ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 2011

WEDNESDAY, MARCH 10, 2010

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:15 a.m., in room SD–116, Dirksen Senate Office Building, Hon. Byron L. Dorgan (chairman) presiding.

Present: Senators Dorgan, Feinstein, and Bennett.

DEPARTMENT OF ENERGY

NATIONAL NUCLEAR SECURITY ADMINISTRATION

STATEMENT OF HON. THOMAS P. D'AGOSTINO, ADMINISTRATOR

ACCOMPANIED BY:

ADMIRAL KIRKLAND H. DONALD, DEPUTY ADMINISTRATOR OF NUCLEAR REACTORS

STEVEN BLACK, CHIEF OPERATING OFFICER, OFFICE OF DEFENSE NUCLEAR NONPROLIFERATION

BRIGADIER GENERAL GARRETT HARENCAK, PRINCIPAL ASSISTANT DEPUTY ADMINISTRATOR FOR MILITARY APPLICATIONS

OPENING STATEMENT OF SENATOR BYRON L. DORGAN

Senator DORGAN. I'm going to call the hearing to order.

I was giving a speech just down the hall, and therefore, showed up early, and it was most uncomfortable, because I'm never anywhere early.

So, if it appeared to all of you I didn't know what to do, that's the reason.

Mr. D'Agostino, you appear to be in a good mood this morning, and I assume that's because your budget request, coming from the administration, suggests increased funding. There's always a relationship in the mood, and we're appreciative, very much, of your being here, and we congratulate you on your extension and continued work in these areas. The work of the National Nuclear Security Administration is very, very important.

This year's budget request of $11.2 billion for NNSA is up $1.3 billion, or 13.5 percent above the fiscal year 2010 appropriation. This would make it the largest increase to NNSA's budget since the agency was established, 10 years ago.

Over the past years, I've expressed some concern about the lack of funding to maintain the Nation's nuclear weapon stockpile and to achieve the nonproliferation goals, which I think are very impor-

tant. I'm pleased to see, in this budget request, a clear commitment in increasing NNSA's ability to assess the safety, security and reliability of nuclear weapons. Furthermore, I'm pleased that the NNSA plans to accelerate efforts to secure vulnerable nuclear material around the world, within the coming 4 years.

I have two main concerns, which I hope you will address today, and I'll ask some questions about them.

First, can the NNSA sustain new initiatives and construction projects of the size that we're talking about in the out years? Before we approve very expensive new initiatives, we need to be confident that NNSA has a clear strategy to manage very complex projects concurrently. Further, we need to know that NNSA has sound cost and schedule estimates.

What you're asking for in the fiscal year 2011 request is to ramp up the production of refurbished W76 warheads; begin life extensions for the B61 and W78; increase surveillance activities of retired nuclear weapons; build three major new nuclear facilities, that would each exceed $3 billion in cost; the Chemistry and Metallurgical Facility at Los Alamos, the Uranium Processing Facility at Y–12, and the Pit Disassembly and Conversion Facility at Savannah River; and expand naval reactor projects, such as designing a new reactor for the Ohio-class ballistic missile submarine.

What I've not seen, and what I want to see, is a plan or a strategy that shows how NNSA will be able to manage this many complex projects at once, and pay for them, in the coming years. We want cost and schedule estimates. Both the GAO and the IG and other independent reviewers have raised questions about NNSA, for cost and schedule estimates, in years past. We believe NNSA—and I know Mr. D'Agostino would agree—just needs to do better.

Despite sizable projected increases in funding, we are also concerned about whether there is an underestimating of budget needs. For example, out-year funding for the three major facilities does not reflect cost increases that could likely exist because of design changes or schedule delays. The second major concern is the rate of increase for the nonproliferation program, which is an increase of $550 million, or 26 percent, compared to fiscal year 2010. I'm not convinced that that amount of money will be able to be spent quite so quickly, effectively, or efficiently. So, we want to talk a little about that today.

I applaud the efforts to date—for example, through the nonproliferation program, 2,300 kilograms of highly enriched uranium and plutonium, enough material to make 90 nuclear weapons has been removed and disposed of from civilian nuclear sites worldwide. That's a good record. These efforts rely on the cooperation, however, of foreign countries that do not always share our nuclear security concerns. The NNSA needs to show that it has or will produce, or can produce, agreements with countries that justify such a large increase in material retrieval.

I think the NNSA also needs to demonstrate that Russia and other countries will continue to maintain the close to $3 billion in security upgrades that the United States has funded over 17 years as the United States withdraws financial support. As we have funded these facilities, in the order of safety, just building them and leaving does not necessarily give us the assurance that those

upgrades will last and will continue to be supported by the host countries.

Finally, NNSA needs to demonstrate that nonproliferation funds are being spent effectively and efficiently. They've installed radiation detection equipment at more than 350 borders, in dozens of countries, to prevent smuggling of nuclear materials. But, the GAO has found that the corruption of foreign border security officials, along with technical limitations of radiation detection equipment, inadequate maintenance of some equipment, and the lack of supporting infrastructure at some sites, has hindered the full effectiveness of these activities. Now, we know that the NNSA will address those issues so that we can understand the investment of these funds is leading to real and significant security improvements.

Again, Mr. D'Agostino, we appreciate your being here with your colleagues.

And let me call on Senator Bennett for any opening statements he may have.

OPENING STATEMENT OF SENATOR ROBERT F. BENNETT

Senator BENNETT. Well, thank you very much, Mr. Chairman.

And I welcome all of you here.

And, as I listen to the chairman, I find myself in agreement with him. I very much applaud your top-line budget request. You need the money; you've shown the courage of asking for it. And I think we'll do the very best we can to give it you. That's the good news.

The bad news is that the agency's track record in managing large construction projects is not encouraging. And the chairman has outlined that.

And just to underscore what Senator Dorgan has said, you're going to have four major projects underway at once: the Uranium Processing Facility; the CMRR Nuclear Facility, at Los Alamos; two projects at Savannah, the Pit Disassembly and Conversion Facility, and the MOX Fuel Facility. And, these, I understand, are the biggest construction projects NNSA has ever taken on. And then, while you're doing that you're talking about two life-extension programs being carried on simultaneously. And you have never conducted two LEPs at once. And those that you have conducted in the past—not necessarily you, specifically, but the agency—have been over-budget and over-schedule.

So, the money is needed, the repairs are needed, the updating is needed. Everybody agrees with that. But, one thing to say, "Okay, here's the money." It's another thing to say, "How's it going to be spent?" And we need to pin down a lot of items, schedules, who the contractors are going to be, what the track record is that—those who're going to be involved. And we obviously are very interested in your answers to those questions.

And then there's the question of how you spend the tremendous increase you're asking for in nonproliferation area. That's critical to the—ensure international nuclear safety. And with a requested increase of 68 percent for the Global Threat Reduction Initiative, and a past history of large unobligated balances, these are questions that we need to go into.

Now, the chairman has gone into all of these in detail, and I'm simply underscoring my support for his concern in these areas.

You're going to find a very unified subcommittee, both in support for the money and in support for the details that we need to look at.

Senator DORGAN. Senator Bennett, thank you very much.

Senator Feinstein.

PREPARED STATEMENT

Senator FEINSTEIN. I will put my statement in the record.

[The statement follows:]

PREPARED STATEMENT OF SENATOR DIANNE FEINSTEIN

Thank you, Mr. Chairman, and thank you Mr. D'Agostino for taking the time to see us today.

As you know, I have worked with colleagues in the House and Senate to stop the re-opening of the nuclear door and the development of new nuclear weapons.

Together, we have eliminated funding for the Advanced Concepts Initiative, the Robust Nuclear Earth Penetrator, the Modern Pit Facility and the Reliable Replacement Warhead program.

Now, we are working with a new president, one who believes in reclaiming a leadership role for the United States in nuclear non-proliferation issues and shares the vision of a nuclear free world.

In his April 5, 2009 Prague speech, President Obama called for "an end to cold war thinking" and declared that the United States will "reduce the role of nuclear weapons in our national security strategy." Before and after his inauguration, he pledged that he "will not authorize the development of new nuclear weapons."

I am hopeful he will use the upcoming Nuclear Posture Review to craft a new nuclear weapons policy that will help stop the spread of nuclear weapons and chart the course for their elimination from the Earth.

We are in the final stages with Russia on new agreement to make additional cuts to each nation's nuclear arsenal. This is welcome news and I look forward to the conclusions of those talks.

I also appreciate President Obama's support for ratification of the Comprehensive Test Ban Treaty, a critical component of any U.S. nuclear nonproliferation regime.

In his fiscal year 2011 budget for the National Nuclear Security Administration, the President has requested $11.2 billion, a 13.4 percent increase from fiscal year 2010.

This marks a substantial commitment to maintaining the safety and reliability of our nuclear weapons arsenal and the nuclear weapons complex.

We must ensure that these funds compliment, rather than detract from, the President vision on nuclear weapons policy and nuclear nonproliferation issues.

I stand ready to work with my colleagues and the administration to craft a sensible, bi-partisan nuclear weapons policy that will keep Americans safe and will reduce the danger of a nuclear war or a nuclear attack.

Senator FEINSTEIN. I have a number of questions, but let me just say this, Mr. Chairman. I want to thank you for your chairmanship of this subcommittee. I guess this is your final appropriations bill. And we've worked together on several items. I think you've brought about, really, sterling leadership, and very impressive—I will miss you. I believe the ranking member will miss you. And I know you will have bright horizons ahead of you, but you darken our skies by leaving.

Senator BENNETT. Yes, I want to associate myself with that. I was just getting settled into the pleasure of working with you, and now you're going to go off to greener pastures. So, we will do our best to carry on your tradition after you've gone, assuming, of course, that I get to stay, as well.

Senator DORGAN. Well, this year will end 30 years in the United States Congress. It's a great privilege, but there are other things I wish to do, and—but, enough of that. You're making me sound like Gabby Hayes, here.

Mr. D'Agostino, thank you for your leadership, thanks for the work you do. Why don't you proceed.

