Review (NPR) and negotiation of the New START treaty.

According to the 2009 report by the Congressional Commission on the Strategic Posture of the United States, often referred to as the Schlesinger-Perry Report, the physical infrastructure was "in serious need of transformation" and DOE "lacked the needed funding" to transform the enterprise. The Report also emphasized that the intellectual infrastructure of the nuclear enterprise was in trouble.

The problems facing our nuclear deterrent were not for DOE to address alone, however. Both Departments faced challenges in its sustainment. DOE had insufficient funding to maintain the research and development needed for long-term certification of stockpile safety and reliability. The enterprise had experienced significant deterioration of the skills needed for basic nuclear weapons design, engineering and manufacturing. DoD had inadequate plans for modernization and sustainment of delivery platforms for nuclear weapons. And perhaps most importantly, the two Departments were dealing with the absence of a much-needed national consensus on the future role of our nation's nuclear deterrent in U.S. national security strategy.

2010 marked a crucial year for the U.S. nuclear weapons enterprise. For almost two decades, differing opinions existed within the U.S. Government on the role of nuclear weapons in U.S. national security strategy in a post-Soviet era. Without a Cold War enemy, the relevance of nuclear weapons had come into question, particularly as threats from non-state actors drove our immediate and near-term

national security agenda. There was a distinct need to develop and articulate a comprehensive approach to America's nuclear security and restore national consensus on the issue.

By completing last year's Nuclear Posture Review, the Administration outlined a clear and comprehensive plan to reduce nuclear threats to our Nation and begin to identify initial steps on the path to zero. Nuclear zero, of course, is a daunting challenge, and the President recognizes that the conditions for elimination may not occur in his lifetime. Until such time as nuclear weapons no longer exist, he is committed to maintaining a safe, secure and effective nuclear deterrent.

Along with issuing the Nuclear Posture Review, the U.S. "reset" relations with Russia by establishing a productive strategic dialogue which most recently resulted in entry into force of the New START Treaty. A milestone for the President's national security agenda, the treaty will limit the U.S. and Russia to fewer strategic arms, while permitting each Party the flexibility to determine for itself the structure of its strategic forces within the Treaty limits. The New START Treaty will also provide the U.S. critical insights into Russia's strategic nuclear arsenal.

Secretary Gates, in consultation with the Joint Chiefs of Staff, established a baseline nuclear force structure that fully supports U.S. security requirements and will conform to the New START Treaty limits of 1,550 deployed strategic warheads by 2018. To reach these goals, beginning in Fiscal Year 2012, the Defense Department will invest 125 billion dollars over the next decade to modernize nuclear delivery

platforms and the systems for their command and control. As the Nuclear Posture Review articulated, all legs of today's nuclear Triad are key to maintaining stability.

An effective deterrent consists of more than the weapons in the stockpile and the associated delivery systems. It also includes the nuclear weapons infrastructure to provide agile, modern, and responsive research and development and manufacturing capabilities that will ensure that the U.S. is able to maintain the deterrent without testing and with substantially reduced numbers. Recapitalizing that infrastructure will require significant future investments.

Revitalizing the Nuclear Infrastructure

The Departments of Defense and Energy share a common path forward to recapitalize the nuclear enterprise.

As outlined in the Section 1251 Report, in Fiscal Year 2012 DoD will continue to fund the OHIO-class replacement submarine. The Fiscal Year 2012 budget request allows the Department to begin efforts on life extension of the Trident II D5 missile, follow-on capability to the Minuteman III ICBM, upgrades to the B-2 and B-52H heavy bombers, and development of a Long-Range Standoff missile to replace the current air-launched cruise missile. Additionally, DoD plans to recapitalize the bomber force with a new penetrating bomber and dual capable aircraft with the F-35 Joint Strike Fighter. Finally, DoD is modernizing the command and control network that links nuclear delivery systems to Presidential authority.

Fiscal Year 2012 funding will allow us to work with DOE in restoring the health of the intellectual infrastructure provided by our national laboratories. The scientific and technological base at our nuclear weapons laboratories is the backbone of our deterrent. The laboratories also contribute greatly to our efforts in nonproliferation and WMD counter-terrorism. They have become "dual-use" nuclear security research and development organizations. This advanced science and technology enterprise provides considerable leverage to enhance all aspects of global security. In order to recruit, train, and retain talented scientists in our national laboratories, they must have missions to support and sufficient resources.

One of the more ambitious efforts of the DoD and DOE partnership is the replacement of aging and unsupportable facilities that do not meet modern safety standards. Two facilities within the nuclear weapons complex date from the 1940's and 50's: the Chemistry and Metallurgy Research Facility, which supports plutonium research and development and provides analytical capabilities in support of pit surveillance and production; and what is known as Building 9212 at Y-12 in Tennessee, where we conduct highly-enriched uranium operations. The continued operation of these two facilities is unsustainable. The only viable option is to replace them with modern facilities – the Chemistry and Metallurgy Research Replacement (CMRR) Facility and the Uranium Processing Facility (UPF) – that are smaller, more efficient, safer, and less costly to operate.

As with any major systems acquisition program, building large, one-of-a-kind nuclear facilities, such as CMRR and UPF, presents significant challenges in terms of planning, design, and development. Indeed,

the estimated costs for these facilities have grown substantially based on assessments made over the past year. This has raised concern about the affordability of these projects. Therefore, one of our principal challenges in today's fiscally constrained environment is to control the costs of these facilities. To this end, the Nuclear Weapons Council has made controlling infrastructure modernization costs one of its high priorities. At the request of DOE Under Secretary Tom D'Agostino, DoD is working with DOE to ensure that critical national security requirements for CMRR and UPF are met, and that the cost of these programs is carefully managed for efficiency and effectiveness.

DoD Stockpile Requirements

Today's nuclear stockpile is the smallest it has been since the Eisenhower Administration. It is assessed annually by all three nuclear weapons laboratory directors and the Commander of USSTRATCOM. The most recent assessment concludes that the stockpile is safe, secure, and effective and there is no need to conduct nuclear testing. Still, we are faced with challenges in ensuring the stockpile remains safe, secure, and effective for the long-term.

As part of the Nuclear Posture Review, the DoD and DOE assessed these challenges and developed a long-term strategy for stockpile stewardship based on four basic principles.

First and foremost, the U.S. will continue its moratorium on nuclear testing and will pursue ratification of the Comprehensive Nuclear Test Ban Treaty.

Second, the U.S. will not develop new nuclear weapons. Life extension programs will use only nuclear components based on previously tested designs and will not support new military missions or provide for new military capabilities.

Third, we will seek to ensure a strong deterrent at the lowest possible stockpile size consistent with our need to deter adversaries, reassure our allies, and hedge against technical or geopolitical surprise.

Finally, life extension programs for existing nuclear warheads will be carried out to ensure continued stockpile safety, security, and effectiveness.

Looking to the future of the nuclear arsenal, DoD and DOE are moving forward with several weapon system life extension programs in Fiscal Year 2012 to support the long-term viability of the Triad. Among the near-term efforts, DOE will continue the W76 life extension program in Fiscal Year 2012 and complete production of this SLBM warhead in Fiscal Year 2018.

Other ballistic missile warheads are also nearing end-of-life. DoD and DOE are planning to conduct a W78 life extension study to include examination of a warhead option that could be deployed with both ICBMs and SLBMs. To leverage this effort, DOE, the Air Force, and the Navy are teaming to develop a modern Arming, Fuzing and Firing (AF&F) system, initially for the W88 SLBM warhead, but adaptable for use in a potential common W78/W88 warhead.

Efforts to develop an interoperable warhead for deployment on multiple platforms would, if successful, allow the DoD to reduce the number of warhead types and the number of warheads needed for an adequate hedge. Hedging is a risk mitigation strategy to protect the nuclear deterrent should a failure occur with a delivery platform or warhead or to allow flexibility to address an unforeseen, evolving geopolitical situation. For example, today we maintain two ICBM warheads in sufficient numbers to ensure that "backup" warheads of one type are available in the event of a technical failure of the other. We also maintain two SLBM warheads for a similar reason. If a common ballistic missile warhead could be deployed, this would reduce the number of hedge warheads required to back up the force. For example, in one plausible option a smaller hedge could be achieved with three warhead types—one ICBM warhead, one SLBM warhead, and one warhead that could "swing" between ICBMs and SLBMs. Warhead commonality and adaptable components such as the joint AF&F also address the need for greater efficiencies in managing the stockpile by minimizing costs associated with development, production, surveillance, and other stockpile sustainment processes.

For the bomber leg of the Triad, DoD requires life extension of the B61 gravity bomb. The B61 is the oldest warhead design in the US nuclear stockpile with components dating from the 1960s (vacuum tube radars, analog circuitry) and other limited life components (neutron generators, power sources) all reaching the end of their service life. The B61-3/4 non-strategic bombs are deployed with NATO dual capable aircraft to provide U.S. extended deterrence to our Allies. The B61-7 strategic bomb is carried by the B-2 bomber and is an essential component of air-delivered strategic deterrence. In April 2010, the

Nuclear Posture Review reaffirmed both the extended and strategic deterrent roles of the B61 and directed proceeding with its full-scope life extension. The result will be a single warhead, termed the B61-12, which will replace four types of the B61 – one strategic and three non-strategic - further promoting efficiencies and minimizing costs.

The Nuclear Weapons Council anticipates the B61 life extension program will proceed into the development engineering phase in Fiscal Year 2012. Technology maturation for advanced surety features and other life extended components for the B61 is currently accelerating to complete the first production unit in Fiscal Year 2017. Meeting this date for the first production unit is essential to meeting U.S. Strategic Command's requirements by ensuring it is available for B-2 deployment in early 2018. Adhering to the Fiscal Year 2017 schedule for this life extension program is also critical in meeting U.S. commitments to our NATO allies to sustain their non-strategic nuclear capabilities and to provide extended deterrence.

In Fiscal Year 2012, DoD plans to continue improving nuclear weapons and infrastructure security through a combination of capital investment, enhanced personnel training, and technology insertions. To address security challenges associated with the aging infrastructure and a changing threat environment, additional underground storage capacity and modern security features are being added at our current nuclear weapons storage facilities. In addition, new and improved surveillance systems and more reliable vehicles for response forces will enhance our ability to detect, intercept, and defeat potential adversaries who attempt to access our nuclear weapons storage sites. Continuous threat monitoring and periodic adversary capability

assessments help ensure our security posture remains ahead of evolving threats while contributing to a responsive and cost effective security system.

With leadership from the Nuclear Weapons Council, DoD and DOE are addressing the long-standing disparity in each Department's approach to physical security of nuclear weapons. The two Departments recognize the benefit of pursing a common, enterprise-wide approach to physical security and are teaming to develop common nuclear weapons security standards. We are examining best practices across both agencies, identifying areas where common practices and standards exist, and recommending solutions to the gaps among practices and standards, to ensure that resources are used efficiently and the nuclear weapons enterprise remains secure as threats evolve.

The aging of the U.S. stockpile is also a significant factor in the challenges we face in a new threat environment. All weapons in the current stockpile were developed from designs that are at least 20 years old and may not contain the most advanced design-based surety technologies available today. Continued support for enhancements that improve the physical security of our warheads is vital to meeting the President's commitment to a safe and secure stockpile. New surety features designed into the warhead through life extension programs are well within our reach. Considering them early in the life extension process through full-scope life extension studies is the best way to ensure we address all factors: risk, benefit, schedule, and cost.

International Efforts to Counter Nuclear Threats

As efforts to ensure a safe, secure, and effective nuclear deterrent continue, we are also working to ensure that terrorists and proliferators cannot access nuclear materials and expertise abroad. NCB is also responsible for the Department's piece of this critical mission. We oversee the implementation of DoD's efforts in support of the President's Global Nuclear Lockdown initiative. We are working in close coordination with the DOE and State Department and have quarterly "bridge" meetings to ensure that our international efforts are synchronized and that we are collectively doing all we can to ensure that terrorists cannot deploy an Improvised Nuclear Device.

Conclusion

Nuclear threats to our nation have changed significantly in the last 20 years. Indeed the world is safer today from the threat of full-scale nuclear war than it was during the Cold War. While their roles and numbers have been reduced, U.S. nuclear weapons still exist to deter potential adversaries, and to assure U.S allies and other security partners that they can count on America's security commitments. The risk of attack by a nuclear power is lower, but the threat of nuclear attack on the U.S. by a non-state actor is real and constantly evolving.

This means the Department of Defense must continue to maintain a strong nuclear deterrent supported by an agile and responsive infrastructure. In support of the vision of President Obama and Secretary Gates, this infrastructure must ensure that the entire nuclear enterprise can effectively prevent, deter, defeat, and respond

to today's threats. The challenge before us requires a multi-year investment and commitment in which we need your continuing support.

The Departments of Defense and Energy have a long history of successful partnership in meeting our nation's most important national security objectives. The leadership of the two Departments looks forward to continuing this vital partnership to meet our national security challenges. I ask for your support for the President's FY12 budget request so that we can achieve these goals. I appreciate the opportunity you have given me to testify today and would be pleased to answer your questions.

NOT FOR PUBLICATION UNTIL RELEASED BY
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON STRATEGIC FORCES
U.S. HOUSE OF REPRESENTATIVES

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON STRATEGIC FORCES
U.S. HOUSE OF REPRESENTATIVES

SUBJECT: Fiscal Year 2012 National Defense Authorization Budget Request for Department of Energy Atomic Energy Defense Activities and Department of Defense Nuclear Forces Programs

STATEMENT OF: Major General William A. Chambers
Assistant Chief of Staff
Strategic Deterrence and Nuclear Integration

April 5, 2011

NOT FOR PUBLICATION UNTIL RELEASED BY
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON STRATEGIC FORCES
U.S. HOUSE OF REPRESENTATIVES

Introduction

Chairman Turner, Ranking Member Sanchez, distinguished Members of the Committee, thank you for the opportunity to discuss your Air Force's strategic deterrent forces.

In pursuit of the President's vision as outlined in the Nuclear Posture Review to "reduce U.S. nuclear weapons and their role in U.S. national security strategy," the Air Force takes to heart its responsibility to uphold the entirety of his vision and pledge, "...[that] as long as nuclear weapons exist, the United States will maintain a safe, secure, and effective arsenal, both to deter potential adversaries and to assure U.S. allies and other security partners that they can count on America's security commitments." We employ that arsenal to produce strategic deterrence that remains vital at a time when our National Military Strategy notes, "...ongoing shifts in relative power and increasing interconnectedness in the international order indicate a strategic inflection point." Maintaining credibility of our strategic deterrent requires a long-term, visible commitment to our nuclear capabilities.

Continue to Strengthen – The Air Force's #1 Priority

Continuing to Strengthen our nuclear enterprise remains the number one Air Force priority. A year ago, testimony before this committee recounted Air Force efforts to reinvigorate our nuclear enterprise. That focus significantly advanced our structure, processes and culture. Our focus now is on making sure those advances endure.