Your entire statement will be part of the permanent record so you may summarize.

STATEMENT OF HON. THOMAS P. D'AGOSTINO

Mr. D'AGOSTINO. Thank you, Mr. Chairman, Senator Bennett, Senator Feinstein.

It's a pleasure to be here. It's a real honor for us to have the opportunity to testify on the President's budget, particularly for the National Nuclear Security Administration.

As you note, I'm accompanied here by folks that have a lot of history and understanding of the program. Admiral Kirk Donald, for naval reactors; Steve Black, who's a chief operating officer in our nonproliferation program; and Brigadier General Gary Harencak, for defense programs.

So, Mr. Chairman, under your leadership, the subcommittee has been a proponent of our NNSA programs and initiatives, and I thank you for the support. The subcommittee's backing will become even more critical as we seek to move forward on programs to implement the President's nuclear security vision. And moving the program in the right direction for many years out in the future, of course, since these programs last many years, it has to be done in a way that makes sense, in a bipartisan sense, because it's important for national security.

Last year when I appeared before you, the focus of my testimony was the continuing of the transformation of this outdated cold war nuclear-weapons complex and moving it into a 21st century national security enterprise and our initial efforts on implementing, the President's announcement, securing the most vulnerable materials worldwide. Since that time, we've identified and defined portfolio programs to meet the President's emerging nuclear security agenda.

Our 2011 budget request, as you've noted, is $11.2 billion, a 13.4-percent increase from the prior year's appropriation. And in developing this program, Secretary Chu has worked—and I—have worked very closely with Secretary Gates to make sure that we had a program that was integrated across both departments. And, that reflects not just the nuclear weapons program itself, but the nonproliferation program and the naval reactors' activities.

Our request can be summarized, essentially, into four components. Collectively, we ensure that the President's overall nuclear security agenda, as outlined in his April 2009 Prague speech and reinforced during his State of the Union Address—first, our requests describe NNSA's crucial role in implementing this nuclear security vision and its call to secure vulnerable material worldwide within 4 years. The $2.7 billion request for nonproliferation programs includes key programs related to the President's agenda: nearly $560 million for the Global Threat Reduction Initiative to secure vulnerable material around the world; over $1 billion for a fissile material disposition program to permanently eliminate 68 metric tons of surplus weapons-grade plutonium and more than 200 metric tons of surplus highly-enriched uranium; and over $350 million for the nonproliferation verification research and develop-

ment programs; provide technology support to the President's arms control and nonproliferation agenda, including a new capability at our Nevada site to fully integrate treaty verification in arms control experiments.

The second component is our investment in the tools and capabilities required to effectively manage the stockpile itself. Based on preliminary analysis in the draft Nuclear Posture Review, we concluded that maintaining the safety, security, and effectiveness of the enduring nuclear deterrent requires increased investments to strengthen an aging physical infrastructure and sustain depleted technical human-capital base across our enterprise. Our request includes more than $7 billion to ensure that the capabilities are required to complete ongoing weapons life-extension activities; to strengthen the science and technology and engineering base; and reinvest in the scientists, technicians, and engineers who perform this mission.

These activities are very consistent with the NNSA's stockpile stewardship and management responsibilities, as outlined in the 2010 National Defense Authorization Act. Vice President Biden recently noted the need to invest in a modern sustainable infrastructure that supports the full range of NNSA's mission, not just stockpile stewardship. He said, "This investment is not only consistent with a nonproliferation agenda, it is essential to it."

And there is an emerging bipartisan consensus that now is the time to make these investments to provide the future foundation for our U.S. security. A key example of that consensus was reflected in the January Wall Street Journal article by Senator Sam Nunn and Secretaries George Shultz, Secretary Henry Kissinger, and Secretary William Perry.

That leads me to the third component of our investment in recapitalizing our nuclear infrastructure and deterrent capability into a 21st-century nuclear security enterprise. As the Vice President said last month, some of the facilities we use to handle uranium and plutonium date back to the days when the world's great powers were led by Truman, Churchill, and Stalin. The signs of age and decay are becoming more apparent every day.

Our request includes specific funds to continue the design of the Uranium Processing Facility at our Y–12 Facility and the construction of the Chemistry and Metallurgy Research Replacement Facility, at Los Alamos.

Our Navy's nuclear fleet includes all of our submarines and aircraft carriers spread over the globe to protect America's interests. The naval reactors budget shows a steady increase over the future year national security plan—our 5-year program, essentially. To meet the operational requirements of the Ohio-class replacement, we will need to provide a new reactor plan, using improved materials that we've not used before. This effort dovetails well into our need to refuel one of our land-based prototypes, which provides the platform to demonstrate the manufacturability of the Ohio replacement core and also to realistically test systems and components. Finally, this prototype serves a key role as an operating reactor plant for training our Navy sailors.

Mr. Chairman, investing now in a modern sustainable nuclear security enterprise is the right thing to do. Investment will support

a full range of nuclear security missions to ensure future security. The range of missions includes stockpile stewardship, nonproliferation and disarmament, arms control and treaty verification, counterterrorism and emergency response, nuclear forensic and naval nuclear propulsion. It's the whole gambit.

Finally, the fourth component, one that ties all our missions together, is our commitment to aggressive management reforms across the NNSA. And I look forward to questions on this. I can go into some detail. But, as you know, with increased resources comes an increased responsibility to be effective stewards of our taxpayers' money and to ensure that we effectively and efficiently manage this. We take this responsibility very seriously.

Take, for example, the costs associated with our physical security posture. As you are well aware, each year the costs of these efforts have risen. We initiated a zero-based security review to implement greater efficiencies and to drive down costs while sustaining, and sometimes even improving, our security capabilities. We recently concluded a review at our Nevada site and identified some potential savings. We will be reviewing other sites shortly.

Next, our supply chain management center has already saved taxpayers more than $130 million, largely through electronic sourcing and strategic sourcing, essentially tying our enterprise together; instead of having eight separate procurement centers, to try to focus these things together and leverage our purchases. That saved us significant resources.

And, as you may be aware, our Kansas City plant recently won a Malcolm Baldrige Award for manufacturing and quality, for their innovations and performance excellence. We're working to implement that Kansas City model of best business practices across the whole nuclear security enterprise.

And finally, we emphasize performance and financial accountability at all levels of our operation. In 2009, our programs met or exceeded 95 percent of their performance objectives, and over the past 2 years, NNSA has successfully executed large funding increases in several nonproliferation programs while reducing, at the same time, the percentage of carryover, uncosted, and uncommitted funds. We'll be glad to provide details of those, as well.

Importantly, for the subcommittee's consideration, we have the people and process in place to initiate immediately the mission work and increased mission work in this area.

Mr. Chairman and members of the subcommittee, we will ensure that our stockpile, our infrastructure, and our missions are melded together into a comprehensive, forward-looking strategy that protects America and its allies. Investments in nuclear security are now providing the tools to tackle a broad range of nuclear security challenges. Now we must continue to cultivate the talents of our people to use these tools effectively, because essentially, in the end, people are the key to our success here.

Thank you, Mr. Chairman, and we all look forward to your questions.

[The statement follows:]

PREPARED STATEMENT OF HON. THOMAS P. D'AGOSTINO

Thank you for the opportunity to present the fiscal year 2011 President's budget request for the National Nuclear Security Administration (NNSA). This budget request will allow the NNSA to meet its commitments to the American people to provide for nuclear deterrence, to reduce nuclear dangers around the world, and to provide the capabilities to address the broader national security challenges of the 21st century.

At this time last year, the focus of NNSA efforts was the continuing transformation of the cold war-era weapons complex to a 21st century Nuclear Security Enterprise, and transformation of the composition and size of the U.S. nuclear weapons stockpile. Simultaneously, we were in the very early stages of defining the efforts necessary to address the President's policy statements on securing the most vulnerable nuclear materials worldwide.

During the first 14 months of the Obama administration, we have been fully engaged with the Department of Defense (DOD) and the Interagency on the Nuclear Posture Review, and with the Department of State on a new START Agreement and a broad menu of nonproliferation agreements with our international partners.

NNSA efforts this past year defined a portfolio of programs to meet the President's nuclear security agenda for the future. The fiscal year 2011 President's budget request for this portfolio is $11.2 billion, an increase of more than 13 percent from last year. In the development of this portfolio, Secretary of Energy Chu and NNSA Administrator D'Agostino worked closely with Secretary of Defense Gates and other DOD officials to ensure that we remain focused on meeting the DOD's requirements. As a result, the budget request for Weapons Activities increases nearly 10 percent to a level of $7 billion; Defense Nuclear Nonproliferation increases nearly 26 percent to a level of $2.7 billion; Naval Reactors increases more than 13 percent to a level of $1.1 billion; and, the request for Federal oversight and staff included in the Office of the Administrator account increases by 6.5 percent to a level of nearly $450 million. NNSA's budget request also includes associated outyear projections in a Future-Years Nuclear Security Program (FYNSP) that identifies resources needed to meet the continuing requirements for significant long term investments in the Nuclear Security Enterprise deliverables, capabilities and infrastructure.

The fiscal year 2011 President's budget request for the NNSA can be summarized in four core components that, collectively, ensure that the NNSA implements the President's overall nuclear security agenda, introduced in his April 2009 Prague speech, re-enforced during the State of the Union Address on January 27, 2010, and will, we believe, be embodied in the soon to be completed Nuclear Posture Review.

Implementing the President's Nuclear Security Vision.—The budget request highlights NNSA's crucial role in implementing President Obama's nuclear security vision, including his call for an international effort to secure all vulnerable nuclear material around the world within 4 years. The request for these efforts is $2.7 billion (an increase of 25.8 percent over the current year). Key nonproliferation programs reflect significant increases from last year, including;

—Nearly $560 million for the Global Threat Reduction Initiative (an increase of 68 percent over the current year) to secure vulnerable nuclear materials around the world within 4 years, and to provide a comprehensive approach to deny terrorist access to nuclear and radiological materials at civilian sites worldwide;

—Over $1 billion for our Fissile Materials Disposition program (an increase of 47 percent over the current year) for construction of the Mixed Oxide (MOX) Fuel Fabrication Facility and the Waste Solidification Building, design of the Pit Disassembly and Conversion Facility, and meeting our commitment to support Russian plutonium disposition activities;

—More than $590 million for Material Protection, Control, and Accounting and Second Line of Defense activities to accelerate securing nuclear materials in the Former Soviet Union and other Asian states, as well as worldwide efforts to deter, detect, and respond to nuclear smuggling events; and

—Over $350 million for the Nonproliferation and Verification Research and Development programs (an increase of 10 percent over the current year) to provide the key technical support for the President's arms control and nonproliferation agenda.

Managing the Nuclear Weapons Stockpile.—Based on a preliminary analysis of the draft Nuclear Posture Review, the Department concluded that maintaining the safety, security, and effectiveness of the nuclear deterrent without nuclear testing—especially at lower stockpile numbers—requires increased investments to strengthen an aging physical infrastructure and to sustain a depleting technical human capital base across the Nuclear Security Enterprise. As such, we are requesting more than

$7 billion (an increase of 9.8 percent over the current year) in the Weapons Activities appropriation to:

—Ensure the capabilities required for stockpile management and for the completion of ongoing Life Extension Programs are available;

—Strengthen the Science, Technology, and Engineering base capabilities that underpin stockpile stewardship, without nuclear testing, as well as all other NNSA nuclear security activities; and

—Reinvest in the scientists, technicians, and engineers who perform the mission across the Nuclear Security Enterprise.

The President's Budget Request is consistent with the principles of the Stockpile Management Program outlined by Congress in the fiscal year 2010 National Defense Authorization Act.

Recapitalizing Our Nuclear Infrastructure and Deterrent Capability.—These increases represent an investment in transforming our outdated nuclear weapons complex into a 21st century Nuclear Security Enterprise. This request includes funds to continue the design of the Uranium Processing Facility at the Y–12 facility; the design and construction of the replacement for the Chemistry and Metallurgy Research facility at the Los Alamos National Laboratory; and, conceptual design for the recapitalization of Naval Reactor's Expended Core Facility at the Idaho National Laboratory. Investing in a modern, sustainable nuclear security infrastructure supports the full range of NNSA's nuclear security missions, including:

—Stockpile stewardship;

—Nuclear nonproliferation and disarmament;

—Arms control treaty monitoring;

—Nuclear forensics;

—Counterterrorism and emergency response; and

—the nuclear Navy.

Additionally, the request supports the recent Department of Defense 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 a 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.

Continuing NNSA Management Reforms.—With the increased resources provided by the Congress comes an increased responsibility to be effective stewards of the taxpayer's money. NNSA will continue to promote proactive, sound management reforms that save money, improve the way we do business, and increase efficiency. Following are a few of the efforts already underway:

—A Zero-Based Security Review initiative has led to efficiencies in our site security programs, helping drive down those costs while sustaining core physical security capabilities.

—An Enterprise Re-engineering Team is implementing ideas for improving the way NNSA does business, such as:

  —A Supply Chain Management Center has already saved the taxpayers more than $130 million since its inception in 2007 and is expanding its focus. Two key elements of the Center are:

    —*eSourcing*.—an electronic sealed-bidding and reverse auction function; and

    —*Strategic Sourcing*.—where our Management and Operating contractors use their combined purchasing power to negotiate multi-site commodity contracts with vendors.

  —A moratorium on new, NNSA-initiated Reviews and re-direction of those resources to improve Contractor Management Systems and operations and oversight across the Nuclear Security Enterprise.

  —Issuing new NNSA Operating Principles to guide the priorities and decision processes of entities that perform NNSA work consistently across the Nuclear Security Enterprise.

  —Applying a new performance-based model, best business practices, and lessons-learned across the Nuclear Security Enterprise. The model, pioneered at our Kansas City Plant, provides greater contractor flexibility and accountability; better focused, risk-based oversight; eliminates redundant and non-value-added reviews; and improves efficiencies and availability of Federal and contractor resources to support the full scope of NNSA missions.

—Reducing contractor expenses through renegotiation of health and dental plans, using common contracts for administration and supplies, and converting plant shifts for five 8-hour days to four 10-hour day shifts.

—Retaining the critical Federal workforce.

—Piloting for the Department a 5 year Office of Personnel Management Demonstration Project on Pay-for-Performance and Pay Banding to test new Human Resource concepts to recruit and retain a high caliber staff by providing faster pay progression for high-performing employees, and to build on the workforce planning system to better identify competency needs and gaps.

—Conducting a Future Leaders Program and sponsoring Historically Black Colleges and Universities, Hispanic Serving Institutions, Native American Serving Institutions, and other intern and fellowship programs to bring into government the best and brightest talent in science, engineering, business, and other technical positions to ensure that when our aging workforce retires, it is replaced with competent, well-trained, and experienced professionals to carry on the mission work of the NNSA.

Finally, NNSA continues to emphasize performance and financial accountability at all levels of our operations. NNSA needs to assure the subcommittee and the taxpayers that the we are an excellent steward of the programs and funds the Congress entrusts to us to carry out the President's nuclear security vision. In 2009, NNSA met 95 percent of its stated program performance objectives, and, over the past 2 years, NNSA successfully executed consecutive, large annual funding increases in several of our nonproliferation programs while reducing uncosted, uncommitted balances. We are ready to meet the challenge of executing the additional program increases supported by the fiscal year 2011 President's budget request. Our Federal and contractor staff and our contracting processes are in place to initiate immediately the increased mission work both in the United States and abroad. The NNSA will be a leader in successful program and financial execution for the Department of Energy and for the U.S. Government.

The NNSA is not operating on a "business-as-usual" basis. The budget request represents a comprehensive approach to ensuring the nuclear security of our Nation. NNSA will ensure that our strategic posture, our nuclear weapons stockpile, and our infrastructure, along with our nonproliferation, arms control, emergency response, counterterrorism, and naval propulsion programs, are melded into one comprehensive, forward-looking strategy that protects America and its allies.

Maintaining the nuclear weapons stockpile is the core work in the NNSA. However, the science, technology, and engineering capabilities, which enable the core work, must also continue to focus on providing a sound foundation for ongoing nonproliferation and other threat reduction programs. The investment in nuclear security is providing the tools that can tackle a broad array of national security and energy challenges and in other realms. NNSA now has the tools, but must continue to cultivate the talents of the people to use them effectively.

The NNSA is developing the next generation of scientists, engineers, and technicians required to meet our enduring deterrence requirements as well as the critical work in nonproliferation, nuclear counterterrorism, and forensics. People are ultimately our most important resource. We are working closely with our national laboratories to develop and retain the necessary cadre of the best and the brightest to successfully carry out all of our technically challenging programs into the foreseeable future.

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

NATIONAL NUCLEAR SECURITY ADMINISTRATION BUDGET OVERVIEW

The President's budget request for the NNSA contains budget information for 5 years as required by section 3253 of Public Law 106–065, entitled Future-Years Nuclear Security Program (FYNSP). The FYNSP projects $57.9 billion for NNSA programs through fiscal year 2015. While the funding necessary to support the President's commitment to lead an international effort to secure vulnerable nuclear materials throughout the world is focused in the near term, major longer term funding commitments are needed in other NNSA programs. The Secretaries of the Department of Defense (DOD) and the Department of Energy (DOE) agree that it is necessary to modernize the nuclear security infrastructure of the United States, and this will require the investments over the long-term reflected in the FYNSP. Modernization of the infrastructure, including major capital projects, is needed to ensure safe, secure, sustainable and cost-effective operations in support of scientific and manufacturing activities. It is also necessary to bolster key scientific, technical and manufacturing capabilities needed to ensure that the U.S. nuclear weapons stock-

pile remains safe, secure and effective while avoiding the requirement for new nuclear tests. Increased outyear resources are also included for major new deliverables in support of the nuclear navy, including reactor plant development for the OHIO-class replacement submarine, core manufacturing for and refueling of the technology demonstration land-based prototype, and initial planning for the recapitalization of spent nuclear fuel infrastructure.

NNSA PROGRAM SUMMARIES

The fiscal year 2011 President's budget request for the NNSA is $11.2 billion, a 13.4 percent increase over the fiscal year 2010 appropriated level. Out-year projections meet the requirements for significant long-term investments in the nuclear security enterprise deliverables, capabilities and infrastructure.

Weapons Activities Appropriation

The request for this appropriation is $7.0 billion; an increase of 9.8 percent over the fiscal year 2010 appropriated level. This level is sustained and increased in the later out-years.

Although no change to the existing program budget structure within this appropriation is proposed in this budget, we will address the current programs within the Weapons Activities appropriation in four related components:

—Stockpile Support (Directed Stockpile Work, Readiness Campaign);
—Science, Technology and Engineering (Science Campaign, Engineering Campaign, Inertial Confinement Fusion and High Yield Campaign, Advanced Simulation and Computing Campaign, Science, Technology and Engineering Capability);
—Infrastructure (Readiness in Technical Base and Facilities, Secure Transportation Asset, Facilities and Infrastructure Recapitalization Program, Site Stewardship); and
—Security and Nuclear Counterterrorism (Defense Nuclear Security, Cyber Security, Nuclear Counterterrorism Incident Response).

Increased funding is requested for programs in Stockpile Support, for Scientific, Technology and Engineering activities related to maintenance assessment and certification capabilities for the stockpile, and for critical infrastructure improvements. The Security and Nuclear Counterterrorism component decreases about 3 percent from the fiscal year 2010 appropriated levels, attributable to continuing efficiencies in the Defense Nuclear Security programs budget.