Since last year's testimony, Air Force Global Strike Command (AFGSC), as the first major command stood up in 27 years, is the most visible structural change taken to ensure focused operational oversight and proper support to United States Strategic Command. AFGSC now has full operational command of our Intercontinental Ballistic Missile (ICBM) and nuclear-capable bomber forces and is continually focused on the Airmen and their weapon systems that produce strategic deterrence every day. Additionally, the Air Force designated Nuclear Deterrence Operations as one of twelve Service Core Functions to ensure alignment of policy and resources. These are just two of the many changes to structure, process and culture that reflect a concerted effort to institutionalize our reinvigoration initiatives and maintain safe, secure and effective nuclear capabilities.

The Secretary of the Air Force (SECAF) and Chief of Staff of the Air Force (CSAF) articulated strategic guidance to ingrain the Air Forces' commitment to sustained focus on the nuclear enterprise.

- Strengthen Positive Inventory Control of Nuclear Weapons Related Materiel
- Refine Inspection Processes
- Fulfill Human Capital Plan to Ensure Appropriate Expertise at All Levels
- Modernize and Recapitalize Nuclear Deterrent Capability
- Implement New START

- Craft a Comprehensive Deterrence and Crisis Stability Vision that Builds on the Nuclear Posture Review

The initiatives in the President's Budget Request will build on successes achieved since 2008 and enable the Air Force to *Continue to Strengthen* along these Strategic Steps to maintain safe, secure and effective nuclear capabilities.

Strengthen Positive Inventory Control of Nuclear Weapons Related Materiel

Efforts continue to tighten, assess and automate accountability for Nuclear Weapons Related Materiel through a completely revamped Positive Inventory Control process. To improve accountability, sustainment activities such as these have been consolidated under a vastly revitalized Air Force Nuclear Weapons Center. The Air Force now has improved visibility of our worldwide inventories and accountability continues to improve.

Refine Inspection Processes

We have seen positive results from the current inspection regime across the board. We have reinforced our long-held nuclear standards and we will continue to examine the size and scope of the inspections required to "sustain" excellence, focusing on effectiveness. We will continue critical self-inspection, Nuclear Surety Staff Assistance Visits, and Nuclear Surety Inspections. The goal is to bolster resolute attitudes of exacting compliance and strict adherence to prescribed standards with continual self-assessment. We now perform Root Cause Analysis on all major write-ups, track them and brief progress of corrective actions to Air Force leadership. Senior Air Force leaders continue to review inspection results and other key indicators on a frequent and recurring basis.

Fulfill Human Capital plan to Ensure Appropriate Expertise at All Levels

When the Air Force established reinvigoration of the Nuclear Enterprise as our top priority, we included our most precious resource....our Airmen....as an integral part of the effort.

In response, the nuclear and personnel communities jointly created an analytical process resulting in a comprehensive Nuclear Enterprise Human Capital Execution Plan. This action plan focuses on synchronizing the Air Force's *Continue to Strengthen* objectives that relate to development of Airmen and their nuclear expertise.

As a result of collaborative efforts across all nuclear specialties, we have instituted changes to improve the long-term professional fitness of our people. Over the past year, we have scrutinized our small, critical nuclear career fields, and recognized that in this era of small total force numbers and dual capability requirements, we must take innovative steps to optimally manage, grow, and retain this specialized expertise. As a result, several initiatives are now underway that will improve operational effectiveness in these critical areas. In addition, the Air Force is testing a new Enlisted Developmental Team process starting with the nuclear enterprise,

to ensure deliberate development of our senior non-commissioned officers to create a sustainable leadership bench. We have also moved out aggressively to retain nuclear talent, ramping up programs to target expertise and critical skills through retention incentives.

Recently, my organization was designated the Functional Authority for the Human Capital performing the Nuclear Deterrent Operations. As such, we are responsible for injecting strategic perspective in the array of nuclear-related human capital programs. This broadens the perspective of the human capital policy arm to the needs of the nuclear enterprise career fields, brings attention to some unintended consequences of broader policies, and allows for refinements in leveraging our skilled dual-capable nuclear Airmen.

These changes allow us to deliberately develop and manage our nuclear-capable personnel. Air Force senior leaders have energized these efforts through advocacy, continuous, focused attention and regular review of nuclear initiatives.

Modernize and Recapitalize Nuclear Deterrent Capability

From investing in our people to investing in our systems, every weapon system in the nuclear enterprise is undergoing some form of modernization or recapitalization. Successful deterrence requires sustaining and modernizing our force structure in a consistent and deliberate manner. This is a vital contribution to the long-term credibility of our deterrent.

Air Force funding efforts maintain ongoing investment for the Minuteman III and support equipment programs to extend life expectancy through 2030, as directed by the 2010 NDAA. Ensuring consistent, adequate sustainment of MM III requires an investment strategy addressing cryptographic upgrades, ICBM fuze refurbishment, and modernizing data transfer technology. Additionally, the Air Force and the National Nuclear Security Administration (NNSA) plan to start a life extension program for the W78.

Although a decision on a follow-on ICBM is not needed for several years, the Nuclear Posture Review recognized the need for studies to inform a decision on Ground-Based Strategic Deterrence beyond 2030. In January 2011, AFGSC initiated study efforts appropriate to the early stages of the ICBM follow-on. Once these are complete, the study will move into a Materiel Solution Analysis (MSA) phase, which will include an Analysis of Alternatives (AoA). We plan to complete the MSA phase in fiscal year (FY) 14.

Air Force modernization plans for our current B-52s and B-2 bomber fleet continue an effort to maintain a viable force. The B-2 is the only aircraft capable of long-range delivery of direct attack munitions in an anti-access environment. To ensure the B-2 can continue to operate in high threat environments, we have programs to modernize communication, offensive, and defensive systems. For the B-52, we have programs to modernize and sustain the communication, radar, and weapon delivery systems.

Beyond modernization of existing platforms, we recognize the changing threat environment of the future requires improved capabilities. To meet that need, the Air Force is programming for a long range, nuclear capable, penetrating bomber. This program will leverage mature technologies and follow streamlined acquisition processes and focus on affordability with unit cost targets informing design trades and ensuring sufficient inventory. The program will begin in FY12 delivering an initial capability in the mid-2020s with a planned production of 80-100 bombers.

The Air Force will sustain the current Air Launched Cruise Missile (ALCM) until a follow-on advanced penetrating long range standoff (LRSO) missile capability is fielded. We have multiple service life extension programs to ensure viability of the propulsion systems, guidance and flight control systems, and warhead arming components. Preparation activity began in Nov 2010. The AoA final report is due in May 2012. The Air Force has programmed for research, development, test and evaluation over the next five years for the development of LRSO.

The Air Force continues to program for a nuclear-capable F-35 to modernize the Dual-Capable Aircraft (DCA) fleet. The investment over the Future Year Defense Plan (FYDP) for F-35 DCA ensures effective transition of this capability from our legacy fleet.

The B61 Life Extension Program continues to be a top priority. The Air Force is committed, with the NNSA, to improve the safety and security of the B61 and ensure the Tail Kit Assembly acquisition schedule remains on track for an FY17 First Production Unit delivery. The B61 will remain compatible with current nuclear capable platforms to maintain effectiveness against projected target sets for years to come. This will also ensure the US retains the capability to forward-deploy non-strategic nuclear weapons in support of Alliance commitments.

The Air Force started the Common Vertical Lift Support Platform (CVLSP) program to address capability gap shortfalls in helicopter nuclear security support, and Continuity of Government (COG)/ Continuity of Operations (COOP) missions. The CVLSP Program seeks to replace existing UH-1N fleet with an off-the-shelf, non-developmental aircraft. We are currently evaluating acquisition strategies to best meet warfighter requirements with a goal of an FY15 Initial Operational Capability.

There are many other initiatives required to maintain a safe, secure, and effective arsenal. The Air Force will spend approximately $1B over the FYDP in critical areas, such as Transporter Erector Hoists, Weapons Load Trailers, Electronic Systems Test Sets, Weapons Storage and Security System (WS3), and Reentry System Test Set cables. The Air Force also continues its commitment to maintaining its history of safe and secure resource transportation. To this end, AFGSC is actively programming to rapidly replace the current Payload-Transporter vehicle with a model with improved safety and security features.

Implement the Nuclear Posture Review & New Strategic Arms Reduction Treaty

During the next seven years, implementation of the 2010 Nuclear Posture Review (NPR) and New START Treaty (NST) will bring a reduction in the role and numbers of nuclear weapons in our national security strategy. Under the NPR, the Air Force will remove multiple warheads from its ICBMs. Under NST, which entered into force on February 5, 2011, the United States and Russia will reduce the number of accountable strategic warheads from the current Moscow Treaty warhead limit of 2,200 to 1,550. Within the treaty's central limits on Strategic Delivery Vehicles (SDVs), the Air Force will reduce the numbers of deployed ICBMs and convert some nuclear-capable B52s to conventional-only capability. Final force structure will be based on meeting the combatant commander's requirements and maintaining overall effectiveness of the deterrent force. We are currently developing options to reach the force levels specified in the treaty and have initiated the appropriate planning, programming, logistics, engineering and environmental studies to support these decisions, inform Congress, and meet treaty obligations.

For its part, the Air Force began formal data exchanges with Russia in March. Inspections and exhibitions of bombers and missiles will start this month. The Air Force will also begin actions necessary to reduce deployed bombers and missiles, convert some nuclear-capable B-52 bombers to conventional-only capability, and eliminate of other assets such as, Peacekeeper silos, 564th Missile Squadron silos, and B-52s to comply with central treaty limits. These actions must be completed by February 2018.

Global Strike Command will lead the Air Force portion of this effort. Lt Gen Kowalski and his team of dedicated professionals are finalizing implementation and compliance plans to ensure the safety and security of our nuclear force as we draw down to NST mandated levels, all the while preserving the ability to deter adversaries, and assure allies and partners.

In preparing for the new verification regime, the Air Force is also working closely with the Office of the Secretary of Defense and United States Strategic Command.

Craft a Comprehensive Deterrence and Crisis Stability Vision that Builds on the Nuclear Posture Review

As we think about providing deterrence in the 21st century, it's important to remember that not only is the Cold War over, the post-Cold War is over. Airmen who started active duty service after the fall of the Soviet Union are now retirement eligible. A generation has passed. That does not mean that strategic deterrence and nuclear forces are anachronisms. What it does mean is that we need to hit fast-forward on how we think about Nuclear Deterrence Operations in the complex security environment of today and tomorrow. The 2010 Joint Operational Environment declared: "For the past twenty years, Americans have largely ignored issues of deterrence and nuclear warfare. We no longer have that luxury." Successful strategic deterrence in the 21st Century requires stability-based analysis that goes beyond traditional numbers-based assessments to determine optimal deterrence force structure and posture. The Air Force is

revitalizing deterrence thinking to meet the challenges of our complex "multi-nodal" security environment.

Conclusion

Our ability to enable other nations to achieve their security goals, serve as a convener to cooperatively address common security challenges, or lastly, act as a security guarantor, preferably with partners and allies, but alone if necessary, rests on a foundation of U.S. nuclear capabilities and the strategic deterrence they provide. Your Air Force is *Continuing to Strengthen* our strategic deterrent force. This will be a long-term, systematic effort to refine and solidify earlier "reinvigoration" initiatives and to codify institutional changes ensuring safe, secure, and effective nuclear capabilities for the Nation.

The President's Budget Request reflects the positive steps we are taking to improve this Air Force core function. Across the FYDP, Air Force investment in Nuclear Deterrence Operations totals $28 billion. The Air Force is committed to ensuring this investment results in systems and capabilities that best operationalize strategic deterrence for our Nation in the *multi-nodal* security environment we face.

The National Military Strategy acknowledges, "Our Nation's security and prosperity are inseparable" and "Preventing wars is as important as winning them, and far less costly." In this time of limited resources, the efficiency of Nuclear Deterrence Operations is evident in the fact that for approximately 3% of the Air Force Total Obligation Authority, your Air Force continues to deliver the bedrock of global strategic stability providing the ICBM and Bomber legs of the Triad as well as dual-capable fighter capability twenty-four hours a day, seven days a week, three hundred sixty-five days a year.

Thank you for the committee's continued support of America's Air Force and particularly to its Airmen and their contributions to strategic deterrence.

NOT FOR PUBLICATION UNTIL RELEASED BY
THE HOUSE ARMED SERVICES COMMITTEE
STRATEGIC FORCES SUBCOMMITTEE

STATEMENT OF

REAR ADMIRAL TERRY BENEDICT, USN

DIRECTOR, STRATEGIC SYSTEMS PROGRAMS

BEFORE THE

SUBCOMMITTEE ON STRATEGIC FORCES

OF THE

HOUSE ARMED SERVICES COMMITTEE

FY2012 STRATEGIC SYSTEMS

5 APRIL 2011

NOT FOR PUBLICATION UNTIL RELEASED BY
THE HOUSE ARMED SERVICES COMMITTEE
STRATEGIC FORCES SUBCOMMITTEE

Introduction

Chairman Turner, Ranking Member Sanchez, distinguished Members of the subcommittee, thank you for this opportunity to discuss Navy's strategic programs. It is an honor to testify before you this morning representing the Navy's Strategic Systems Programs (SSP).

SSP's mission is to design, develop, produce, support and protect our Navy's sea-based strategic deterrent, the Trident II (D5) Strategic Weapon System (SWS). The Trident II (D5) Submarine Launched Ballistic Missile (SLBM) represents the nation's most survivable strategic deterrent capability. The men and women of SSP and our industry partners remain dedicated to supporting the mission of our Sailors on strategic deterrent patrol and our Marines and Sailors who are standing the watch ensuring the security of the weapons we are entrusted with by this nation.

It has been eleven months since I assumed command as the 13th Director of SSP. This is a relatively small number of incumbents since the inception of the program 55 years ago. Since returning to SSP, I have focused on four priorities: Nuclear Weapons Security; the Trident II (D5) SWS Life Extension Program; the OHIO Replacement Program; and the Solid Rocket Motor Industrial Base. Today, I would like to discuss my four priorities and why these priorities are keys to the sustainment of the Navy's sea-based strategic deterrent and its future viability. I will also provide an update on our SSBN force and our flight test program.

Nuclear Weapons Security

The first priority I would like to address, and arguably the most important priority, is the safety and security of the Navy's nuclear weapons. Navy leadership has clearly delegated and defined SSP's role as the program manager and technical authority for the Navy's nuclear weapons and nuclear weapons security in SECNAV Instruction 8120.1.

At its most basic level, this priority is the physical security of one of our nation's most valuable assets. Our Marines and Navy Masters at Arms provide an effective and integrated elite security force at our two Strategic Weapons Facilities in Kings Bay, Georgia and Bangor, Washington. US Coast Guard Maritime Force Protection Units have been commissioned at both facilities to protect our submarines as they transit to and from their dive points. These Coast Guardsmen and the Navy vessels they man provide a security umbrella for our OHIO Class submarines. Together, the Navy, Marine Corps and Coast Guard team form the foundation of our Nuclear Weapons Security Program.

SSP's efforts to sustain the safety and improve the security of these national assets continue at all levels of the organization. On October 1st, I stood up a new division within SSP responsible for overseeing all nuclear safety and security operations, as well as managing the future acquisition planning for this mission. SSP continues to maintain a safe, reliable, and secure environment for our strategic assets as well as focus on the custody and accountability of the nuclear assets that have been entrusted to the Navy.

D5 Life Extension Program

The next priority I would like to discuss is SSP's life extension efforts to ensure an effective and reliable sea-based deterrent. We are executing the Trident II (D5) Life Extension Program in cooperation with the UK, under the auspices of the Polaris Sales Agreement. I am pleased to report that our longstanding partnership with the UK remains strong.

The Trident II (D5) SWS continues to demonstrate itself as a credible deterrent and meets the operational requirements established for the system almost thirty years ago. We have successfully conducted 135 consecutive flight tests of the D5 missile and continue to exceed our required performance. This record of success demonstrates our Navy's ability to respond if called upon. Our allies and any potential rivals are assured the US strategic deterrent is ready, credible, and effective.

However, we cannot simply rest on our successes. The Trident II (D5) SWS has been deployed on our OHIO Class ballistic missile submarines for over twenty years, and is planned for operational deployment for at least another thirty years, making it operational longer than any other missile system SSP has deployed. We must remain vigilant of age-related issues to ensure a continued high level of reliability.

The Navy is proactively taking steps to address aging and technology obsolescence. SSP is extending the life of the D5 Strategic Weapon System to match the OHIO Class submarine service life and to serve as the initial baseline mission payload for the OHIO Replacement submarine platform. This is being accomplished through an update to all

the Trident II (D5) SWS subsystems: launcher, navigation, fire control, guidance, missile and reentry. Our flight hardware - missile and guidance - life extension efforts are designed to meet the same form, fit and function of the original system, in order to keep the deployed system as one homogeneous population and to control costs. We will also remain in continuous production of energetic components such as solid rocket motors. These efforts will provide the Navy with the missiles and guidance systems we need to meet operational requirements.

SSP previously restructured the D5 Life Extension Program to ensure sufficient time for additional missile electronics design evolutions. I am pleased to report that our restructured program is on track. SSP successfully conducted a system Critical Design Review of the missile electronics in January 2011. Our life extended guidance system also completed its Critical Design Review and is scheduled for its first flight test in FY 2012. Our first flight test of a D5 life extended missile is scheduled in FY 2013. The Initial Operating Capability of the combined missile and guidance systems is scheduled in FY 2017.

Another major step to ensure the continued sustainment of our SWS is our SSP Shipboard Integration (SSI) efforts, which utilizes open architecture and commercial off-the-shelf hardware. The first increment of this update is now being installed throughout the fleet and training facilities. To date, installation is complete on four US SSBNs and two UK SSBNs. This effort is a technical obsolescence refresh of shipboard electronics hardware and software upgrades, which will provide greater maintainability of the SWS and ensure we continue to provide the highest nuclear weapons safety and security for

our deployed SSBNs. The first end-to-end operational test of the SSI Increment 1 was successfully conducted in March 2011 on the USS NEVADA (SSBN 733).

To sustain the SWS, SSP is extending the life of the W76 reentry system through a refurbishment program known as the W76-1. This program is being executed in partnership with the Department of Energy, National Nuclear Security Administration. The W76-1 is now in full production and has achieved Initial Operating Capability. The W76-1 refurbishment maintains the military capability of the original W76 for approximately an additional thirty years. This program successfully incorporated commercial off-the shelf hardware and other economies to achieve Navy component production costs 75% less than previous nuclear Arming, Fuzing and Firing systems.

In addition to the W76-1, the Navy is in the initial stages of refurbishing the W88 reentry system. The Navy is collaborating with the Air Force to reduce costs through shared technology. This refurbishment will reach Initial Operation Capability in the SLBM Fleet in 2018. These programs will provide the Navy with the weapons we need to meet operational requirements throughout the OHIO service life and the planned follow-on platform.

OHIO Replacement Program

My third priority and one of the highest Navy priorities is the OHIO Replacement Program. The continued assurance of our sea-based strategic deterrent requires a credible SWS as well as the development of the next class of ballistic missile submarines. The Navy team is taking aggressive steps to ensure the OHIO Replacement Program is

designed, built and delivered on time with the right capabilities at an affordable cost. The Office of the Secretary of Defense (OSD) Defense Acquisition Board approved the OHIO Replacement Program Milestone A in January 2011 and authorized entry into the Technology Development Phase.

The Navy team has the benefit of leveraging the success of the Virginia Class build program and the opportunity to implement many of those lessons-learned to help ensure we design the OHIO Replacement for affordability both in terms of the acquisition and life cycle maintenance. Maintaining this capability is critical to the continued success of our sea-based strategic deterrent now and into the future.

The OHIO Replacement Program will replace the existing fourteen OHIO Class submarines. To lower development costs and leverage the proven reliability of the Trident II (D5) SWS, the OHIO Replacement will enter service with the Trident II (D5) SWS and D5 life-extended missiles onboard beginning in 2029. These D5 life extended missiles will be shared with the existing OHIO Class submarine for approximately thirteen years until the OHIO Class retires. Maintaining one SWS during the transition to the OHIO Class Replacement is beneficial from a cost, performance and risk reduction standpoint.

A critical component of the OHIO Replacement Program is the development of a Common Missile Compartment that will support Trident II (D5) deployment on both the OHIO Class Replacement and the Successor to the UK Vanguard Class. The US and the UK have maintained a shared commitment to nuclear deterrence through the Polaris Sales Agreement since April 1963. The US will continue to maintain its strong strategic

relationship with the UK for our respective follow-on platforms, based upon the Polaris Sales Agreement. As Director, SSP I am the US Executor of this agreement. Our programs are tightly coupled both programmatically and technically to ensure we are providing the most cost effective, technically capable nuclear strategic deterrent for both nations.

The New START Treaty, which entered into force on February 5, and the Nuclear Posture Review reinforce the importance of strategic submarines and the SLBMs they carry, as the most survivable leg of the Triad. The reductions in warheads and launchers will result in ballistic missile submarines carrying the majority of the Nation's strategic force. Our continued stewardship of the Trident II (D5) SWS is necessary to ensure a credible and reliable SWS is deployed today on our OHIO Class submarines, as well as, in the future on the OHIO replacement.

The OHIO replacement will be a strategic, national asset whose endurance and stealth will enable the Navy to provide continuous, uninterrupted strategic deterrence into the 2080s. The development of this follow-on capability requires the cooperation of the Executive branch and the Congress to deliver an effective sea-based deterrent on time with the right capabilities to sustain the most survivable leg of our Triad at the right cost for many decades to come.

Solid Rocket Motor Industrial Base

The fourth priority I would like to discuss is the importance of the defense and aerospace industrial base. In particular, the decline of the Solid Rocket Motor industry has placed a heavy burden on Navy resources. The Navy is maintaining a continuous

production capability at a minimum sustaining rate of twelve rocket motor sets per year through the Future Years Defense Plan (FYDP). However, we have faced significant cost challenges as both NASA and Air Force demands have declined. We will continue to experience those cost increases if demand shrinks further in coming years.

Reduced industrial demand has resulted in overhead costs spread over a smaller customer base. The Navy's growing percentage of the Solid Rocket Motor business base has already resulted in increased unit costs. In addition, Trident II (D5) is the only program in production of Class 1.1 type propellant. This type of propellant is highly energetic and necessary for use in submarines due to volume constraints.

Navy added funding to the budget to address the unit cost increase. While these additional funds are essential for the continued production of D5 rocket motors, the long-term sustainment of this vital national capability must also be addressed.

We are working with our industry partners, DoD and Congress to sustain the Solid Rocket Motor industrial base and find ways to maintain successful partnerships. The OSD (Industrial Policy)-led Inter Agency Task Force, with membership from Navy, the Air Force, OSD along with the Missile Defense Agency and NASA, is developing a Solid Rocket Industrial Base Sustainment Plan. SSP is an integral part of this process. We look forward to continuing this collaborative process to find an inter-agency solution to maintain this crucial national capability.

Today's Force

The final topic I would like to address is our SSBN force. Our fourteen US Navy SSBNs, eight of which are home ported in the Pacific and six in the Atlantic Fleet,

continue to provide a credible, survivable and reliable sea-based strategic deterrent for our national leadership.

Last month, the USS NEVADA (SSBN 733) successfully conducted her Demonstration and Shakedown Operation (DASO) involving the launch and flight test of a Trident II (D5) missile and is now ready to return to strategic service. The completion of this test marks the 135th consecutive successful flight test of a D5 missile. Therefore, I am pleased to report to you the Trident SWS continues to demonstrate itself as a credible deterrent and meet the operational requirements established for the system almost thirty years ago.

USS TENNESSEE (SSBN 734) will soon complete her Engineering Refueling Overhaul, enter post availability testing, prepare for her Demonstration and Shakedown Operation, and return to the operational force in the Spring of 2012. Two more of our SSBN submarines are undergoing Engineering Refueling Overhauls, which will maintain the viability of these platforms through the service life of the OHIO Class.

We must continue to be vigilant of age-related issues to ensure the high reliability needed for our SWS. With the Trident II (D5) missile planned for operational deployment through the service life of the OHIO Class and as the initial payload on the OHIO Replacement, D5 hardware will age beyond our previous experience base and will be operational almost twice as long as any previous sea-based strategic deterrent. Therefore, SSP has adjusted our flight testing philosophy to focus on older flight hardware in order to best predict aging characteristics. We tested our oldest missile to

date from the USS NEVADA last month. The first and second stage rocket motors were nearly 22 years old.

Conclusion

This is an exciting time to be the Director at SSP. The New START Treaty reduces both deployed and non-deployed nuclear weapons, which will require the US to continue to rely heavily on the survivable capability provided by ballistic missile submarines. As you know, the ballistic missile submarine is only one leg of the nuclear Triad. Land based ICBMs, nuclear capable heavy bombers, and the SSBN force work together to provide the total US nuclear deterrent. Each leg of the deterrent provides unique capabilities.

The 2010 Nuclear Posture Review also committed to strengthen conventional capabilities and reduce the role of nuclear weapons in deterring non-nuclear attacks, with the objective of making deterrence of nuclear attack on the United States or our allies and partners the sole purpose of U.S. nuclear weapons. SSP stands ready to support and participate in future Conventional Prompt Global Strike efforts should leadership authorize our participation. However, the NPR makes clear that as long as nuclear weapons exist, the US will sustain a safe, secure and effective nuclear deterrent. This includes modernizing nuclear weapons infrastructure; sustaining the science, technology and engineering base; investing in human capital; and ensuring that these goals remain a senior leadership focus. As the Navy's primary stakeholder, SSP is accountable for the technical oversight, safety and security of Navy nuclear weapons and we understand the vast responsibility entrusted to us.

Our nation's sea-based deterrent has been a critical component of our national security since the 1950s and will continue to assure our allies and deter our enemies well into the future. I am privileged to represent this unique organization as we work to serve the best interests of our great Nation.

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

April 5, 2011

RESPONSE TO QUESTION SUBMITTED BY MR. TURNER

Secretary WEBER. Department of Defense (DoD) leadership is working to formulate the DoD Nuclear Command, Control, and Communications (NC3) investment strategy in the broader context of the national leadership command capabilities, with a report due to the Congress by February 6, 2012.

The DoD Chief Information Officer (CIO) is working several key initiatives to address the findings highlighted within the Nuclear Posture Review and other national-level studies. The DoD CIO is developing a National Leadership Command Capability (NLCC) architecture framework to support the development of an integrated command capability in support of the national and nuclear mission. The framework includes the development of an enterprise-level model to capture the current nuclear architecture. The model will be one tool to provide the critical analysis needed to assess current capability gaps, provide trade-off analyses to make informed business decisions, develop risk mitigation strategies, and provide the foundation for significant and measurable improvements in our nuclear command and control capability.

In addition, the Department has developed draft policies that include a renewed emphasis on capturing and consolidating Nuclear Command and Control (NC2) configuration data in addition to new policy that directs management and oversight responsibilities for developing and maintaining the nuclear command, control, and communications capability that supports our nuclear deterrent strategy. The DoD CIO is developing a five-year roadmap for the national and nuclear mission that will lay out key elements of the concept of operations, a focus on information assurance requirements, and a comprehensive development and funding strategy. The CIO will be working with the Combatant Commands, Services, and Agencies in the Department, and key members within the Interagency to ensure the viability and soundness of the roadmap. The management and oversight of national and nuclear C3 mission issues are being addressed within the NLCC Executive Management Board (EMB) chaired by the DoD CIO.

DoD CIO and USSTRATCOM are also co-chairing a "National and Nuclear C3 Focus Team" that is analyzing and prioritizing NC3 funding issues, currently for POM13, to state the case for resourcing important National and NC3 programs.

These and other initiatives will provide the basis for the DoD CIO response to the House Armed Services Committee Report (112–78), in support of House Bill 1540, tasking the Department to "provide a report on the NC3 architecture, long-term strategy, and an identification of the NC3 elements across the services, including current and needed investments across the Future Years Defense Program" by February 6, 2012. This process will be worked by a Tiger Team under the NC2 Issues Working Group, under the auspices of the NLCC EMB.

The DoD would be pleased to answer any further questions you have on this matter to keep you appropriately informed. [See page 43.]

RESPONSE TO QUESTION SUBMITTED BY MR. FRANKS

Secretary D'AGOSTINO. [The information referred to is classified and is retained in the subcommittee files]. [See page 18.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

April 5, 2011

QUESTIONS SUBMITTED BY MR. TURNER

Mr. TURNER. The November update to the Section 1251 Report identified plans to provide an additional $4.1 billion increase to NNSA's budget for nuclear modernization. However, $1.5 billion of this $4.1 billion—or, 37-percent—is allocated to cost growth in NNSA defined-benefit pension plans.

Please explain the scope of this issue and why NNSA is in this situation. Is it unique to NNSA? What options are being considered by NNSA and what options might the Congress consider to give NNSA and its contractors greater flexibility in meeting their pension obligations?

Secretary D'AGOSTINO. Many DOE/NNSA contractors sponsor defined benefit plans for their employees. Pursuant to DOE/NNSA contracts, DOE and NNSA reimburse the contractors for pension contributions. In recent years, the market downturn has adversely affected defined benefit pension plans' asset performance. Poor asset performance combined with interest rate decreases have caused pension plans to become increasingly underfunded. This underfunding has resulted in increased pension contributions for DOE and NNSA contractors as well as many other private employers that sponsor defined benefit plans for their employees.