This multi-year increase reflects the President's commitment to maintain the safety, security and effectiveness of the nuclear deterrent without underground nuclear testing, consistent with the principles of the Stockpile Management Program outlined in section 3113(a)(2) of the National Defense Authorization Act of fiscal year 2010 (50 U.S.C. 2524). The nuclear security requirements driving this budget request include improvements to the safety and security of the enduring stockpile; a strengthened science, technology, and engineering base; and a recapitalized physical infrastructure. The enterprise must also be responsive to an arguably more complex future national defense environment than the singular cold-war context within which the legacy deterrent was built.

The President's budget request provides funding necessary to protect and advance the scientific capabilities at the U.S. national security laboratories—including the ability to maintain the nuclear deterrent as well as development and engineering expertise and capabilities—through a stockpile stewardship program that fully exercises these capabilities.

This budget request is responsive to fiscal year 2010 Congressional direction to carry out a Stockpile Management Program in support of stockpile stewardship that provides for effective management of the weapons in the nuclear weapons stockpile. This program will strengthen the stockpile activities, including life extension programs and surveillance; strengthen science, technology and engineering, including the workforce; and modernize the aging infrastructure, particularly special nuclear materials capabilities. The key objectives of the Stockpile Management Program include:

—Increase the reliability, safety, and security of the stockpile;
—Further reduce the likelihood of the need to resume underground nuclear testing;
—Achieve further reductions in the future size of the stockpile;
—Reduce the risk of an accidental detonation; and
—Reduce the risk of an element of the stockpile being used by a person or entity hostile to the United States, its vital interests, or its allies.

The Stockpile Support component of this appropriation includes Directed Stockpile Work and the supporting Readiness Campaign. The President's budget request is

$2.0 billion, an increase of 25.2 percent over the fiscal year 2010 appropriation. This provides for the Stockpile Management Program, including surveillance, maintenance, assembly, disassembly and dismantlement activities, and will fully support the ongoing Life Extension Programs for the W76 warhead and the refurbishment of the B61 bomb. The budget request will enhance surveillance efforts, and ensure that capabilities and capacity are available so that future warhead life extension programs will allow for increased margin and enhanced warhead safety, security and control. The request will initiate a study in fiscal year 2011 to evaluate future options and approaches to maintaining the W78, consistent with the principles of the Stockpile Management Program defined in section 3113(a)(2) of the National Defense Authorization Act of fiscal year 2010 (50 U.S.C. 2524).

The Science, Technology and Engineering (STE) component of this appropriation includes the Science Campaign, Engineering Campaign, Inertial Confinement Fusion and High Yield Campaign, Advanced Simulation and Computing Campaign, and Science, Technology and Engineering Capability. The President's budget request of $1.6 billion is an increase of 10.4 percent over the fiscal year 2010 appropriation and will restore sufficient funds for the science and technology base that supports stockpile assessment and certification in the absence of nuclear testing. Within this request, the Inertial Confinement Fusion and High Yield Campaign is requested at $481.5 million. Construction of the National Ignition Facility (NIF) was completed in fiscal year 2009, and the first in a series of ignition experiments beginning in the summer of 2010 will attempt to compress, implode, and ignite a layered deuterium-tritium capsule with a ~1.3 megajoule energy pulse from the NIF. Regardless of the specific status of ignition, fiscal year 2011 will present a very demanding agenda of work in the ignition effort. Results from the first ignition experiments in 2010 will be analyzed in detail, and the intensive process of tuning laser and target parameters for optimum performance will continue toward development of a robust ignition platform by the end of 2012. The NIF is designed to provide critical scientific data to support the stockpile without underground nuclear testing.

Computation and simulation underpin all of our science, technology and engineering, and are pervasive throughout the activities in the nuclear security enterprise. The fiscal year 2011 President's budget request of $616 million for the Advanced Simulation and Computing Campaign will enable a stronger simulation program and inject a renewed scientific rigor back into the program. Developing robust peer review among the national security laboratories as we move away from the test base experience is essential to being able to maintain a stockpile without underground testing. Comprehensive uncertainty quantification calculations in 3D will provide the confidence necessary to make reliable progress toward the predictive capability necessary to address stockpile aging issues. In the next decade, predictive capability and specific warhead simulation deliverables will demand ever more powerful and sophisticated simulation environments. This request will position the national security laboratories to take advantage of future platform architectures to more efficiently steward the stockpile.

Also within the STE component, the new subprogram to provide collaborative efforts in intelligence analysis, which was created in response to congressional funding in the Supplemental Appropriations Act, 2009, continues in fiscal year 2011. This subprogram provides a focal point for science, technology and engineering in NNSA, and will facilitate a point of entry for the wider national security community into NNSA's programs and facilities. The fiscal year 2009 supplemental funding provided for laboratory efforts in intelligence analysis. The fiscal year 2011 request will support NNSA's commitment to a 5 year Memorandum of Understanding with the Defense Threat Reduction Agency for national security research and development of mutual interest. At this time, the defined focus areas of mutual interest are: Advanced Science and Forensics, Experimental Capabilities, Science Based Output, Active Interrogation of Special Nuclear Material, and Nuclear Weapons Effects Modeling and Simulation.

The Infrastructure component of the appropriation includes Readiness in Technical Base and Facilities, Secure Transportation Asset, Facilities and Infrastructure Recapitalization Program, and Site Stewardship. The President's budget request is $2.3 billion, a 4.8 percent increase over the fiscal year 2010 level. Transformation and maintenance of supporting physical infrastructure for the nuclear security enterprise is a high priority in the upcoming FYNSP. Along with the funding to support the ongoing operations of the Government-owned, contractor operated laboratories and manufacturing facilities, the President's budget request includes funding for major long-term construction projects needed to restore critical capabilities in plutonium and uranium essential to the Stockpile Management program.

The President's budget request includes funding to complete the design and begin construction of the Chemistry and Metallurgy Research Facility Replacement—Nu-

clear Facility at the Los Alamos National Laboratory. This facility conducts plutonium research and development and provides analytical capabilities in support of pit surveillance and production. The facility will also support the broad range of NNSA's nuclear security missions, including: (1) stockpile stewardship; (2) nuclear nonproliferation and disarmament; (3) arms control treaty monitoring; (4) nuclear forensics; and, (5) counterterrorism and emergency response. Current planning schedules full operation in 2022. A related project is requested to improve the safety profile at the adjoining PF–4 facility. The budget request also includes funding for continuing the design and construction planning of the Uranium Processing Facility at the Y–12 National Security Complex to support production and surveillance of highly-enriched uranium components. This facility is also planned to achieve full operations by 2022.

Maintaining and improving the current infrastructure is also an important priority for NNSA. The Facilities and Infrastructure Recapitalization Program is continuing to reduce the deferred maintenance backlog as it proceeds toward its planned conclusion in 2013. Increased funding is provided for the Site Stewardship program that integrates institutional/landlord functions for our sites, including regulatory-driven long-term Stewardship, Nuclear Materials Consolidation, and energy efficiency projects.

The Security and Nuclear Counterterrorism component of the appropriation includes Defense Nuclear Security, Cyber Security, and Nuclear Counterterrorism Incident Response. The President's budget request for these programs is $1.1 billion, which, except for a 5 percent increase in Nuclear Counterterrorism and Incident Response, represents an overall 3.2 percent decrease from fiscal year 2010 appropriated levels. The decrease reflects efficiencies expected to be gained from risk-informed decisions identified through the Defense Nuclear Security program's Zero-Based Security Review, consistent with implementation of the Graded Security Protection Policy.

Defense Nuclear Nonproliferation Appropriation

The request for this appropriation is $2.7 billion; an increase of 25.8 percent over the fiscal year 2010 appropriated level. The increase is driven by the imperative for U.S. leadership in nonproliferation initiatives both here and abroad, including the consolidation of fissile materials disposition activities into this account. In addition to the programs funded solely by the NNSA, our programs support the Department of Energy mission to protect our national security by preventing the spread of nuclear weapons and nuclear materials to terrorist organizations and rogue states. These efforts are implemented in part through the Global Partnership against the Spread of Weapons and Materials of Mass Destruction, formed at the G8 Kananaskis Summit in June 2002, and the Global Initiative to Combat Nuclear Terrorism, launched in Rabat, Morocco, in October 2006.

The fiscal year 2011 President's budget request reflects support for the President's direction to secure vulnerable nuclear materials around the world in 4 years. The International Nuclear Materials Protection and Cooperation (MPC&A) program increases by 3 percent to support selective new security upgrades to buildings and areas that were added to the cooperation after the Bratislava summit, additional Second Line of Defense sites, sustainability of MPC&A upgrades, and continued expansion of nuclear and radiological material removal. The Global Threat Reduction Initiative increases by 68 percent to support an increase in reactor conversions and shutdowns, acceleration of domestic production capability of Molybdenum-99, and an acceleration of the removal and disposition of high-priority, vulnerable nuclear materials in full support of the President's nuclear security agenda. The Fissile Materials Disposition program increases by 47 percent reflecting continuing domestic construction on the MOX Fuel Fabrication Facility, and the design and construction of two major supporting facilities.

The NNSA's nonproliferation programs seek to secure nuclear materials worldwide that could be used for weapons and to convert such materials for peaceful applications, and, through the Second Line of Defense Program, provide the tools for partner countries to detect and interdict smuggling of these materials across international borders.

The Nuclear Nonproliferation Research and Development (R&D) activities seek to improve detection of nuclear material production and movement through advanced R&D. The program draws on the vast technical expertise of the NNSA and DOE national laboratories, as well as academia and industry, the program delivers solutions to the hardest technical nuclear security challenges. Focusing on nuclear detection instrumentation development that is tightly coordinated across Federal and international agencies, these advanced detection techniques are a significant contributor to the U.S. ability to detect foreign nuclear materials production as well as

the illicit movement of those materials. Further, the R&D program provides the backbone for advances in U.S. and international capabilities to monitor nuclear-related treaty obligations. In keeping with the President's commitment for verifiable treaties, the R&D program's fiscal year 2011 budget request increases by 10 percent over the current year to include a more robust set of testing and evaluation activities to demonstrate new U.S. treaty monitoring capabilities.

The fiscal year 2011 President's budget request has consolidated all of the funding requests for the Fissile Materials Disposition activities within the Defense Nuclear Nonproliferation appropriation. The current funding for both the MOX Fuel Fabrication Facility and Waste Solidification Building projects were moved in the fiscal year 2010 appropriation, and the Pit Disassembly and Conversion Facility project has been moved back to Defense Nuclear Nonproliferation appropriation starting in fiscal year 2011. The DOE has decided to explore a proposed combination of the Office of Environmental Management Plutonium Preparation Project and the Pit Disassembly and Conversion Project in a single project located in an existing K-Area Facility at the Savannah River Site. This activity will be evaluated using the Department's project management order, DOE O 413, and will move toward a Critical Decision 1 (approval of alternative selection and cost range).

The United States continues to work with the Russian Federation on plutonium disposition in Russia pursuant to the Plutonium Management and Disposition Agreement reached in September 2000. Congress had appropriated $200 million in a fiscal year 1999 Supplemental Appropriation to support Russian plutonium disposition activities; however, $207 million of this and other funding for this program was rescinded in fiscal year 2008 due to lack of progress in Russia. The fiscal year 2011 request includes $100 million of the U.S. commitment to provide $400 million to support plutonium disposition in Russia once a Protocol amending the 2000 Agreement, related liability provisions, and a monitoring and inspection regime is signed. The balance of more than $2 billion in remaining cost associated with Russian plutonium disposition would be borne by Russia and non-U.S. contributions.

Naval Reactors Appropriation

The request for this appropriation is $1.1 billion; an increase of 13.3 percent over the fiscal year 2010 appropriated level. The program directly supports the U.S. Navy's nuclear fleet, which encompasses all Navy submarines and aircraft carriers. The nuclear fleet is comprised of 54 attack submarines, 14 ballistic missile submarines, 4 guided missile submarines, and 11 aircraft carriers. These ships, and their consistent forward presence, are relied on every day, all over the world, to protect our national interests.

Naval Reactors has a long history of providing safe and reliable Naval nuclear propulsion. This requires continual analysis for prompt identification of leading indicators from fleet operations and careful engineering to assure prudent, yet timely modernization, and scrupulous maintenance. Over the last decade, funding for these successful endeavors has been relatively constant. The onset of unavoidable, nondiscretionary requirements for spent reactor fuel processing and replacement, and maintenance and disposal of an aging support infrastructure has required continued rebalancing of funding priorities. Those priorities coupled with new challenges necessitated the additional funding included in the budget request. Increases in the fiscal year 2011 President's budget request support three key deliverables—the OHIO-class submarine replacement reactor plant, the refueling of the land-based prototype located in New York, and the Expended Core Facility at the Naval Reactors Facility located on the Idaho National Laboratory.

The most survivable leg of the Nation's strategic deterrent, the OHIO-class ballistic missile submarines are reaching the end of their operational life. Propulsion plant design and development efforts began in 2010 to support Navy procurement of reactor plant components in 2017, for ship construction starting in 2019. This schedule for development is consistent with previous designs. Key technical challenges include an effort to lower total ownership costs while maintaining the traditionally high operational availability of this new ship. The most important challenge to meet this is a life-of-the-ship reactor core.

The DOE land-based prototype reactor, which has served the Program's needs for R&D and training since 1978, requires refueling in 2017. The reactor provides a cost-effective test platform for new technologies and components before they are introduced for Fleet applications, supports testing and evaluation of materials, and provides a vital training platform for reactor plant operators. The land-based prototype refueling will also provide key technical data for the OHIO-class submarine replacement, since the reactor core work to support the refueling will also support the core manufacturing development for the OHIO-class replacement. This approach is based on Naval Reactors' extensive experience in reactor design—taking advantage

of the prototype refueling opportunity to proof-test new manufacturing techniques for reactor fuel cladding material never previously used by the Navy. This will reduce technical risk in manufacturing the OHIO-class replacement life-of-the-ship core.

The Expended Core Facility (ECF) is the central location for naval spent nuclear fuel receipt, inspection, dissection, packaging, and secure dry storage, as well as detailed examination of spent cores and irradiated specimens. The existing facility is more than 50 years old, and its mission has evolved significantly over time. While serviceable, it no longer efficiently supports the nuclear Fleet or the work required to meet the agreements we have with the State of Idaho for naval spent fuel. To minimize risks associated with an aging facility and support the timely refueling and defueling of nuclear-powered warships, construction is targeted to begin by 2015. Uninterrupted ECF receipt of naval spent nuclear fuel is vital to the timely, constant throughput of ship refuelings and return of these capital warships to the Fleet. The mission need statement for this project has been approved, and conceptual design and alternative analysis efforts began in 2010.

Office of the Administrator Appropriation

The request for this appropriation is $448.3 million; an increase of 6.5 percent over the fiscal year 2010 appropriated level. This appropriation provides for the Federal staff and related support for the NNSA Headquarters and field organizations. The Federal personnel level for fiscal year 2011 is projected at 1,970 Full Time Equivalents, essentially level with the expectation for fiscal year 2010. Implicit in the request is a 1.4 percent cost of living adjustment and a 3.3 percent increase for performance-based salary increases, awards, and benefit escalation associated with the Federal workforce. Other increases reflect full funding for NNSA site office space requirements across the Nuclear Security Enterprise, funds for new building maintenance and lease requirements, and expansion of NNSA international offices for the NNSA's nonproliferation programs.

NATIONAL NUCLEAR SECURITY ADMINISTRATION—APPROPRIATION AND PROGRAM SUMMARY TABLES—OUT-YEAR APPROPRIATION SUMMARY TABLE—FISCAL YEAR 2011 BUDGET TABLES

NATIONAL NUCLEAR SECURITY ADMINISTRATION—OVERVIEW—APPROPRIATION SUMMARY

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
National Nuclear Security Administration:			
Office of the Administrator	439,190	420,754	448,267
Weapons Activities	6,410,000	6,384,431	7,008,835
Defense Nuclear Nonproliferation	1,545,071	2,136,709	2,687,167
[non-add MOX Project funded in other appropriations]	[278,879]	(1)	(1)
Naval Reactors	828,054	945,133	1,070,486
Total, NNSA	9,222,315	9,887,027	11,214,755
Transfer of prior year balances—OMB scoring		−10,000	
Total, NNSA		9,877,027	

[1] N/A.

OUT-YEAR APPROPRIATION SUMMARY—NNSA FUTURE-YEARS NUCLEAR SECURITY PROGRAM (FYNSP)

[In thousands of dollars]

	Fiscal Year 2011	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
NNSA:					
Office of the Administrator	448,267	426,424	430,726	435,069	448,498
Weapons Activities	7,008,835	7,032,672	7,082,146	7,400,966	7,648,200
Defense Nuclear Nonproliferation	2,687,167	2,507,191	2,715,191	2,833,243	2,956,328

OUT-YEAR APPROPRIATION SUMMARY—NNSA FUTURE-YEARS NUCLEAR SECURITY PROGRAM (FYNSP)—Continued

[In thousands of dollars]

	Fiscal Year 2011	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Naval Reactors	1,070,486	1,099,734	1,171,178	1,226,017	1,310,530
Total, NNSA	11,214,755	11,066,021	11,399,241	11,895,295	12,363,556

OFFICE OF THE ADMINISTRATOR—OVERVIEW—APPROPRIATION SUMMARY BY PROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation [1]	Fiscal Year 2011 Request
Office of the Administrator:			
Office of the Administrator	415,878	418,074	448,267
Congressionally Directed Projects	23,312	13,000	
Use of Prior Year Balances		−10,320	
Total, Office of the Administrator	439,190	420,754	448,267
Transfer of Prior Year Balances		−10,000	
Total, OMB Scoring	439,190	410,754	448,267

[1] In accordance with Public Law 111–85, $10,000,000 of Office of the Administrator prior year balances have been transferred to Non-Defense Environmental Cleanup for cleanup efforts at the Argonne National Laboratory.

Public Law Authorization

Energy and Water Development and Related Agencies Appropriations Act, 2010 (Public Law 111–85).

Fiscal year 2009 Omnibus Appropriations Act (Public Law 111–8).

National Nuclear Security Administration Act (Public Law 106–65), as amended.

OUT-YEAR APPROPRIATION SUMMARY

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Office of the Administrator	426,424	430,726	435,069	448,498

OFFICE OF THE ADMINISTRATOR—CONGRESSIONALLY DIRECTED PROJECTS—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009	Fiscal Year 2010	Fiscal Year 2011
Congressionally Directed Projects	23,312	13,000	

WEAPONS ACTIVITIES—OVERVIEW—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Weapons Activities:			
Directed Stockpile Work	1,590,152	1,505,859	1,898,379
Science Campaign	316,690	295,646	365,222
Engineering Campaign	150,000	150,000	141,920
Inertial Confinement Fusion Ignition and High Yield Campaign	436,915	457,915	481,548
Advanced Simulation and Computing Campaign	556,125	567,625	615,748

WEAPONS ACTIVITIES—OVERVIEW—FUNDING PROFILE BY SUBPROGRAM—Continued

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Readiness Campaign	160,620	100,000	112,092
Readiness in Technical Base and Facilities	1,674,406	1,842,870	1,848,970
Secure Transportation Asset	214,439	234,915	248,045
Nuclear Counterrorism Incident Response	215,278	221,936	233,134
Facilities and Infrastructure Recapitalization Program	147,449	93,922	94,000
Site Stewardship	.....	61,288	105,478
Environmental Projects and Operations	38,596	.....	.....
Defense Nuclear Security	735,208	769,044	719,954
Cyber Security	121,286	122,511	124,345
Science, Technology and Engineering Capability	30,000	.....	20,000
Congressionally Directed Projects	22,836	3,000	.....
Use/Rescission of Prior Year Balances	.....	−42,100	.....
Total, Weapons Activities	6,410,000	6,384,431	7,008,835

Public Law Authorization

National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84).