In accordance with its contractual obligations, DOE/NNSA is committed to continuing to reimburse contractors for these pension costs. As noted in the November 2010 Update to the Section 1251 Report required by the National Defense Authorization Act of FY2010, NNSA estimated that costs associated with contractor pension reimbursements would equal roughly $875 million during FY 2012. The $875 million figure has since been revised to $840 million and the revised figure was submitted in the February 2011 NNSA Congressional Budget Request. Of the approximately $840 million associated with NNSA contractor pension obligations for FY 2012, it is anticipated that the NNSA share of providing pension benefits to University of California retirees from Los Alamos National Laboratory (LANL) and Lawrence Livermore National Laboratory (LLNL) will approximate $224 million. The remaining amount of the estimated FY 2012 contribution is spread among 22 other retirement plans.

Over the past two years, DOE/NNSA has intensified its efforts to improve oversight of contractors' pension obligations. In particular, the Department and NNSA have:

- developed a central repository for pension and postretirement plan information that increases the ease in collecting updated information from contractors as well as provides Department users with the ability to compare information among the plans and determine trends among the contractor populations;
- acquired the capability to model financial and economic impacts across the complex's contactor pension plans;
- completed two annual comprehensive pension management plan reviews that further the robust interchange between the Department and its management and operating (M&O) and facilities management contractors; and
- initiated the second annual survey of the comprehensive contractor employee benefits analysis that will again be shared with the contractors and programs as well as compared to industry benchmarks.

With this information, DOE and NNSA are now better able to evaluate the breadth of the overall pension funding situation to determine actual pension cost projections for the future and develop policy options to mitigate and control pension cost growth, volatility, and liability to the Government.

Mr. TURNER. China's proliferation record in the past has been rather mixed, to say the least. Howard Berman, Ranking Member of the House Foreign Affairs Committee, once said that China's pattern was to "proliferate, promise not to, proliferate, promise not to, and proliferate." NNSA and DOD's Cooperative Threat Reduction (CTR) budgets now include proposed funding for a nuclear Center of Excellence in China. What confidence do you have that China has changed its behavior—that it is now committed to nonproliferation in its actions as well as its words?

Secretary D'AGOSTINO. In the past, the nuclear and arms trade practices of the People's Republic of China (PRC) did not conform to international nonproliferation

regime standards. Over the years, China has joined multilateral institutions and treaties such as the International Atomic Energy Agency (IAEA) in 1984 and the Nuclear Non-Proliferation Treaty (NPT) in 1992, while also engaging in bilateral cooperation, such as conducting activities under the 2004 Statement of Intent signed by DOE and the China Atomic Energy Authority (CAEA), and the 1998 Peaceful Uses of Nuclear Technology (PUNT) Agreement between DOE and the State Development Planning Commission of the PRC. Improving China's nuclear security and export controls standards has been a long-term, bipartisan security goal of the United States along with partner countries in the nonproliferation regime.

As a permanent member of the United Nations Security Council and a nuclear weapon state, China is a critical member of the nuclear security community. Formalizing the nonproliferation advances that China has made in the past decade is important to international efforts in nonproliferation. Recent high-level interactions, such as the state visit to the United States by President Hu Jintao in January 2011, and agency-to-agency technical exchanges, have reinforced the view that China is engaged in improving nuclear security. NNSA is therefore working with China to improve its indigenous capacity by sharing best practices in nuclear security and to assist the Chinese in implementing accepted global standards throughout their nuclear complex.

Through U.S.-China cooperative engagement, including the Center of Excellence (COE), NNSA aims to improve global nuclear security by raising China's awareness of material security issues and associated nuclear security and safeguards methods and technologies; promoting an export control system that prevents illicit transfers of WMD dual-use commodities; minimizing the use of highly enriched uranium (HEU) in civilian applications; establishing a platform for promoting further U.S.-China technical cooperation; strengthening China's training capabilities on nuclear and radiological material security; and improving security of radioactive sources. Cooperation on the COE reflects the U.S. and Chinese governments' commitment to strengthening their cooperation on nonproliferation, nuclear security and in combating nuclear terrorism.

Additional cooperation between the U.S. and China includes:

- NNSA and CAEA conducted a joint technology demonstration (Tech Demo) at the China Institute of Atomic Energy (CIAE) in October 2005 to promote adoption of modern security practices and technologies at China's nuclear facilities. The Tech Demo initiated cooperation in numerous areas, including material protection, control, and accounting; nuclear safeguards; nuclear security culture; domestic inspections; and secure transportation. Since the successful completion of the Tech Demo, NNSA's International Material Protection and Cooperation Program has cooperated with CAEA to conduct several technical workshops supporting the exchange of best practices in various areas of nuclear security.
- NNSA provided radiation detection equipment to China for the 2008 Beijing Olympics, the Shanghai Expo and the Asia Games and is also working to install radiation detection equipment at the Port of Yangshan in Shanghai.
- NNSA is also collaborating with the Chinese to establish a Customs training center at the Qinhuangdo Training Center.

Mr. TURNER. The U.S. has been doing the Nunn-Lugar program for a couple decades now, primarily focused on securing and dismantling nuclear systems in Russia and the former Soviet Union. Many of these efforts are nearing completion and ramping down.

Do you have any concerns about potential Russian proliferation threats that are not covered under the Nunn-Lugar program that worry you? If Russia has become a responsible actor with improved cash flow, shouldn't they be shouldering more of the responsibility for securing and destroying their own nuclear materials?

Secretary D'AGOSTINO. While the majority of major security upgrades in Russia, including all Russian Federation Ministry of Defense warhead storage sites, were completed by the end of 2008, as agreed to in the 2005 Bratislava Nuclear Security Initiative, several important areas and buildings have been added to the scope of our activities and are reflected in our revised Joint Action Plan, which lays out the scope of security work to be undertaken by the United States and Russia by site. These areas contain large quantities of weapons usable nuclear materials. The recent extension of the statutory deadline for bilateral cooperation in Material Protection, Control and Accounting (MPC&A) to January 1, 2018, will permit the MPC&A program to continue to work closely with the Russian Federation to ensure the successes of the past 15 years of cooperation are maintained until all cooperative upgrade projects are completed.

While some security upgrade work is still underway, NNSA and Rosatom have established well-defined criteria to guide the transition of sustainability responsibil-

ities to Russia for completed security upgrades by site, which are formalized in a Joint Sustainability Plan. This plan outlines seven key principles that characterize a sustainable MPC&A program and guide U.S.-Russian project teams assessments of each site's ability to transition to full Russian support (MPC&A organization; site operating procedures; human resource management and site training; operational cost analysis; equipment maintenance, repair, and calibration; performance testing and operational monitoring; and MPC&A system configuration management). When deficiencies are identified, U.S.-Russian project teams agree to specific activities that should be undertaken to address those gaps.

Though the NNSA is continuing efforts to fully transition responsibility for MPC&A sustainability support to the Russian Federation, it is in the national security interest of the United States to remain engaged. While there are no specific threats of concern outside the Nunn-Lugar Program scope, there are threats within the scope that continue to concern the U.S. and influenced the interest in MPC&A Program extension, namely the insider threat. While not a new consideration for the MPC&A Program, the threat of a knowledgeable, authorized person (insider) stealing even small quantities of nuclear material remains a concern. The MPC&A Program is looking at new and creative ways to further thwart insider theft or diversion of materials through additional layers of security, programmatic and procedural changes, and further improvements to nuclear material control and accounting.

We agree that as Russian national budgets increase, their share of funds devoted to nuclear security activities should increase as well. At every opportunity, NNSA seeks to cost share with our Russian counterparts, and has a long list of successful examples.

Examples include:

- At various Russian Rosatom and Civilian sites, cost sharing arrangements are in place for the installation and sustainability of MPC&A upgrades. In addition, the Ministry of Defense has committed to take over full financial responsibility for sustaining permanent warhead sites (11 sites with DOE-funded upgrades, 18 sites with DOD-funded upgrades).
- The Second Line of Defense Program has a cost-sharing arrangement with the Russian Federal Customs Service (FCS) for installing radiation detection equipment at Russia's border crossings whereby approximately half of the sites have been funded and equipped by the FCS and half funded and equipped by NNSA. Transition of all maintenance and sustainability responsibility to the FCS for deployed radiation detection systems is planned to be completed by 2013.
- In support of Russian plutonium disposition efforts, the Fast Reactor and Gas Turbine-Modular Helium Reactor (GT–MHR) programs both rely on cost-sharing. For Russian plutonium disposition, the U.S. pledged to provide up to $400 million to assist Russia in disposing of its excess weapon-grade plutonium. The total estimated cost of the Russian contribution for implementing the program is approximately $2.5 billion. The U.S. may fund up to 100% of a limited number of non-proliferation activities (BN–600 blanket removal and BN–800 core redesign), but in most cases the U.S. will fund no more than 50% of the total cost of any given Russian plutonium disposition activity. For the GT–MHR program, joint research and development in Russia is funded on a 50/50 cost sharing basis with the U.S. Since 2000, the U.S. has provided $29.1 million and Rosatom has provided $32.6 million for GT–MHR work in Russia. The U.S. does not release funds until Rosatom commits, in writing, to provide an equivalent amount of Russian funds. U.S. funds for the GT–MHR program do not count against the $400 million U.S. pledge.

With respect to securing vulnerable radiological materials in Russia, the Global Threat Reduction Initiative (GTRI) is continuing its cooperative efforts to recover radioisotope thermoelectric generators (RTGs) in the Russian Federation. GTRI funds have supported the recovery, disassembly, and disposal of RTGs, as well as the replacement of these units with alternative power sources (APS). As an example of cost-sharing, GTRI no longer pays for the installation of APS units. Instead, Russia is responsible for securing the necessary transportation and technical crew to complete the installations. Additionally, Russia has provided discounted or 'at cost' rates for some RTG transportation during multiple U.S.-funded recovery campaigns. Although the U.S. plays a large role in recovering RTGs, it is an international effort involving Norway, France, Canada, and Russia. To date, the U.S. has recovered 273 RTGs, Norway has recovered 213 RTGs (some using funds from Finland), France has recovered 16 RTGs, and Canada has funded the recovery of 64 RTGs through the U.S. and Norway. Using these contributions, Russian technical specialists perform the RTG recovery, transport, disassembly, and disposal activities. Additionally, Russia pays for the recovery of RTGs using funds from the Federal Target Program

(FTP). In the past few years, Russia has recovered 32 RTGs. The RTG recoveries are coordinated at the international level through the IAEA.

Mr. TURNER. Administrator D'Agostino, in your testimony you noted that it would not be advisable to make reductions in our hedge stockpile until NNSA is able to "demonstrate that our infrastructure is responsive and being able to respond to needs that the country may have," which included "having a uranium processing facility that is up and running, having a chemistry and metallurgy research replacement facility that is available to do the surveillance work on our stockpile and help support a modest amount of pit manufacturing capability," as well as a capability at the Pantex Plant to make the size of high explosives necessary to support the stockpile out into the future.

Secretary D'AGOSTINO. To elaborate, as described in the Nuclear Posture Review, the non-deployed stockpile currently includes more warheads than required to hedge against technical or geopolitical surprise, due to the limited capacity of the NNSA complex to conduct LEPs for deployed weapons in a timely manner. Progress in restoring NNSA's production infrastructure will allow these excess warheads to be retired along with other stockpile reductions planned over the next decade.

The recommended size of the projected future stockpile is updated annually in a Nuclear Weapons Council memorandum to the President based on a joint DoD–DOE assessment that factors in progress on LEPs, NNSA progress in infrastructure recapitalization, and the geopolitical security environment. Ultimately, the President has the final say regarding the size of the stockpile. The President's final decision comes in the form of a Presidential Policy Directive.

Mr. TURNER. The May 2010 Stockpile Stewardship and Management Plan (SSMP), Table D–1, specifies a "baseline capacity provided by a capability-based infrastructure" to include the ability to deliver to the stockpile up to 80 plutonium pits and 80 Canned Sub-Assemblies (CSAs) per year. The SSMP further states that the manufacturing capability for 80 pits and 80 CSAs per year are dependent on the construction completion of the Chemistry and Metallurgy Research Replacement (CMRR) facility and Uranium Processing Facility (UPF). Furthermore, in reply to a committee request for information (delivered to the committee on April 12, 2011), NNSA noted that reductions in the hedge stockpile would be conditioned on the "realization" of certain "events," including "successful" Life Extension Programs for several warheads, and the "full operational functionality" of CMRR and UPF, planned for 2023 and 2024, respectively.

Secretary D'AGOSTINO. To elaborate, as described in the Nuclear Posture Review, NNSA has a limited capacity for nuclear warhead component production. Current facilities cannot support future stockpile life extension requirements, and have no "surge" capacity in the event of a technical failure or geopolitical surprise. Therefore, USSTRATCOM requires that NNSA maintain a hedge stockpile. As noted in the NPR, progress in restoring NNSA's infrastructure—construction of CMRR and UPF, among other facilities—should allow this hedge to be reduced.

Mr. TURNER. The compilation of this testimony and material from NNSA would lead one to conclude that reductions in the hedge stockpile should not be made until these conditions are met. Please tell us if this conclusion is correct, and elaborate on these and any other specific capabilities that must be demonstrated or fully operational, and identify the associated infrastructure milestones for the realization of such capabilities, before such cuts could safely be made while preserving current or better levels of safety, security, and reliability to our deterrent.

Secretary D'AGOSTINO. As described in the Nuclear Posture Review, NNSA has a limited capacity for nuclear warhead component production. Current facilities cannot support future stockpile life extension requirements, and have no "surge" capacity in the event of a technical failure or geopolitical surprise. Therefore, USSTRATCOM requires that NNSA maintain a hedge stockpile. As noted in the NPR, progress in restoring NNSA's infrastructure—construction of CMRR and UPF, among other facilities—should allow this hedge to be reduced.

The recommended size of the projected future stockpile is updated annually in a Nuclear Weapons Council memorandum to the President based on a joint DoD–DOE assessment that factors in progress on LEPs, NNSA progress in infrastructure recapitalization, and the geopolitical security environment. Ultimately, the President has the final say regarding the size of the stockpile. The President's final decision comes in the form of a Presidential Policy Directive.

Mr. TURNER. Administrator D'Agostino, how quickly would we be able to respond to unfavorable changes in the geopolitical nuclear security environment? Please comment on whether significant reductions to our deployed and non-deployed weapons would constrain or expand our technical flexibility to respond to unfavorable changes in the geopolitical environment, and how this technical flexibility would be affected as our weapons continue to age.

Secretary D'AGOSTINO. The first and second questions are for DoD and STRATCOM, not the NNSA to answer.

Regarding the questions on how this technical flexibility would be affected as our weapons age, one of the reasons the reserve stockpile is maintained in such a high state of readiness is because NNSA has a limited capacity for nuclear warhead component production. As noted in the NPR, progress in restoring NNSA's infrastructure—construction of CMRR and UPF, among other facilities—should allow this hedge to be reduced as we transfer risk from the reserve stockpile to the infrastructure. However, our ability to retire additional weapons or conduct follow on strategic or non-strategic reductions is a policy decision not directly affecting NNSA at this time. Previous Administrations have exercised this flexibility in consultation with allies, and reduced the number of weapons needed to provide extended deterrence and meet security commitments.