Energy and Water Development and Related Agencies Appropriations Act, 2010 (Public Law 111–85).

National Nuclear Security Administration Act, (Public Law 106–65), as amended.

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Weapons Activities:				
Directed Stockpile Work	1,900,736	1,999,470	2,240,139	2,346,254
Science Campaign	397,460	418,823	416,199	394,766
Engineering Campaign	149,737	134,996	144,920	145,739
Inertial Confinement Fusion Ignition and High Yield Campaign	480,451	475,597	470,994	484,812
Advanced Simulation and Computing Campaign	622,940	616,257	615,420	633,134
Readiness Campaign	81,697	70,747	69,854	72,584
Readiness in Technical Base and Facilities	1,872,546	1,841,325	1,926,568	1,997,764
Secure Transportation Asset	251,272	249,456	252,869	261,521
Nuclear Counterrorism Incident Response	222,914	222,508	235,300	237,986
Facilities and Infrastructure Recapitalization Program	94,000	94,000	.....	.....
Site Stewardship	101,929	103,536	174,071	205,802
Defense Nuclear Security	730,944	729,609	728,925	740,649
Cyber Security	126,046	125,822	125,707	127,189
Total, Weapons Activities	7,032,672	7,082,146	7,400,966	7,648,200

DIRECTED STOCKPILE WORK—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Directed Stockpile Work:			
Life Extension Programs:			
B61 Life Extension Program	1,854	.....	.....
W76 Life Extension Program	203,189	223,196	249,463
Subtotal, Life Extension Programs	205,043	223,196	249,463

DIRECTED STOCKPILE WORK—FUNDING PROFILE BY SUBPROGRAM—Continued

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Stockpile Systems:			
B61 Stockpile Systems	90,204	91,956	317,136
W62 Stockpile Systems	1,500	.....	.....
W76 Stockpile Systems	63,219	56,554	64,521
W78 Stockpile Systems	40,347	48,311	85,898
W80 Stockpile Systems	30,712	27,398	34,193
B83 Stockpile Systems	26,938	33,502	39,349
W87 Stockpile Systems	40,949	48,139	62,603
W88 Stockpile Systems	43,928	51,940	45,666
Subtotal, Stockpile Systems	337,797	357,800	649,366
Weapons Dismantlement and Disposition:			
99–D–141–01 Pit Disassembly and Conversion Facility—SRS	24,883	.....	.....
99–D–141–02 Waste Solidification Building—SRS	40,000	.....	.....
Weapons Dismantlement and Disposition	52,695	96,100	58,025
Pit Disassembly and Conversion Facility—O&M	69,351	.....	.....
Subtotal, Weapons Dismantlement and Disposition	186,929	96,100	58,025
Stockpile Services:			
Production Support	308,806	300,037	309,761
Research & Development Support	35,049	37,071	38,582
Research & Development Certification and Safety	169,403	166,523	209,053
Management, Technology, and Production	192,072	183,223	193,811
Plutonium Capability	155,053	.....	.....
Plutonium Sustainment	.....	141,909	190,318
Subtotal, Stockpile Services	860,383	828,763	941,525
Total, Directed Stockpile Work	1,590,152	1,505,859	1,898,379

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Directed Stockpile Work:				
Life Extension Programs:				
W76 Life Extension Program	255,000	255,000	255,000	255,000
Subtotal, Life Extension Programs	255,000	255,000	255,000	255,000
Stockpile Systems:				
B61 Stockpile Systems	337,851	394,027	437,518	512,296
W76 Stockpile Systems	56,418	58,312	55,396	54,038
W78 Stockpile Systems	104,964	156,340	346,923	345,359
W80 Stockpile Systems	31,627	34,566	35,974	36,621
B83 Stockpile Systems	37,160	38,294	42,621	42,059
W87 Stockpile Systems	67,754	64,924	51,898	50,433
W88 Stockpile Systems	61,229	65,094	69,777	68,648
Subtotal, Stockpile Systems	697,003	811,557	1,040,107	1,109,454
Weapons Dismantlement and Disposition	53,327	48,446	58,102	60,089
Stockpile Services:				
Production Support	288,227	271,067	265,429	274,509

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM—Continued

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Research & Development Support	35,044	34,667	35,497	36,711
Research & Development Certification and Safety	207,133	213,923	214,632	222,777
Management, Technology, and Production	202,020	196,676	198,660	205,454
Plutonium Sustainment	162,982	168,134	172,712	182,260
Subtotal, Stockpile Services	895,406	884,467	886,930	921,711
Total, Directed Stockpile Work	1,900,736	1,999,470	2,240,139	2,346,254

SCIENCE CAMPAIGN—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Science Campaign:			
Advanced Certification	19,400	19,400	76,972
Primary Assessment Technologies	80,181	83,181	85,723
Dynamic Plutonium Experiments	23,022	.....	.....
Dynamic Materials Properties	83,231	86,617	96,984
Advanced Radiography	28,535	28,535	23,594
Secondary Assessment Technologies	76,913	77,913	81,949
Test Readiness	5,408	.....	.....
Total, Science Campaign	316,690	295,646	365,222

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Science Campaign:				
Advanced Certification	104,704	129,481	129,978	98,908
Primary Assessment Technologies	86,253	85,248	84,327	87,165
Dynamic Materials Properties	97,114	95,980	94,945	98,144
Advanced Radiography	27,132	26,816	26,528	27,421
Secondary Assessment Technologies	82,257	81,298	80,421	83,128
Total, Science Campaign	397,460	418,823	416,199	394,766

ENGINEERING CAMPAIGN—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Engineering Campaign:			
Enhanced Surety	46,111	42,000	42,429
Weapon Systems Engineering Assessment Technology	16,593	18,000	13,530
Nuclear Survivability	21,100	21,000	19,786
Enhanced Surveillance	66,196	69,000	66,175
Total, Engineering Campaign	150,000	150,000	141,920

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Engineering Campaign:				
Enhanced Surety	44,019	43,699	48,851	50,523
Weapon Systems Engineering Assessment Technology	16,533	15,199	19,730	20,404
Nuclear Survivability	20,627	18,550	10,334	10,687
Enhanced Surveillance	68,558	57,548	66,005	64,125
Total, Engineering Campaign	149,737	134,996	144,920	145,739

INERTIAL CONFINEMENT FUSION IGNITION AND HIGH YIELD CAMPAIGN—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Inertial Confinement Fusion Ignition and High Yield Campaign:			
Ignition	100,535	106,734	109,506
NIF Diagnostics, Cryogenics, and Experimental Support	66,201	72,252	102,649
Pulsed Power Inertial Confinement Fusion	8,652	5,000	5,000
Joint Program in High Energy Density Laboratory Plasmas	3,053	4,000	4,000
Facility Operations and Target Production	203,282	269,929	260,393
NIF Assembly and Installation Program	55,192	.....	.....
Total, Inertial Confinement Fusion Ignition and High Yield Campaign	436,915	457,915	481,548

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Inertial Confinement Fusion Ignition and High Yield Campaign:				
Ignition	110,222	74,410	71,479	73,886
Support of Other Stockpile Programs	17,240	39,637	35,522	49,154
NIF Diagnostics, Cryogenics, and Experimental Support	74,104	83,878	82,921	76,117
Pulsed Power Inertial Confinement Fusion	5,000	5,000	5,000	5,000
Joint Program in High Energy Density Laboratory Plasmas	4,000	4,000	4,000	4,000
Facility Operations and Target Production	269,885	268,672	272,072	276,655
Total, Inertial Confinement Fusion Ignition and High Yield Campaign	480,451	475,597	470,994	484,812

ADVANCED SIMULATION AND COMPUTING CAMPAIGN—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Advanced Simulation and Computing Campaign:			
Integrated Codes	138,917	140,882	165,947
Physics and Engineering Models	49,284	61,189	62,798
Verification and Validation	50,184	50,882	54,781
Computational Systems and Software Environment	156,733	159,022	175,833
Facility Operations and User Support	161,007	155,650	156,389
Total, Advanced Simulation and Computing Campaign	556,125	567,625	615,748

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Advanced Simulation and Computing Campaign:				
Integrated Codes	167,327	163,752	163,887	168,143
Physics and Engineering Models	66,541	65,019	64,626	66,438
Verification and Validation	54,168	52,879	52,300	53,835
Computational Systems and Software Environment	175,833	175,833	175,833	180,912
Facility Operations and User Support	159,071	158,774	158,774	163,806
Total, Advanced Simulation and Computing Campaign	622,940	616,257	615,420	633,134

READINESS CAMPAIGN—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Readiness Campaign:			
Stockpile Readiness	27,869	5,746	18,941
High Explosives and Weapon Operations	8,581	4,608	3,000
Nonnuclear Readiness	32,545	12,701	21,864
Tritium Readiness	70,409	68,246	50,187
Advanced Design and Production Technologies	21,216	8,699	18,100
Total, Readiness Campaign	160,620	100,000	112,092

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Readiness Campaign:				
Tritium Readiness	81,697	70,747	69,854	72,584
Total, Readiness Campaign	81,697	70,747	69,854	72,584

READINESS IN TECHNICAL BASE AND FACILITIES—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Readiness in Technical Base and Facilities:			
Operations of Facilities:			
Kansas City Plant	89,871	156,056	186,102
Lawrence Livermore National Laboratory	82,605	86,670	80,106
Los Alamos National Laboratory	289,169	311,776	318,464
Nevada Test Site	92,203	79,583	80,077
Pantex	101,230	131,602	121,254
Sandia National Laboratory	123,992	104,133	117,369
Savannah River Site	92,762	128,580	92,722
Y–12 National Security Complex	235,397	229,774	220,927
Institutional Site Support	56,102	120,129	40,970
Subtotal, Operations of Facilities	1,163,331	1,348,303	1,257,991
Program Readiness	71,626	73,021	69,309
Material Recycle and Recovery	70,334	69,542	70,429