Projected future reductions to the total stockpile are premised on a number of assumptions and events, listed below. As these assumptions and events are realized, reductions in the size of the hedge should begin to occur.

- New START implementation occurs as scheduled (New START entered into force on February 5, 2011).
- Warhead life extensions increase stockpile safety, security, and reliability as planned and required.
- Infrastructure improvements provide the capability to produce components and extend the life of existing weapons. The CMRR and UPF are expected to be at full operational functionality by 2023 and 2024, respectively. The Pantex High Explosive Pressing Facility is expected to be fully operational in 2017.
- The geopolitical nuclear security environment remains favorable.

The realization of these events will allow us to mitigate the risk that significant reductions to the deployed and non-deployed stockpiles will constrain our technical flexibility to respond to unfavorable changes in the geopolitical environment. Moreover, modernization of the Nuclear Security Enterprise and continued success in the science based stockpile stewardship and management program will provide a solid foundation for our continued ability to increase our technical flexibility to manage our aging stockpile at lower numbers.

In addition to maintaining a strong nuclear deterrent, the NNSA is developing a broad array of capabilities underpinning an agile response to future changes in the global nuclear security environment. NNSA's Defense, Nonproliferation, Counterterrorism, and Emergency Response Programs are collaborating to provide capabilities to analyze foreign nuclear weapons programs and to strengthen nuclear forensics capabilities. The Supplemental Appropriations Act, 2009 P. L. 111–32 provided $30 million to support a sustainable capability to analyze nuclear and biological weapons intelligence, resulting in more effective management and technical coordination between NNSA and the intelligence community.

Beyond FY12, NNSA plans to advance a program that would continue to strengthen the science and technology capabilities needed for assessing foreign nuclear weapons activities. Building on the infrastructure supporting stewardship of the US stockpile, this program will ensure an enduring technical foundation for intelligence missions. Capabilities developed under this program will advance the development and interpretation of intelligence indicators, the assessment of foreign weapons capabilities, and the mitigations of threats associated with technical advances. The NNSA also has an effort underway to strengthen related nuclear counterterrorism and counterproliferation efforts that cut across a number of its major programs.

Mr. TURNER. China's proliferation record in the past has been rather mixed, to say the least. Howard Berman, Ranking Member of the House Foreign Affairs Committee, once said that China's pattern was to "proliferate, promise not to, proliferate, promise not to, and proliferate." NNSA and DOD's Cooperative Threat Reduction (CTR) budgets now include proposed funding for a nuclear Center of Excellence in China. What confidence do you have that China has changed its behavior—that it is now committed to nonproliferation in its actions as well as its words?

Ms. HARRINGTON. In the past, the nuclear and arms trade practices of the People's Republic of China (PRC) did not conform to international nonproliferation regime standards. Over the years, China has joined multilateral institutions and treaties such as the International Atomic Energy Agency (IAEA) in 1984 and the Nuclear Non-Proliferation Treaty (NPT) in 1992, while also engaging in bilateral cooperation, such as conducting activities under the 2004 Statement of Intent signed by DOE and the China Atomic Energy Authority (CAEA), and the 1998 Peaceful Uses of Nuclear Technology (PUNT) Agreement between DOE and the State Development Planning Commission of the PRC. Improving China's nuclear security and export

controls standards has been a long-term, bipartisan security goal of the United States along with partner countries in the nonproliferation regime.

As a permanent member of the United Nations Security Council and a nuclear weapon state, China is a critical member of the nuclear security community. Formalizing the nonproliferation advances that China has made in the past decade is important to international efforts in nonproliferation. Recent high-level interactions, such as the state visit to the United States by President Hu Jintao in January 2011, and agency-to-agency technical exchanges, have reinforced the view that China is engaged in improving nuclear security. NNSA is therefore working with China to improve its indigenous capacity by sharing best practices in nuclear security and to assist the Chinese in implementing accepted global standards throughout their nuclear complex.

Through U.S.-China cooperative engagement, including the Center of Excellence (COE), NNSA aims to improve global nuclear security by: raising China's awareness of material security issues and associated nuclear security and safeguards methods and technologies; promoting an export control system that prevents illicit transfers of WMD dual-use commodities; minimizing the use of highly enriched uranium (HEU) in civilian applications; establishing a platform for promoting further U.S.-China technical cooperation; strengthening China's training capabilities on nuclear and radiological material security; and improving security of radioactive sources. Cooperation on the COE reflects the U.S. and Chinese governments' commitment to strengthening their cooperation on nonproliferation, nuclear security and in combating nuclear terrorism.

Additional cooperation between the U.S. and China includes:

- NNSA and CAEA conducted a joint technology demonstration (Tech Demo) at the China Institute of Atomic Energy (CIAE) in October 2005 to promote adoption of modern security practices and technologies at China's nuclear facilities. The Tech Demo initiated cooperation in numerous areas, including material protection, control, and accounting; nuclear safeguards; nuclear security culture; domestic inspections; and secure transportation. Since the successful completion of the Tech Demo, NNSA's International Material Protection and Cooperation Program has cooperated with CAEA to conduct several technical workshops supporting the exchange of best practices in various areas of nuclear security.
- NNSA provided radiation detection equipment to China for the 2008 Beijing Olympics, the Shanghai Expo and the Asia Games and is also working to install radiation detection equipment at the Port of Yangshan in Shanghai.
- NNSA is also collaborating with the Chinese to establish a Customs training center at the Qinhuangdo Training Center.

Mr. TURNER. The U.S. has been doing the Nunn-Lugar program for a couple decades now, primarily focused on securing and dismantling nuclear systems in Russia and the former Soviet Union. Many of these efforts are nearing completion and ramping down.

Do you have any concerns about potential Russian proliferation threats that are not covered under the Nunn-Lugar program that worry you? If Russia has become a responsible actor with improved cash flow, shouldn't they be shouldering more of the responsibility for securing and destroying their own nuclear materials?

Ms. HARRINGTON. While the majority of major security upgrades in Russia, including all Russian Federation Ministry of Defense warhead storage sites, were completed by the end of 2008, as agreed to in the 2005 Bratislava Nuclear Security Initiative, several important areas and buildings have been added to the scope of our activities and are reflected in our revised Joint Action Plan, which lays out the scope of security work to be undertaken by the United States and Russia by site. These areas contain large quantities of weapons usable nuclear materials. The recent extension of the statutory deadline for bilateral cooperation in Material Protection, Control and Accounting (MPC&A), to January 1, 2018, will permit the MPC&A program to continue to work closely with the Russian Federation to ensure the successes of the past 15 years of cooperation are maintained until all cooperative upgrade projects are completed.

While some security upgrade work is still underway, NNSA and Rosatom have well defined criteria used to transition sustainability to Russia for completed security upgrades by site, which are formalized in a Joint Sustainability Plan. This plan outlines seven key principles that characterize a sustainable MPC&A program and guide U.S.-Russian project teams assessments for each site's ability to transition to full Russian support (MPC&A organization; site operating procedures; human resource management and site training; operational cost analysis; equipment maintenance, repair, and calibration; performance testing and operational monitoring; and MPC&A system configuration management). When deficiencies are identified, U.S.-

Russian project teams agree to specific activities that should be undertaken to address those gaps.

Though the NNSA is continuing efforts to fully transition responsibility for MPC&A sustainability support to the Russian Federation, it is in the national security interest of the United States to remain engaged. While there are no specific threats of concern outside the Nunn-Lugar Program scope, there are threats within the scope that continue to concern the U.S. and influenced the interest in MPC&A Program extension, namely the insider threat. While not a new consideration for the MPC&A Program, the threat of a knowledgeable, authorized person (insider) stealing even small quantities of nuclear material remains a concern. The MPC&A Program is looking at new and creative ways to further thwart insider theft or diversion of materials through additional layers of security, programmatic and procedural changes, and further improvements to nuclear material control and accounting.

We agree that as Russian national budgets increase, their share of funds devoted to nuclear security activities should increase as well. At every opportunity NNSA seeks to cost share with our Russian counterparts, and has a long list of successful examples. Examples include:

- At various Russian Rosatom and Civilian sites, cost sharing arrangements are in place for the installation and sustainability of MPC&A upgrades. In addition, the Ministry of Defense has committed to take over full financial responsibility for sustaining permanent warhead sites (11 sites with DOE-funded upgrades, 18 sites with DOD-funded upgrades).
- The Second Line of Defense Program has a cost-sharing arrangement with the Russian Federal Customs Service for installing radiation detection equipment at Russia's border crossings whereby approximately half of the sites have been equipped by the FCS and half by NNSA. Transition of all maintenance and sustainability responsibility to the FCS for deployed radiation detection systems is planned to be completed by 2013.
- In support of Russian plutonium disposition efforts, the Fast Reactor and Gas Turbine-Modular Helium Reactor (GT–MHR) programs both rely on cost-sharing. For the fast reactor program, the U.S. pledged to provide up to $400 million to assist Russia in disposing of its excess weapon-grade plutonium. The total estimated cost of the Russian contribution for implementing the program is in excess of $2 billion. The U.S. may fund up to 100% of a limited number of nonproliferation activities (BN–600 blanket removal and BN–800 core redesign), but in most cases the U.S. will fund no more than 50% of the total cost of any given Russian plutonium disposition activity. For the GT–MHR program, joint research and development in Russia is funded on a 50/50 cost sharing basis. Since 2000, the U.S. has provided $29.1 million and Rosatom has provided $32.6 million for GT–MHR work in Russia. The U.S. does not release funds until Rosatom commits, in writing, to provide an equivalent amount of Russian funds. U.S. funds for the GT–MHR program do not count against the $400 million U.S. pledge.
- With respect to securing vulnerable radiological materials in Russia, the Global Threat Reduction Initiative (GTRI) is continuing its cooperative efforts to recover radioisotope thermoelectric generators (RTGs) in the Russian Federation. GTRI funds have supported the recovery, disassembly, and disposal of RTGs, as well as the replacement of these units with alternative power sources (APS). As an example of cost-sharing, GTRI no longer pays for the installation of APS units. Instead, Russia is responsible for securing the necessary transportation and technical crew to complete the installations. Additionally, Russia has provided discounted or 'at cost' rates for some RTG transportation during multiple U.S.-funded recovery campaigns. Although the U.S. plays a large role in recovering RTGs, it is an international effort involving Norway, France, Canada, and Russia. To date, the U.S. has recovered 273 RTGs, Norway has recovered 213 RTGs (some using funds from Finland), France has recovered 16 RTGs, and Canada has funded the recovery of 64 RTGs through the U.S. and Norway. Using these contributions, Russian technical specialists perform the RTG recovery, transport, disassembly, and disposal activities. Additionally, Russia pays for the recovery of RTGs using funds from the Federal Target Program (FTP). In the past few years, Russia has recovered 32 RTGs. The RTG recoveries are coordinated at the international level through the IAEA.

Mr. TURNER. China's proliferation record in the past has been rather mixed, to say the least. Howard Berman, Ranking Member of the House Foreign Affairs Committee, once said that China's pattern was to "proliferate, promise not to, proliferate, promise not to, and proliferate." NNSA and DOD's Cooperative Threat Re-

duction (CTR) budgets now include proposed funding for a nuclear Center of Excellence in China. What confidence do you have that China has changed its behavior—that it is now committed to nonproliferation in its actions as well as its words?

Secretary WEBER. We understand the concerns regarding China's past actions.

We believe that China shares our interest in improving the security of nuclear materials worldwide. The Center of Excellence partnership between the United States and China is intended to promote best practices in nuclear security in China and throughout the region.

Those best practices are intended to strengthen security procedures and reduce the likelihood of proliferation of nuclear material.

China is funding all construction and land acquisition for the Center of Excellence, which is significantly in excess of fifty percent (50%) of the expected total cost for establishment of the Center. Closely monitoring and managing funds for cooperative programming initiatives is a hallmark of the way we work, and we ensure accountability with all our partners.

Mr. TURNER. The U.S. has been doing the Nunn-Lugar program for a couple decades now, primarily focused on securing and dismantling nuclear systems in Russia and the former Soviet Union. Many of these efforts are nearing completion and ramping down.

a) Do you have any concerns about potential Russian proliferation threats that are not covered under the Nunn-Lugar program that worry you?

b) If Russia has become a responsible actor with improved cash flow, shouldn't they be shouldering more of the responsibility for securing and destroying their own nuclear materials?

Secretary WEBER. (a) The Nunn-Lugar Cooperative Threat Reduction (CTR) Program continues to be a primary mechanism by which the U.S. Government partners with the Russian Federation to address shared proliferation concerns.

The CTR Program's site-specific work in Russia is a key component of the U.S. interagency strategy to support the focused and intensified international effort to secure or eliminate nuclear materials.

Working with the U.S. Department of Energy (DOE), we continue to partner with the Russian Ministry of Defense (MOD) to ensure that the necessary capabilities exist to transition responsibility to MOD to maintain and sustain the physical protection system upgrades that have been installed at nuclear weapons storage sites.

Further, our continued support for transportation security in Russia supports U.S. nonproliferation objectives by securely shipping warheads to dismantlement locations or more secure storage sites, pending dismantlement.

(b) In addition to providing transparency into Russian Federation WMD threat reduction activities, the CTR Program enhances United States security by providing a mechanism to engage in confidence and security building measures, enabling us to share best practices in dismantling, destroying, securing, and safeguarding nuclear delivery systems.

We continue to believe that engagement with the Russian Federation through the CTR Program supports U.S. non-proliferation and strategic interests.

Moreover, cooperation with the Russian Federation funded through the CTR Program has endured as a steady, open channel even during periods of instability in other aspects of the United States-Russia relationship.

We closely manage and oversee the manner in which funding for cooperative programming initiatives is handled. Care in this regard is a hallmark of the way we work, and we ensure accountability with all our partners.

The CTR Program considers each Russian request independently; not all requests for support are granted.

Mr. TURNER. Discuss some of the challenges that you are working through on how you would implement the New START force structure reductions. When will the Department make its final decisions on its post-New START force composition and when will Congress see the specific implementation schedule and estimated funding requirements?

General CHAMBERS. Providing a specific implementation schedule, along with an accurate cost estimate, is not feasible until a force structure has been established. The Air Force is currently working with the Joint Staff to evaluate potential force structure options. The Air Force remains confident we will be able to meet New START central limits requirements before the 5 Feb 2018 deadline.

Mr. TURNER. Discuss some of the challenges that you are working through on how you would implement the New START force structure reductions. When will the Department make its final decisions on its post-New START force composition and when will Congress see the specific implementation schedule and estimated funding requirements?

Admiral BENEDICT. The Secretary of Defense, based on recommendations from the Joint Chiefs of Staff, established a baseline force structure which is outlined in the updated 1251 Report. While final force structure decisions do not impact Navy force structure, the DoD continues to study the final force structure under New START and will announce the end state force structure at the appropriate time.