READINESS IN TECHNICAL BASE AND FACILITIES—FUNDING PROFILE BY SUBPROGRAM—Continued

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Containers	22,696	23,392	27,992
Storage	31,951	24,708	24,233
Subtotal, Operations and Maintenance	1,359,938	1,538,966	1,449,954
Construction	314,468	303,904	399,016
Total, Readiness in Technical Base and Facilities	1,674,406	1,842,870	1,848,970

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Readiness in Technical Base and Facilities:				
Operations of Facilities	1,178,512	1,129,208	1,061,276	1,097,791
Program Readiness	48,492	47,998	63,541	65,713
Material Recycle and Recovery	61,678	63,673	63,386	65,554
Containers	22,043	23,100	22,971	23,757
Storage	19,535	21,425	21,942	22,693
Subtotal, Operations and Maintenance	1,330,260	1,285,404	1,233,116	1,275,508
Construction	542,286	555,921	693,452	722,256
Total, Readiness in Technical Base and Facilities	1,872,546	1,841,325	1,926,568	1,997,764

SECURE TRANSPORTATION ASSET—OVERVIEW FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Secure Transportation Asset (STA):			
Operations and Equipment	127,701	138,772	149,018
Program Direction	86,738	96,143	99,027
Total, Secure Transportation Asset	214,439	234,915	248,045

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Operations and Equipment:				
Operations and Equipment	149,274	144,398	144,660	150,066
Program Direction	101,998	105,058	108,209	111,455
Total, Operations and Equipment	251,272	249,456	252,869	261,521

SECURE TRANSPORTATION ASSET—OPERATIONS AND EQUIPMENT—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Operations and Equipment:			
Mission Capacity	70,107	75,038	84,010
Security/Safety Capability	20,617	26,472	27,001
Infrastructure and C5 Systems	25,978	23,217	23,681
Program Management	10,999	14,045	14,326
Total, Operations and Equipment	127,701	138,772	149,018

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Operations and Equipment:				
Mission Capacity	82,966	76,764	75,672	79,699
Security/Safety Capability	27,541	28,092	28,654	29,227
Infrastructure and C5 Systems	24,155	24,638	25,131	25,633
Program Management	14,612	14,904	15,203	15,507
Total, Operations and Equipment	149,274	144,398	144,660	150,066

SECURE TRANSPORTATION ASSET—PROGRAM DIRECTION—FUNDING PROFILE BY SUBPROGRAM

[Dollars in thousands]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Program Direction:			
Salaries and Benefits	$75,226	$81,225	$83,311
Travel	$10,188	$411,331	$7,746
Other Related Expenses	$1,324	$3,587	$7,970
Total, Program Direction	$86,738	$96,143	$99,027
Total, Full Time Equivalents	570	647	637

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[Dollars in thousands]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Program Direction:				
Salaries and Benefits	$85,781	$88,323	$90,943	$93,641
Travel	$7,980	$8,218	$8,465	$8,719
Other Related Expenses	$8,237	$8,517	$8,801	$9,095
Total, Program Direction	$101,998	$105,058	$108,209	$111,455
Total, Full Time Equivalents	637	637	637	637

NUCLEAR COUNTERRORISM INCIDENT RESPONSE—FUNDING PROFILE BY SUBPROGRAM

[In thousands for dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Nuclear Counterterrorism Incident Response (Homeland Security):[1]			
Emergency Response (Homeland Security) [1]	132,918	139,048	134,092
National Technical Nuclear Forensics (Homeland Security) [1]	12,557	10,217	11,698
Emergency Management (Homeland Security) [1]	7,428	7,726	7,494
Operations Support (Homeland Security) [1]	8,207	8,536	8,675
International Emergency Management and Cooperation	4,515	7,181	7,139
Nuclear Counterterrorism (Homeland Security) [1]	49,653	49,228	64,036
Total, Nuclear Counterterrorism Incident Response	215,278	221,936	233,134

[1] Office of Management and Budget (OMB) Homeland Security designations.

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Nuclear Counterterrorism Incident Response:				
Emergency Response (Homeland Security) [1]	137,715	138,359	139,504	141,107
National Technical Nuclear Forensics (Homeland Security) [1]	11,589	11,694	11,577	11,828
Emergency Management (Homeland Security) [1]	7,129	6,629	6,505	6,694
Operations Support (Homeland Security) [1]	8,691	8,799	8,749	9,000
International Emergency Management and Cooperation	7,129	7,139	7,032	7,275
Nuclear Counterterrorism (Homeland Security) [1]	50,661	49,888	61,933	62,082
Total, Nuclear Counterterrorism Incident Response	222,914	222,508	235,300	237,986

[1] Office of Management and Budget (OMB) Homeland Security designations.

FACILITIES AND INFRASTRUCTURE RECAPITALIZATION PROGRAM—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Facilities and Infrastructure Recapitalization Program:			
Operations and Maintenance (O&M):			
Recapitalization	69,226	69,377	79,600
Infrastructure Planning	10,324	8,982	9,400
Facility Disposition	.....	5,600	5,000
Subtotal, Operations and Maintenance (O&M)	79,550	83,959	94,000
Construction	67,899	9,963	.....
Total, Facilities and Infrastructure Recapitalization Program	147,449	93,922	94,000

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Facilities and Infrastructure Recapitalization Program:				
Operations and Maintenance (O&M):				
Recapitalization	79,600	86,600	.....	.....
Infrastructure Planning	9,400	2,400	.....	.....

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM—Continued

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Facility Disposition	5,000	5,000	.....	.....
Subtotal, Operations and Maintenance (O&M)	94,000	94,000	.....	.....
Construction	.....	.....	.....	.....
Total, Facilities and Infrastructure Recapitalization Program	94,000	94,000	.....	.....

SITE STEWARDSHIP—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Site Stewardship:			
Operations and Maintenance	.....	61,288	90,478
Construction	.....	.....	15,000
Total, Site Stewardship	.....	61,288	105,478

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Site Stewardship:				
Operations and Maintenance	101,929	103,536	174,071	205,802
Construction	.....	.....	.....	.....
Total, Site Stewardship	101,929	103,536	174,071	205,802

ENVIRONMENTAL PROJECTS AND OPERATIONS—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Environmental Projects and Operations:			
Long-Term Stewardship	38,596	.....	.....
Total, Environmental Projects and Operations	38,596	.....	.....

SAFEGUARDS AND SECURITY—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Safeguards and Security (S&S):			
Defense Nuclear Security (Homeland Security):			
Operations and Maintenance	689,510	720,044	667,954
Construction	45,698	49,000	52,000
Total, Defense Nuclear Security	735,208	769,044	719,954

SAFEGUARDS AND SECURITY—FUNDING PROFILE BY SUBPROGRAM—Continued

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Cyber Security (Homeland Security)	121,286	122,511	124,345
Total, Safeguards and Security	856,494	891,555	844,299

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Safeguards and Security (S&S):				
Defense Nuclear Security (Homeland Security):				
Operations and Maintenance	675,229	672,344	671,671	681,259
Construction	55,715	57,265	57,254	59,390
Total, Defense Nuclear Security	730,944	729,609	728,925	740,649
Cyber Security (Homeland Security)	126,046	125,822	125,707	127,189
Total, Safeguards and Security	856,990	855,431	854,632	867,838

DEFENSE NUCLEAR SECURITY—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Defense Nuclear Security:			
Operations and Maintenance (Homeland Security):			
Protective Forces	418,694	453,000	414,166
Physical Security Systems	77,245	74,000	73,794
Transportation	420	.....	.....
Information Security	25,880	25,300	25,943
Personnel Security	31,263	30,600	30,913
Materials Control and Accountability	35,929	35,200	35,602
Program Management	71,364	83,944	80,311
Technology Deployment, Physical Security	9,431	8,000	7,225
Graded Security Protection Policy (formerly DBT)	19,284	10,000	.....
Total, Operations and Maintenance (Homeland Security)	689,510	720,044	667,954
Construction (Homeland Security)	45,698	49,000	52,000
Total, Defense Nuclear Security	735,208	769,044	719,954

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Defense Nuclear Security:				
Operations and Maintenance (Homeland Security):				
Protective Forces	422,221	414,432	414,617	421,346
Physical Security Systems	71,405	73,987	71,165	72,297
Information Security	26,202	26,464	26,729	26,996
Personnel Security	31,222	31,534	31,849	32,167
Materials Control and Accountability	35,958	36,318	36,681	37,048

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM—Continued

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Program Management	80,924	82,239	83,186	83,887
Technology Deployment, Physical Security	7,297	7,370	7,444	7,518
Total, Operations and Maintenance (Homeland Security)	675,229	672,344	671,671	681,259
Construction (Homeland Security)	55,715	57,265	57,254	59,390
Total, Defense Nuclear Security	730,944	729,609	728,925	740,649

CYBER SECURITY—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Cyber Security (Homeland Security):			
Infrastructure Program	93,776	99,011	97,849
Enterprise Secure Computing	25,500	21,500	21,500
Technology Application Development	2,010	2,000	4,996
Total, Cyber Security (Homeland Security)	121,286	122,511	124,345

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Cyber Security (Homeland Security):				
Infrastructure Program	99,550	99,326	98,211	99,693
Enterprise Secure Computing	21,500	21,500	22,500	22,500
Technology Application Development	4,996	4,996	4,996	4,996
Total, Cyber Security (Homeland Security)	126,046	125,822	125,707	127,189

SCIENCE, TECHNOLOGY AND ENGINEERING CAPABILITY—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Operations and Maintenance	30,000	.....	20,000
Total, Science, Technology and Engineering Capability	30,000	.....	20,000

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Operations and Maintenance	.....	.....	.....	.....
Total, Science, Technology and Engineering Capability	.....	.....	.....	.....

WEAPONS ACTIVITIES—CONGRESSIONALLY DIRECTED PROJECTS—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Congressionally Directed Projects	22,836	3,000	.....