To implement New START force structure reductions, the Navy will reduce the overall number of deployed SLBM warheads. This activity will be accomplished over the 7-year reduction window allowed by the Treaty, and to the maximum extent possible, will be accomplished as part of normal missile processing operations in order to minimize operational fleet impacts, as well as reduce the cost associated with Treaty implementation.

The Navy also plans to convert four SLBM launchers on each of its existing SSBNs such that these converted launchers will no longer be capable of launching an SLBM, resulting in a force of 14 SSBNS each with 20 SLBM launchers. This effort will require design and procurement of a new launcher closure. Additionally, the Navy must procure ballasts for each of the converted launcher tubes to ensure proper stability and operation of the submarine.

These activities are a multi-year design and procurement effort. Successful completion of conversions of these launchers and subsequent removal from Treaty accountability requires careful management and synchronization of all planned maintenance efforts with the SSBN force during the conversion period. SSP has identified the funding required to perform New START Treaty implementation activities in the 1251 Report and is working within the Navy resourcing process to request resources.

QUESTIONS SUBMITTED BY MS. SANCHEZ

Ms. SANCHEZ. What has been the impact of operating below the FY10 appropriations levels for until April 2011 and the delayed and reduced FY11 appropriations (reduction in $300 million below the FY11 budget request), on progress to urgently secure or remove vulnerable nuclear weapons-materials. One impact has been NNSA's inability to remove all highly-enriched uranium from Belarus as promised by 2012.

Are you concerned about these reductions and how has this impacted our efforts to secure nuclear materials? How has this impacted your other non-proliferation programs, since a lot of the funding has been reprioritized to cover GTRI efforts? How will funding be allocated in FY11?

Secretary D'AGOSTINO. During the Continuing Resolution, NNSA allocated its reduced FY 2011 budget authority to the highest priorities. NNSA ensured that programs supporting the President's commitment to secure the most vulnerable nuclear materials around the world in four years were funded to the greatest extent possible. In accordance with the agreements reached by the President at the April 2010 Nuclear Security Summit and the December 2010 Joint Statement with Belarus, NNSA has allocated funding to complete highly enriched uranium (HEU) removals/downblending from Ukraine, Belarus, Serbia, Kazakhstan, and South Africa in FY 2011 and has fully funded efforts needed in FY 2011 to remove all remaining HEU from Ukraine, Mexico and Belarus by April 2012 despite the lower than expected FY 2011 budget. However, the Global Threat Reduction Initiative (GTRI) postponed long-lead procurement and preparation activities for HEU removals from Vietnam and Hungary due to NNSA's prioritization of other nonproliferation activities under the lower than requested funding levels, which will delay these shipments from 2012 to 2013, assuming full and on-time arrival of FY 2012 requested funding.

Additionally, GTRI efforts related to research reactor conversion and radiological material security have been significantly reduced in FY 2011, and may be reduced in FY 2012 and FY 2013 in order to accommodate accelerated nuclear material lockdown efforts. Reductions include fewer HEU reactors converted to LEU in FY 2011 and FY 2012 than planned, an approximately two-year delay in creating domestic non-HEU based Mo-99 supply, an approximately two-year delay in development of a new LEU high density fuel to convert high performance research reactors, and fewer radiological recoveries and security upgrades both domestically and internationally.

Ms. SANCHEZ. Please give us more details on how the NNSA contributes and improves verification. What are the challenges that remain? What is the constraint on making faster progress?

Secretary D'AGOSTINO. NNSA develops technologies and methodologies, negotiates measures, and implements agreements to verify information and compliance with a range of arms control and nonproliferation initiatives. Examples include:

- Highly Enriched Uranium (HEU) Purchase Agreement: NNSA implements the monitoring provisions of the 1993 HEU Purchase Agreement, under which 500 Metric Tons (MT) of Russian weapons-origin HEU is converted to low enriched uranium (LEU) in Russia and then shipped to the United States where it is fabricated into nuclear fuel and produces electricity for U.S. consumers. NNSA uses a variety of monitoring approaches to ensure that the HEU provided by the Russians is in fact weapons-origin material. These approaches include: 24 annual on-the-ground special monitoring visits to the four Russian nuclear materials production sites under the Agreement; the right to use U.S. monitoring technology and equipment inside the four Russian nuclear material production facilities; and the receipt and analysis of Russian nuclear material processing and accountability documents. This three-pronged approach provides high confidence that the Russians are meeting their commitments under the Agreement.
- New START: NNSA provided policy and technical support to the interagency deliberation process, and NNSA representatives were responsible for negotiating specific portions of the Treaty. NNSA supported the achievement of U.S. arms control objectives while at the same time ensuring the safety, security, and effectiveness of the U.S. nuclear weapons stockpile. For the purpose of implementing the Treaty, NNSA is leading efforts to develop and use radiation detection equipment for inspections to confirm that objects declared to be non-nuclear are non-nuclear. In support of follow-on arms limitation treaties, NNSA is developing technology for counting deployed and stored weapons, ascribing a weapon to a particular class of treaty controlled items, verifying chain-of-custody of a nuclear weapon from production to dismantlement, and enabling transparent and verifiable dismantlement of a nuclear weapon and disposition of its nuclear material.
- Comprehensive Nuclear-Test-Ban Treaty (CTBT): NNSA supports the U.S. interagency and the CTBT Organization's Provisional Technical Secretariat in Vienna, Austria, to improve the effectiveness of all parts of the CTBT and nuclear testing detection verification regime. The NNSA provides technical solutions for the development of U.S. verification/monitoring capabilities that could be used to support CTBT verification/monitoring and provide technical support for implementation of the CTBT. This is accomplished though the sharing of expertise gained on procedures and technology developed by the United States during its long experience of nuclear testing and nuclear explosion monitoring. This capability development focuses on reducing detection thresholds through research and demonstrations related to source physics, propagation, sensors, and analytical methods.

Verification challenges that persist involve both scientific and programmatic issues.

- On the scientific front, confirming the presence or absence of HEU components in a manner that does not reveal sensitive weapons information remains a significant challenge. Unlike plutonium components, HEU does not emit signatures that are readily detectable absent interrogation using a neutron source. Interrogation with a source, however, complicates the measurement in terms of safety considerations as well as the range of information that may be revealed as a result of the interrogation and detected response. Verifying the presence of high explosives as an attribute of a warhead poses similar technical challenges. Additional resources to apply to these types of scientific challenges can help, but to an extent they will remain constrained by physics.
- On the programmatic side, issues requiring further investigation include balancing the level of access and information the United States is likely to require from another country in a future verification regime against the level of access and information the United States may be willing to provide. This involves managing access to sensitive sites in a manner that supports verification without compromising sensitive activities at the site or significantly impacting ongoing operations and schedules. One way to address this is to build transparency and verification into new facilities, but this is not a simple process and requires a good understanding of potential future verification requirements and designs that would support such requirements. Further, such measures could create additional resource requirements in the design and construction phases. Resources can also be applied after specific requirements are identified, for example, to build a dedicated facility to support monitored storage of items or verification of specific operations. However, building a dedicated facility after monitoring and verification requirements are specified is likely to cost much more than building capability into a facility that is already being designed to meet existing

operational requirements. Further, such an approach simply may take too long to be effective.

Ms. SANCHEZ. What can be done to increase the rate of dismantlements? What is the limiting factor?

Secretary D'AGOSTINO. The dismantlement rate has been defined through an NNSA commitment to Congress to eliminate by FY 2022 the retired warheads that existed at the end of FY 2009. The dismantlement plan outlined in the FY 2012 Stockpile Stewardship and Management Plan (SSMP) supports this FY 2022 goal, and the President's Budget Request fully funds this dismantlement plan.

There are several limiting factors associated with increasing the rate of dismantlements including safety considerations; facility capacity; competing program commitments such as alterations, life extension programs, limited life component exchanges, and surveillance; weapon complexity; the storage of the warheads and associated components from the dismantlement operations; and secure transportation.

Efforts within Defense Programs for dismantlement activities are interlinked; in order to achieve increased dismantlements NNSA would need additional support not only for Weapons Dismantlement and Disposition, but also for the Office of Secure Transportation, Production Support and Readiness in Technical Base and Facilities (RTBF). Dismantlement funding enables this increase shifts, the Office of Secure Transportation funds the addition weapons movements, Production Support accommodates the additional production & engineering management, tooling provisioning, material procurement, receiving inspection, and product transportation, while RTBF provides for additional facility operations cost, equipment maintenance costs, additional container costs, storage capacities, and disposition waste stream levels.

Ms. SANCHEZ. What improvements have been made on surveillance and how does the FY12 budget request support this?

Secretary D'AGOSTINO. Surveillance activities are essential to enabling continued certification of the reliability of the stockpile without nuclear testing. Surveillance involves withdrawing weapons from deployment and subjecting them to laboratory tests, as well as joint flight tests with the DoD to assess their reliability. These activities allow detection of possible manufacturing and design defects as well as material degradation over time. The NNSA continues to implement a surveillance program that builds on those core activities, which allows us to support the current state of the stockpile, detect in advance potential problems, and take remedial actions.

The NNSA has reviewed the stockpile surveillance program and its funding profile. When adjusted for inflation, FY 2005 through FY 2009, funding for surveillance activities fell by 27 percent. Beginning in FY 2010, the surveillance budget was increased by 50 percent, from $158 million to $239 million. In the FY 2012 budget request, the President seeks to sustain this increase and a more robust surveillance program throughout the Future Years Nuclear Security Program (FYNSP).

With increased funding many improvements have been made on surveillance. The NNSA increased the number of planned laboratory and flight tests from 48 in FY 2010 to 74 in FY 2011. The total number of planned major surveillance activities (including pit, canned subassembly, gas transfer systems, detonator cable assembly tests and disassembly and inspection) also increased from 276 in FY 2010 to 432 in FY 2011. In addition, surveillance activities supported the development of diagnostic capabilities at Y–12 for critical components of the nuclear explosive package. These capabilities will aid the current W76–1 production and surveillance of other warheads in the stockpile. This increased testing rate and improved diagnostics continue to be supported in the FY 2012 budget request. Furthermore, NNSA has taken action to hire a Surveillance Senior Advisor to assure a cohesive program, to enable a cost effective program, and to integrate surveillance activities across the nuclear weapons enterprise.

Ms. SANCHEZ. What measures are you taking now to ensure that CMRR and UPF do not exceed cost and schedule projections?

Secretary D'AGOSTINO. Construction of large, one-of-a-kind facilities such as CMRR and UPF presents significant challenges. Several reviews by the GAO have found that initiating construction before designs are complete contributes to increased cost and schedule delays. In response to these review findings, and in order to assure the best value for the taxpayer, NNSA has concluded that reaching the 90 percent engineering design stage before establishing a project baseline for these facilities is critical to the successful pursuit of these capabilities.

Responsible stewardship of taxpayer dollars necessitates close examination of requirements of all types and understanding of their associated costs, so that NNSA and DoD can make informed decisions about these facilities. To this end, DoD, in cooperation with NNSA, is carrying out an independent review of the safety, secu-

rity, environmental and programmatic requirements that drive the cost of these facilities. In parallel with, and in support of this effort, a separate independent review for UPF is being conducted by the Army Corps of Engineers. In addition, the Secretary of Energy, with support from independent senior experts, is evaluating program requirements.

The overriding focus of this work is to ensure that UPF and CMRR are built to achieve needed capabilities without incurring cost overruns or scheduling delays. We expect that construction project cost baselines for each project will be established in FY 2013, after 90 percent of the design work is completed. The CMRR and UPF will be planned in a few critical phases that will enable NNSA to set and track performance baselines for these subprojects or "chunks" of clearly defined work scope to enhance transparency and project execution.

Ms. SANCHEZ. What measures are you taking now to ensure that CMRR and UPF do not exceed cost and schedule projections?

Dr. WINOKUR. Although the Department of Energy (DOE) is responsible for the design and construction of defense nuclear facilities required to carry out its mission, the Defense Nuclear Facilities Safety Board's (Board) enabling statute (42 U.S.C. 2286 et seq) contains specific provisions regarding the Board's responsibilities with respect to DOE design and construction projects. These responsibilities apply to all defense nuclear design and construction projects, including the Chemistry and Metallurgy Research Replacement (CMRR) Project and the Uranium Processing Facility (UPF).

- REVIEW OF FACILITY DESIGN AND CONSTRUCTION. The Board shall review the design of a new Department of Energy defense nuclear facility before construction of such facility begins and shall recommend to the Secretary, within a reasonable time, such modifications of the design as the Board considers necessary to ensure adequate protection of public health and safety. During the construction of any such facility, the Board shall periodically review and monitor the construction and shall submit to the Secretary, within a reasonable time, such recommendations relating to the construction of that facility as the Board considers necessary to ensure adequate protection of public health and safety. An action of the Board, or a failure to act, under this paragraph may not delay or prevent the Secretary of Energy from carrying out the construction of such a facility. [42 U.S.C. 2286a(a)(4)]

Of note, the Board has spent considerable effort on reviewing (and encouraging DOE to review) the design of planned major facilities such as UPF and CMRR for safety-related concerns as early as possible in the design process. This approach results in a high degree of safety being engineered into the facilities' structures, systems, and components, and helps avoid unplanned costs associated with retrofitting or redesigning facilities to address safety issues recognized belatedly.

Directly related to this responsibility, in July 2007 a report was prepared jointly by the Board and DOE, as requested in the Conference Report of the John Warner National Defense Authorization Act for Fiscal Year 2007. The applicable portion of the Conference Report is as follows:

- The conferees note their concern regarding the untimely resolution by the Department of Energy of technical issues raised by the Board. The conferees believe that the Board and the Department would benefit from a more structured process for issue resolution that would allow issues to be raised, evaluated, and adjudicated at logical points in the design and construction process. The conferees urge the Board to evaluate whether more frequent use of the Board's formal recommendation process would drive both parties towards this more structured process. The conferees also encourage the Board to take a constructive role in the problem-solving process by quickly evaluating corrective actions proposed by the Department and its contractors.
- The conferees are encouraged by efforts between the Department and the Board to develop a process to provide for more timely identification and resolution of technical differences over design standards amid other issues at the Department's nuclear facilities. Specifically, conferees support the pending revision of the Department's Order 413.3 to require critical safety determinations be made prior to Critical Decision 1 in the Department's project management system. The conferees direct the Board and the Department to continue these discussions and to report jointly to the congressional defense committees on their efforts to improve the timeliness of issue resolution, including recommendations, if any, for legislation that would strengthen and improve technical oversight of the Department's nuclear design and operational activities. Until such time as this report is submitted, the conferees further direct the Board to provide to the congressional defense committees quarterly reports to identify and report the

status of significant unresolved issues. [H.R. Rep. No. 109–702, at 976 (2006) (Conf. Rep.)]

The report, prepared jointly by the Board and DOE, describes actions that provided for more timely identification and resolution of technical issues raised by the Board. Broadly, the actions promoted (1) the early identification of safety requirements and strategies at the conceptual and preliminary design phases of a project to avoid cost increases and schedule delays, and (2) more effective processes or protocols for the communication to DOE of issues identified by the Board and for the tracking and management of these issues. These concerns had arisen primarily as a result of significant cost increases and schedule delays due to the untimely resolution of technical safety issues during the design of the Waste Treatment and Immobilization Plant (WTP) at the Hanford Site. The significant actions include the following:

- DOE Order 413.3, *Program and Project Management for the Acquisition of Capital Assets*, was revised to incorporate elements that help ensure the early integration of safety into the design process. The following are examples of significant changes:
  - Safety requirements for each critical decision have been identified.
  - Safety design reports are required at the conceptual and preliminary design stages.
  - A Technical Independent Project Review, which focuses on safety documentation, is required as part of the Critical Decision-1 review for high-risk, high-hazard, and Hazard Category 1, 2, and 3 nuclear facilities.
  - The Integrated Project Team membership now includes technical safety experts.
  - Safety responsibilities during the design process are now defined for DOE's Central Technical Authorities, Chief of Defense Nuclear Safety, and Chief of Nuclear Safety.
- DOE Manual 413.3–1, *Project Management for the Acquisition of Capital Assets,* was revised and converted to a series of guides to clarify the requirements of the associated DOE Order and to make clearer reference to safety standards and requirements.
- A new standard, DOE–STD–1189, *Integration of Safety into the Design Process,* was developed to provide a detailed description of the safety-related design information required to meet the requirements of DOE Order 413.3 for integrating safety early into the design. Significant elements of this new standard included the following:
  - The development of a Safety Design Strategy that provides a roadmap for addressing important safety issues as the project progresses.
  - The development, in the conceptual design stage, of facility-level design basis accidents to provide the necessary input for the classification of important safety functions and systems.
  - The guidance for the preparation of a Conceptual Safety Design Report, a Preliminary Safety Design Report, and the Preliminary Documented Safety Analysis.
- DOE and the Board are jointly evaluating the effectiveness of DOE Order 413.3 and DOE–STD–1189 by demonstrating their application to two ongoing defense nuclear facility design efforts: the Integrated Waste Treatment Unit at the Idaho National Laboratory and the UPF at the Y–12 Nuclear Security Complex. These demonstration efforts are providing feedback on the effectiveness of actions taken to improve the early integration of safety into design.
- DOE and the Board have reaffirmed the importance of the Board's ready access to information as described in the Board's legislation: "The Secretary of Energy shall fully cooperate with the Board and provide the Board with ready access to such facilities, personnel, and information as the Board considers necessary to carry out its responsibilities...." [42 U.S.C. 2286.c(a)]
- The Board continues to provide Congress with periodic reports on the status of significant unresolved issues with DOE design and construction projects.
- The Board continues to issue "project letters" early in the design process to apprise DOE of the status of safety issues raised by the Board. These project letters are updated by the Board as the project situation requires.
- DOE and the Board are conducting joint periodic discussions to review the status of significant unresolved safety issues and to allow the Board to evaluate actions being taken to resolve these issues. DOE and the Board use these joint

periodic reviews as a mechanism to maintain senior management awareness of the status of these unresolved issues.

Specific to the CMRR design and construction project (but not UPF), on September 4, 2007, the Board submitted to Congress its certification report on the design of CMRR. This report was mandated by Congress in Section 3112 of the *Duncan Hunter National Defense Authorization Act for Fiscal Year 2009* [Public Law 110–417]. Section 3112 directed the Board to submit a certification to the congressional defense committees that concerns raised by the Board regarding design of CMRR safety-class systems (including ventilation systems) and seismic issues had been resolved. Section 3112 also required that the National Nuclear Security Administration (NNSA) perform a parallel CMRR certification review to certify that the Board's concerns had been resolved. At that time, the CMRR Project was at the end of the preliminary design stage. NNSA has continued to develop the CMRR Documented Safety Analysis and the design of safety-related structures, systems, and components as the project prepares for and proceeds to final design.

The Board worked closely with NNSA throughout the CMRR certification review process to identify the Board's concerns and the actions necessary to resolve them. As part of this process NNSA revised or agreed to revise the CMRR preliminary design, design requirements, and design processes to address these concerns as more fully described in the certification report. NNSA also committed to implement detailed designs during final design consistent with the specific design requirements agreed to as part of the certification process.

The Board's certification relies upon the future full implementation of these final design commitments by NNSA. The Board continues to review the design progression for implementation by NNSA consistent with these commitments. The Board will reopen issues if commitments, as described in the certification report, are not properly met during final design.

Ms. SANCHEZ. What has been the impact of operating below the FY10 appropriations levels for until April 2011 and the delayed and reduced FY11 appropriations (reduction in $300 million below the FY11 budget request), on progress to urgently secure or remove vulnerable nuclear weapons-materials. One impact has been NNSA's inability to remove all highly-enriched uranium from Belarus as promised by 2012.

Are you concerned about these reductions and how has this impacted our efforts to secure nuclear materials? How has this impacted your other non-proliferation programs, since a lot of the funding has been reprioritized to cover GTRI efforts? How will funding be allocated in FY11?

Ms. HARRINGTON. During the Continuing Resolution, NNSA allocated its reduced FY 2011 budget authority to the highest priorities. NNSA ensured that programs supporting the President's commitment to secure the most vulnerable nuclear materials around the world in four years were funded to the greatest extent possible. In accordance with the agreements reached by the President at the April 2010 Nuclear Security Summit and the December 2010 Joint Statement with Belarus, NNSA has allocated funding to complete highly enriched uranium (HEU) removals/downblending from Ukraine, Belarus, Serbia, Kazakhstan, and South Africa in FY2011 and has fully funded efforts needed in FY 2011 to remove all remaining HEU from Ukraine, Mexico and Belarus by April 2012 despite the lower than expected FY 2011 budget. However, the Global Threat Reduction Initiative (GTRI) postponed long-lead procurement and preparation activities for HEU removals from Vietnam and Hungary due to lack of funding, which will delay these shipments from 2012 to 2013, assuming full and on-time arrival of FY 2012 requested funding.

Additionally, GTRI efforts related to research reactor conversion and radiological material security have been significantly reduced in FY 2011, and may be reduced in FY 2012 and FY 2013 in order to accommodate accelerated nuclear material lockdown efforts. Reductions include fewer HEU reactors converted to LEU in FY 2011 and FY 2012 than planned, an approximately two-year delay in creating domestic non-HEU based Mo-99 supply, an approximately two-year delay in development of a new LEU high density fuel to convert high performance research reactors, and fewer radiological recoveries and security upgrades both domestically and internationally.

Ms. SANCHEZ. DOD in its budget request roll-out documents listed the proliferation of weapons of mass destruction (WMD) as one of the top strategic challenges to US national security.

a) How does DOD support nuclear non-proliferation efforts and please detail what progress has been made on interagency coordination and what challenges remain?

b) DOD plans to transfer funds to NNSA to support weapons activities in FY13 through FY16. Will DOD have a say on where its money is spent?

Secretary WEBER. (a) DoD actively supports interagency and international efforts to enhance U.S. leadership in global non-proliferation activities. The Administration's efforts to strengthen the global non-proliferation regime through the Non-proliferation Treaty (NPT), Comprehensive Test Ban Treaty (CTBT), and Fissile Material Cutoff Treaty (FMCT) are instrumental to raising barriers to WMD proliferation.

We continue to participate actively with the Department of State and other interagency colleagues to implement the Action Plan adopted by the May 2010 NPT Review Conference.

In addition, the United States' "negative security assurance" set forth in DoD's 2010 Report of the Nuclear Posture Review is clear: "The U.S. will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the Nuclear Non-Proliferation Treaty and in compliance with their nuclear non-proliferation obligations." This assurance underscores the security benefits of adhering to, and complying fully with, the Non-Proliferation Treaty. With regard to the CTBT, DoD will remain fully engaged in development of the Treaty's verification regime. At the same time, we remain committed to maintaining a safe, secure, and effective nuclear deterrent for our security and that of our allies. Finally, DoD continues to support FMCT-related discussions among technical experts in the UN Conference on Disarmament FMCT. These discussions are not a substitute for actual negotiations, but hopefully they will foster greater appreciation of key technical issues.

Our nonproliferation activities are not limited to these formal regimes. The United States recognizes the importance of multilateral activities and mechanisms that help to prevent proliferation, such as the Proliferation Security Initiative (PSI) and the Nuclear Security Summit. DoD is working with interagency partners to focus our PSI efforts on promoting key interdiction capabilities, identifying resources to support these capabilities, and designing strategies to engage nations proactively in the capacity-building process. The momentum and specific non-proliferation accomplishments generated by the Nuclear Security Summit were impressive, and DoD will support follow-on actions in preparation for the next Nuclear Security Summit in Spring 2012.

DoD also supports nuclear non-proliferation efforts by conducting and enabling on-site inspections in implementation of arms control treaties such as New START Treaty, and through the development of technology to support these inspections.

In a related fashion, collaborative training interaction (e.g., the International Counter-Proliferation program) with other countries in concert with other U.S. Government (USG) agencies encourages important border security improvements in the overall international capacity to identify and interdict WMD materials before they become a real threat.

The Cooperative Threat Reduction (CTR) Program serves as a critical DoD contribution to the overall USG non-proliferation framework. Under the CTR Program, DoD contributes, in cooperation with other U.S. Government entities and international partners, to the implementation of the President's global nuclear lockdown initiative to eliminate, remove, and secure vulnerable nuclear materials.

Interagency coordination on all of these activities has been effectively led by the National Security Staff (NSS) through the Interagency Policy Committee structure. At the working level, DoD coordinates on a daily basis with the National Nuclear Security Administration (NNSA), the Department of Homeland Security Domestic Nuclear Detection Office, the Department of State, and the intelligence community.

DoD has strengthened its collaboration at the senior level with NNSA by holding quarterly, Assistant Secretary-level bridge meetings and by institutionalizing several working groups to develop new joint projects to support nuclear nonproliferation. DoD also cooperates closely with counterparts in NSS, NNSA, and Department of State to support preparations for the 2012 Nuclear Security Summit.

(b) DoD plans to transfer $2.2B from FY13–16 to support NNSA's nuclear weapons activities. Funds will be allocated annually to NNSA for program activities endorsed by the DoD-led Nuclear Weapons Council. These funds are in addition to the $5.7B DoD transfer to NNSA for nuclear weapons and naval reactor programs and demonstrate the commitment of the Administration to fund fully the investments needed to sustain a safe, secure, and effective nuclear arsenal for the long term.

The NWC will continue its current role of reviewing nuclear weapons requirements for DoD, and will be increasingly active in assisting NNSA in its efforts to constrain costs. NNSA budget requests to Congress will be adjusted as necessary—up or down—based on the best information available at the time.

Ms. SANCHEZ. What is the Defense Threat Reduction Agency (DTRA) doing to support verification and detection improvements that will support further nuclear

weapons reductions and the Comprehensive test Ban Treaty? What are the challenges that remain?

Secretary WEBER. Until the Comprehensive Nuclear Test-Ban Treaty (CTBT) enters into force, DTRA's role is focused on developing CTBT-related detection and verification technologies, establishing on-site inspection procedures, and testing and preparing for potential inspections in the United States through various tabletop and planning exercises.

DTRA is a member of the DoD Nuclear Test-Ban Implementation Working Group and supports the Interagency Verification and Monitoring Task Force (VMTF) and Backstopping Group. DTRA serves as the co-chair of the VMTF's On-Site Inspection Subgroup and as a member of the Radionuclide Subgroup.

DTRA is developing technology to improve our ability to detect evasive and low-yield nuclear testing in support of the CTBT, and to support warhead counting and identification for future arms reduction agreements that may include non-strategic weapons. DTRA's technology development program emphasizes the improvement of DoD capabilities to conduct on-site inspections for a variety of treaties.

Remaining technology challenges include improving our ability to detect evasive underground nuclear weapon testing and our ability to characterize and identify nuclear warheads without revealing sensitive information. Another key challenge is improving our ability to detect on-site or remote signatures associated with the production of special nuclear materials.

Ms. SANCHEZ. With the Advanced Systems and Concepts Office (ASCO) being eliminated due to efficiencies, who will implements the important function of long-term thinking on non-proliferation and arms control in DOD/DTRA? How will this function be affected by this organizational change?

Secretary WEBER. With the closure of the Advanced Systems and Concepts Office (ASCO), the Strategy and Plans (SP) Enterprise in DTRA, which previously managed ASCO, will continue to manage and sustain the function of long-term thinking on non-proliferation and arms control.

While reducing overhead costs by eliminating the old organizational structure of ASCO, DTRA is improving management efficiency to implement most of the functions that ASCO previously performed, and those functions will still be accomplished within DTRA.

Ms. SANCHEZ. Could you outline what force structure shifts you are considering to implement New START? Will these changes enable us to meet requirements into the future, and be flexible to allow further reductions later?

General CHAMBERS. Per Section 1251 of the 2011 National Defense Authorization Act, to meet the New START central limits, the Administration plans to convert or eliminate some ICBM launchers, SLBM launchers and nuclear-capable heavy bombers. Air Force planning efforts are focused on complying with the limits dictated in the Section 1251 report of up to 420 ICBMs and up to 60 nuclear capable bombers. The procedures established in New START allow for simpler and less expensive conversion and elimination than provided for in the previous START. These new procedures are expected to enable DoD to meet national security requirements and implement future conversions and eliminations more expeditiously and at lower cost.

Ms. SANCHEZ. According to budget documents, the Air Force has been provided with over $10 billion (when adjusted for inflation) since FY 1997 to refurbish the Minuteman III ICBM. Can you talk about the upgrades that have already been made and upgrades that are planned to extend the life of the Minuteman III to 2030?

General CHAMBERS. Since FY97 required system updates and life extension programs were executed to the MM III weapon system based on results from aging surveillance and other assessment programs. In 2002, based on decisions stemming from a Nuclear Posture Review, Air Force life requirements for MMIII were extended to require sustainment of a 500 missile force through FY20. To meet this requirement various upgrades and Life Extension Programs (LEPs) were conducted to cover multiple aspects of the MM III weapon system and involved numerous tests, calibration, flight testing and other related support equipment upgrades. Significant upgrades to the MM III included a complete Propulsion Replacement, a Guidance upgrade/replacement and an ICBM Cryptography Upgrade (Phase I and Phase II).

In 2007, the National Defense Authorization Act directed the sustainment of a 450 MMIII missile force at "operational specification" through FY30. To meet this new requirement the Air Force plans on continued LEPs to extend MM III life through 2030. Some significant aspects of the MM III to be upgraded in future programs include an ICBM Fuze Modernization program, a Solid Rocket Motor Modernization program and a Guidance Life Extension Program. The Air Force will con-

tinue refurbishments where modern components replace obsolete parts and conduct upgrades to the MM III as aging, surveillance and other assessment programs identify a need to do so.

Ms. SANCHEZ. Could you outline what force structure shifts you are considering to implement New START? Will these changes enable us to meet requirements into the future, and be flexible to allow further reductions later?

Admiral BENEDICT. As outlined in the updated 1251 Report, the Navy will convert four SLBM launchers on each of its existing 14 SSBNs, thereby stabilizing the number of SSBNs to be maintained and facilitating Navy planning for the OHIO Class submarine replacement. By maintaining all 14 OHIO Class SSBNs, each with 20 SLBM launchers, the Navy continues to meet current and future requirements while simultaneously being flexible to allow for further reductions. The Navy is ensuring plans for the OHIO Replacement submarine are informed by new START as OHIO Class SSBNs begin to retire in 2027.

Consistent with the guidance in the Nuclear Posture Review, the resultant force structure will retain the ability to "upload" some nuclear warheads as a technical hedge against future problems with U.S. delivery systems or warheads, or as a result of a fundamental deterioration of the security environment. If further reductions are desired, either additional reductions of warheads on the deployed missiles or conversion of more launchers on each of the existing 14 SSBNs are possible. These decisions will be made external to the Navy, but Navy implementation plans provide considerable flexibility to the decision makers and do allow for a wide range of options if future force changes are needed.

Ms. SANCHEZ. What are your concerns about the solid rocket industrial base and what is the plan moving forward as DOD will bear higher costs to sustain a lower production rate?

Admiral BENEDICT. The Navy is concerned that the decline of the Solid Rocket Motor industry has placed a heavy burden on Navy resources. The Navy is maintaining a continuous production capability at a minimum sustaining rate of twelve rocket motor sets per year through the Future Years Defense Plan (FYDP). However, SSP has faced significant cost challenges as both NASA and Air

Force demands have declined. Reduced industrial demand has resulted in overhead costs spread over a smaller customer base. The Navy's growing percentage of the Solid Rocket Motor business base has already resulted in increased unit costs. SSP will continue to experience those cost increases if demand shrinks further in coming years.

SSP is working with our industry partners, DoD, NASA, and Congress to sustain the Solid Rocket Motor industrial base, mitigate cost increases, and find ways to maintain successful partnerships. The OSD (Industrial Policy)-led Inter Agency Task Force, with membership from Navy, the Air Force, OSD, working with the Missile Defense Agency and NASA, developed a Solid Rocket Industrial Base Sustainment Plan. SSP has been an integral part of this process. Continued collaboration is necessary to find an inter-agency solution to maintain this crucial national capability.

Ms. SANCHEZ. According to the Navy, the SSBN(X) program "is inextricably linked to legacy SSBN retirements. The latest start for the lead SSBN(X) is FY 2019 and the replacements must start reaching the operational force by FY 2029. There is no leeway in this plan to allow a later start or any delay in the procurement plan."

a) Has there been any impact from the delay in FY11 appropriations on the Navy's plan to develop and procure the first SSBN(X) in FY 2019?

b) Are you concerned about any impacts in naval reactor development that might have resulted from the delayed appropriations?

Admiral BENEDICT. a) The OHIO Replacement (OR) FY 2011 request was $493 million. Due to the Continuing Resolution, only $237.8 million has been released to date. The Continuing Resolution has resulted in a delay in procuring of fixture manufacturing and long lead time material that supports Common Missile Compartment prototyping efforts.

The OHIO Replacement program was marked $51.6 million ($49.3 million Congressional reduction and $2.3 million for economic assumptions), for a revised FY 2011 control of $441.4 million. This $51.6 million FY 2011 reduction increases the technical risk to meet the established cost targets. It also impacts execution of the OR build strategy which requires design maturity to support a FY 2019 construction start. Due to the reduction in FY 2011 funding the program will be required to delay procurement of fixtures that facilitate Common Missile Compartment (CMC) component development, fabrication and integration. The program will also have to reduce manning levels which will adversely impact missile tube design completion, ship length decision, and ship specifications. The serial nature of some design prod-

ucts will result in a lower design maturity than goal at construction start with attendant increased construction cost and future potential delay in construction start.

The program will be required to request funding for restoration of this FY 2011 $49.3 million Congressional reduction in future budget requests.

b) The OHIO Replacement is being designed to have a life-of-ship core, which will reduce the SSBN force level by 2 ships. In addition to the delayed appropriations this year, in each of the last two years Naval Reactors' Department of Energy funding (which supports the life-of ship core) has been cut by the Appropriations Committee ($58 million in FY2010 and over $100 million in FY11). Some of this funding was for OHIO Replacement and therefore these cuts will impact the timely completion of Naval Reactors' development. Naval Reactors has stated that the current cuts to OHIO Replacement will result in delays of at least six months to the design and delivery of the reactor plant, and commensurate delays to the delivery of the lead ship.

Ms. SANCHEZ. Last month Deputy Defense Secretary William Lynn stated that the cost of the SSBN(X) program will be shouldered by diverting funds from other naval and Pentagon programs and perhaps by boosting the defense budget, but the program should not get its own special funding stream. However, some voices within the Navy have talked about treating the new submarine as a national strategic asset that is funded outside the Navy's budget as has been done with other programs, such as our missile defense program. Has a decision been made one way or another on this issue?

Admiral BENEDICT. As the Undersecretary of Defense for Acquisition, Technology, & Logistics (USD(AT&L)), Dr. Ashton Carter, testified before the House Appropriations Committee's Defense Subcommittee (HAC–D) on 13 April 2011, the position of the Office of the Secretary of Defense remains that the OHIO Replacement Program will be funded within the Navy's shipbuilding account.

QUESTIONS SUBMITTED BY MR. LARSEN

Mr. LARSEN. Dr. Triay, I understand that DOE conducted an independent review of the safety culture at the Hanford Waste Treatment Plant project. What were the results of that review and how would you describe the state of the safety culture on this project?

Secretary TRIAY. During August 2010 and September 2010, the Department's Office of Health, Safety and Security (HSS) conducted an independent review of the nuclear safety culture of the Waste Treatment Plant (WTP) project. The report, issued in October 2010, concluded that the framework for a strong safety culture has been established, and that overall, managers encourage employees to raise questions or concerns. The report also noted that,

"Most ORP personnel indicated their belief that the nuclear safety culture within ORP is strong and improving. Although a limited number of individuals had varying concerns, the majority of ORP personnel who were interviewed expressed positive views of the nuclear safety culture and current senior management."

"Although improvements are needed in some areas, BNI and its subcontractors have established the framework for a strong nuclear safety culture at WTP."

The report included the following six recommendations.

For the Office of River Protection (ORP):

1. Based on the outcome of the Federal Project Director's WTP Management Assessment Report, ORP should institutionalize the processes and formally define the roles and responsibilities and clarity interfaces between the WTP Federal organization and the other ORP organizations (e.g., Engineering and Nuclear Safety, Environmental Safety and Quality, and Tank Farm Project); and

For the WTP prime contractor, Bechtel National Inc. (BNI):

2. Perform a systematic assessment of the existing processes for identifying and resolving nuclear safety issues, with particular emphasis on root cause analysis of problems involving the initial identification of issues;

3. Establish a formal change management process that identifies the actions needed to ensure that safety programs are not degraded by changes in project status or priorities;

4. Identity mechanisms to strengthen trust among the workforce and better communicate information to employees;

5. Include actions and elements in the development and implementation of the NSQC Plan to ensure that it results in sustainable and continuous improvement in the nuclear safety and quality culture at the WTP; and

6. Examine all credible concerns to ensure that the nuclear safety culture does not degrade over time and to better determine the extent of the concerns.

In addressing the first recommendation, ORP has updated its Project Execution Plan to institutionalize processes, formally define roles and responsibilities, and clarify interfaces between the WTP Federal organization and the other ORP organizations. In December 2010, BNI responded to recommendations two through six above with an action plan and a forecast date to have all actions complete by September 30, 2011. The ORP Project Team reviewed the proposed responses and notified BNI that the improvements proposed were *"well aligned with the intent of the HSS recommendations"* and that in early FY 2012, ORP will conduct a review to verify their effectiveness.

The Department of Energy has a strong history and culture of safety in working with unique nuclear hazards and facilities. EM stands by its safety record and the nuclear safety culture of the Department including the Waste Treatment Plant project. The safety of our workers and the public is of fundamental importance to our projects.

Mr. LARSEN. Dr. Triay, can you please share the status of technical issues regarding the Waste Treatment Plant project? Are these issues considered to be open or closed? What remaining work needs to be done to address these issues?

Secretary TRIAY. The Waste Treatment Plant (WTP) project continues to make significant progress toward resolution of technical issues. Design and engineering of the WTP is now approximately 81 percent complete. In 2010, the Department of Energy (DOE) commissioned a review of the WTP to evaluate several aspects of the project, including a technical design review to address and provide advice on the following areas: 1) whether technical risks have been adequately addressed in the design, and 2) whether the design is sufficiently mature to allow proceeding with needed procurement and construction activities to meet WTP requirements. That review identified no additional specific technical issues beyond those already being addressed by the project. The three technical issues currently open are:

1) adequacy of pulse jet mixing technology in process vessels;
2) potential for a flammable gas event in piping in ancillary vessels; and,
3) selection of a value for a parameter that is used to determine radiological impacts to members of the public in an accident scenario (deposition velocity).

Final closure actions for these three technical issues are nearing completion. Further details are provided below.

Pulse Jet Mixing (PJM):

The DOE believes the remaining uncertainty regarding use of PJM technology at the WTP is being addressed by the approach presented during the October 7–8, 2010, Defense Nuclear Facilities Safety Board (DNFSB) public hearing on WTP, and in our supplement to the public hearing record submitted to the DNFSB in January 2011. In December 2010, the DNFSB issued a recommendation (DNFSB 2010–2) to the Secretary with specific sub-recommendations it believes need to be addressed during the conduct of our Large Scale Integrated Testing (LSIT) process. The Implementation Plan for addressing DNFSB 2010–2 is under development and is being communicated to DNFSB staff. The first increment of LSIT will test mixing system performance limits. The satisfactory completion of this increment will provide the assurance needed to complete fabrication and proceed with on-time installation of vessels in the Pretreatment Facility. Follow-on increments of the LSIT will focus on optimizing operational performance of WTP, and tank waste processing and feed delivery system performance. An Independent Review Team of national experts has been retained to review the technical parameters and decisions resulting from the LSIT process.

Hydrogen in Piping and Ancillary Vessels (HPAV):

In its April 15, 2010, periodic report to Congress, the DNFSB expressed concern "that many changes to the design of WTP are being approved by the DOE prior to the resolution of numerous outstanding technical issues." In an effort to resolve this concern, the DNFSB suggested a comprehensive, independent, expert-based review of the safety design strategy for control of hydrogen in pipes and ancillary vessels. This led to the formation of the HPAV Independent Review Team (IRT).

The IRT consisted of experts that evaluated the WTP approach for addressing HPAV events in three areas: 1) quantitative risk assessment to evaluate the potential frequency and magnitude of hydrogen events; 2) gas phenomena; and 3) structural. The HPAV IRT concluded that the design approach for HPAV piping and components is acceptable, provided that the project resolves the findings identified by

the team. The project is currently in the process of completing its efforts to address and close the HPAV IRT findings.

The Office of Environmental Management (EM) has high confidence that the HPAV design approach yields a superior design for WTP that not only complies with DOE safety policies but assures the operational reliability necessary for efficient achievement of the critical waste treatment mission to safely treat Hanford's radioactive liquid waste.

Deposition Velocity:

In May 2010 and again in July 2010, the DNFSB communicated its concerns to the Department regarding the WTP's selection of a value that is used in determining the radiological dose consequences to a member of the public in the event of an accident. In response to these concerns, the Department's Chief of Nuclear Safety prepared a technical analysis using recognized subject matter experts, recommending an appropriate value for this parameter, but suggesting that the WTP project could adopt a more conservative value as it deemed appropriate. Subsequently, DOE forwarded this recommendation to the WTP contractor requesting that it evaluate the analyses and make a recommendation back to DOE on selection of an appropriate value. The contractor is expected to complete its evaluation and make a recommendation for use of the value by the end of May 2011. The Department expects this value will be consistent with the DNFSB's recommended values.

QUESTIONS SUBMITTED BY MR. HEINRICH

Mr. HEINRICH. Mr. Administrator, I am concerned that the FY12 President's Budget Request does not include funding for the recapitalization of Sandia's MESA fabrication facility. Without funding, the fabrication facility may be at risk of becoming obsolete by industry standards and unable to fully support next generation microelectronics for stockpile systems.

Can you please speak to the importance of funding equipment and infrastructure recapitalization at MESA's fabrication facility in the current and upcoming budget cycles?

Can you also explain what plans the Administration has in place to do so?

Secretary D'AGOSTINO. The MESA fabrication facilities are comprised of a Microelectronics Development Laboratory (Silicon fabrication facility) built in 1986 and a recently completed Micro-fabrication facility which came on line in 2005. The MESA recapitalization addresses facility upgrades, equipment retooling, and the Silicon Fabrication Retooling (SSiFR), in the 1986 Silicon fabrication facility.

The NNSA will upgrade the Silicon fabrication facility by replacing high risk items such as the acid exhaust system and the chase ceiling tiles, both of which are original to this 25-year old facility. Additionally, the SSiFR effort is also necessary, and will enable production of the Application Specific Integrated Circuits (ASICs) that are needed to support the life extension needs of the B61, W78 and W88.

The current Life Extension Program (LEP) schedule shows all three LEPs running in parallel. In addition, the W78 and W88 LEPs will require prototyping of the strategically hardened ASICs and other components in parallel with B61 War Reserve production. As a result, heavy demands will be placed on the existing facilities thus necessitating their upgrade and equipment retooling.

Recapitalization is planned to be executed in distinct phases over four years, with emphasis on replacement of the highest risk tools as part of the SSiFR effort. Facility infrastructure and upgrades will proceed in parallel with SSiFR work. The phased execution would be implemented in such a way that the production capability of the facility would not be impacted during the prototype and War Reserve production.

A prioritized plan for the phased execution of SSiFR recapitalization will be completed in FY2011. The SSiFR effort will begin in FY2012, and is expected to cost $80M. The facility upgrades (a series of expense and general plant projects expected to cost $20M) will begin in 2013. NNSA expects to complete these upgrades by FY 2016.

Mr. HEINRICH. I was pleased to see $25M included in the FY12 President's Budget Request for the construction of the AF Nuclear Weapons Center Sustainment Center at Kirtland Air Force Base.

I understand this facility will allow our nation to track, monitor and provide "positive inventory control" for all Air Force Nuclear Weapons Related Material worldwide.

Can you please talk a little more about the value this facility will bring to our nuclear weapons enterprise?

General CHAMBERS. The Sustainment and Integration Center (STIC) will provide a single hub for tracking nuclear weapons and related material. The STIC will be manned 24 hours-a-day, 365 days-a-year to monitor and provide real-time information on the condition and location of nuclear weapons and Nuclear Weapons Related Materials, maintain communication with key DoD and DOE command centers, and to provide state-of-the-art capabilities in support of effective crisis management and corrective action responses, if required.

○