DEFENSE NUCLEAR NONPROLIFERATION—OVERVIEW—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Defense Nuclear Nonproliferation:			
Nonproliferation and Verification Research and Development	356,281	317,300	351,568
Nonproliferation and International Security	150,000	187,202	155,930
International Nuclear Materials Protection and Cooperation	[1] 460,592	572,050	590,118
Elimination of Weapons-Grade Plutonium Production	141,299	24,507	.....
Fissile Materials Disposition	41,774	701,900	1,030,713
Global Threat Reduction Initiative	[2] 404,640	333,500	558,838
Congressional Directed Projects	1,903	250	.....
Subtotal, Defense Nuclear Nonproliferation	1,556,489	2,136,709	2,687,167
Use of Prior Year Balances	−11,418	.....	.....
Total, Defense Nuclear Nonproliferation	1,545,071	2,136,709	2,687,167

[1] Fiscal year 2009 amount includes international contributions of $4,067,065 from Government of Canada, $387,335 from New Zealand, $837,600 from Norway, and $300,000 from South Korea.

[2] Fiscal year 2009 amount includes international contributions of $3,918,000 from the Government of Canada, and $5,722,212 from the United Kingdom of Great Britain and Northern Ireland.

NOTES.—Fiscal year 2009 funds appropriated in Other Defense Activities for the Mixed Oxide Fuel Fabrication Facility, and in Weapons Activities for the Waste Solidification Building and Pit Disassembly and Conversion Facility (fiscal year 2009 and fiscal year 2010) are not reflected in the above table.

Public Law Authorization

Energy and Water and Related Agencies Appropriations Act, 2010 (Public Law 111–85).

National Nuclear Security Administration Act, (Public Law 106–65), as amended.

National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84).

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Defense Nuclear Nonproliferation:				
Nonproliferation and Verification Research and Development	315,941	317,558	328,194	351,145
Nonproliferation and International Security	161,083	165,275	169,861	181,741
International Nuclear Materials Protection and Cooperation	570,798	561,790	558,492	623,670
Fissile Materials Disposition	859,375	1,010,642	789,558	743,600
Global Threat Reduction Initiative	599,994	659,926	987,138	1,056,172
Total, Defense Nuclear Nonproliferation	2,507,191	2,715,191	2,833,243	2,956,328

NONPROLIFERATION AND VERIFICATION RESEARCH AND DEVELOPMENT—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Nonproliferation and Verification R&D:			
Operations and Maintenance (O&M):			
Proliferation Detection	195,400	181,839	225,004
Homeland Security-Related Proliferation Detection [Non-Add]	[50,000]	[50,000]	[50,000]
Nuclear Detonation Detection	142,421	135,461	126,564
Subtotal, O&M	337,821	317,300	351,568
Construction	18,460	.....	.....
Total, Nonproliferation and Verification R&D	356,281	317,300	351,568

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Nonproliferation and Verification R&D:				
Operations and Maintenance:				
Proliferation Detection (PD)	182,614	183,549	189,696	202,962
Homeland Security-Related Proliferation Detection [Non-Add]	[50,000]	[50,000]	[50,000]	[50,000]
Nuclear Detonation Detection	133,327	134,009	138,498	148,183
Total, Nonproliferation and Verification R&D	315,941	317,558	328,194	351,145

NONPROLIFERATION AND INTERNATIONAL SECURITY—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Nonproliferation and International Security:			
Dismantlement and Transparency	47,529	72,763	49,207
Global Security Engagement and Cooperation	44,076	50,708	47,289
International Regimes and Agreements	40,793	42,703	39,824
Treaties and Agreements	17,602	21,028	19,610
Total, Nonproliferation and International Security	150,000	187,202	155,930

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Nonproliferation and International Security:				
Dismantlement and Transparency	50,832	52,155	53,602	57,351
Global Security Engagement and Cooperation	48,852	50,124	51,514	55,117
International Regimes and Agreements	41,141	42,210	43,383	46,417
Treaties and Agreements	20,258	20,786	21,362	22,856
Total, Nonproliferation and International Security	161,083	165,275	169,861	181,741

INTERNATIONAL NUCLEAR MATERIALS PROTECTION AND COOPERATION—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
International Nuclear Materials Protection and Cooperation:			
Navy Complex	30,316	33,880	34,322
Strategic Rocket Forces/12th Main Directorate	51,767	48,646	51,359
Rosatom Weapons Complex	76,070	71,517	105,318
Civilian Nuclear Sites	45,542	63,481	59,027
Material Consolidation and Conversion	21,560	13,611	13,867
National Programs and Sustainability	54,901	68,469	60,928
Second Line of Defense	174,844	272,446	265,297
International Contributions	[1] 5,592	.....	.....
Total, International Nuclear Materials Protection and Cooperation	460,592	572,050	590,118

[1] Fiscal year 2009 amount includes international contributions of $4,067,065 from Government of Canada, $387,335 from New Zealand, $837,600 from Norway, and $300,000 from South Korea.

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
International Nuclear Materials Protection and Cooperation:				
Navy Complex	31,764	.....	.....	.....
Strategic Rocket Forces/12th Main Directorate	37,830	.....	.....	.....
Rosatom Weapons Complex	52,000	.....	.....	.....
Civilian Nuclear Sites	18,502	.....	.....	.....
Material Consolidation and Conversion	14,306	14,627	14,627	16,433
National Programs and Sustainability	61,967	39,006	39,006	43,623
Second Line of Defense	354,429	508,157	504,859	563,614
International Contributions	.....	.....	.....	.....
Total, International Nuclear Materials Protection and Cooperation	570,798	561,790	558,492	623,670

ELIMINATION OF WEAPONS–GRADE PLUTONIUM PRODUCTION—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Elimination of Weapons-Grade Plutonium Production (EWGPP):			
Zheleznogorsk Plutonium Production Elimination (ZPPEP)	139,282	22,507	.....
Crosscutting and Technical Support Activities	2,017	2,000	.....
Total, Elimination of Weapons-Grade Plutonium Production (EWGPP)	141,299	24,507	.....

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Elimination of Weapons-Grade Plutonium Production	.....	.....	.....	.....

FISSILE MATERIALS DISPOSITION—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Current Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Fissile Materials Disposition (FMD):			
U.S. Surplus Fissile Materials Disposition:			
Operations and Maintenance (O&M):			
U.S. Plutonium Disposition	.....	90,896	278,940
U.S. Uranium Disposition	39,274	34,691	25,985
Supporting Activities	1,500	1,075	.....
Subtotal, O&M	40,774	126,662	304,925
Construction	.....	574,238	612,788
Total, U.S. Surplus FMD	40,774	700,900	917,713
Russian Surplus FMD:			
Russian Materials Disposition	1,000	1,000	113,000
Total, Fissile Materials Disposition	41,774	701,900	1,030,713

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Fissile Materials Disposition:				
U.S. Surplus Fissile Materials Disposition (O&M)	302,276	482,185	478,897	459,827
Construction	556,099	527,457	309,661	282,773
Russian Surplus Fissile Materials Disposition	1,000	1,000	1,000	1,000
Total, Fissile Materials Disposition	859,375	1,010,642	789,558	743,600

GLOBAL THREAT REDUCTION INITIATIVE (GTRI)—FUNDING PROFILE BY SUBPROGRAM [1]

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Global Threat Reduction Initiative:			
Highly Enriched Uranium (HEU) Reactor Conversion	76,706	102,772	119,000
Nuclear and Radiological Material Removal:			
Russian-Origin Nuclear Material Removal	123,083	94,167	145,191
U.S.-Origin Nuclear Material Removal	8,331	9,889	16,500
Gap Nuclear Material Removal	4,982	9,111	108,000
Emerging Threats Nuclear Material Removal	7,600	5,556	16,000
International Radiological Material Removal	21,702	8,333	45,000
Domestic Radiological Material Removal	17,063	17,778	25,000
Subtotal, Nuclear and Radiological Material Removal	182,761	144,834	355,691
Nuclear and Radiological Material Protection:			
BN–350 Nuclear Material Protection	50,977	9,109	2,000
International Material Protection	42,909	41,463	57,000
Domestic Material Protection	41,647	35,322	25,147
Subtotal, Nuclear and Radiological Material Protection	135,533	85,894	84,147
Total, Global Threat Reduction Initiative (appropriation)	395,000	333,500	558,838

GLOBAL THREAT REDUCTION INITIATIVE (GTRI)—FUNDING PROFILE BY SUBPROGRAM [1]—Continued

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Funds from International Contributions	9,640	.....	.....
Total, Global Threat Reduction Initiative Funds Available	404,640	333,500	558,838

[1] Fiscal year 2009 amount includes international contributions of $3,918,000 from the Government of Canada, and $5,722,212 from the United Kingdom of Great Britain and Northern Ireland.

OUT-YEAR FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Global Threat Reduction Initiative:				
HEU Reactor Conversion	176,000	210,000	245,000	293,000
Nuclear and Radiological Material Removal:				
Russian-Origin Nuclear Material Removal	96,000	70,000	82,000	83,000
U.S.-Origin Nuclear Material Removal	1,000	3,000	1,000	1,000
Gap Nuclear Material Removal	22,000	16,000	27,000	1,000
Emerging Threats Nuclear Material Removal	16,000	16,000	194,000	188,000
International Radiological Material Removal	44,000	39,000	10,000	10,000
Domestic Radiological Material Removal	31,000	31,000	33,000	34,000
Subtotal, Nuclear and Radiological Material Removal	210,000	175,000	347,000	317,000
Nuclear and Radiological Material Protection:				
BN–350 Nuclear Material Protection	2,000	.....	.....	.....
International Material Protection	100,000	125,000	130,000	143,000
Domestic Material Protection	111,994	149,926	265,138	303,172
Subtotal, Nuclear and Radiological Material Protection	213,994	274,926	395,138	446,172
Total, Global Threat Reduction Initiative	599,994	659,926	987,138	1,056,172

CONGRESSIONALLY DIRECTED PROJECTS—FUNDING PROFILE BY SUBPROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Congressionally Directed Projects	1,903	250	.....

NAVAL REACTORS—OVERVIEW—APPROPRIATION SUMMARY BY PROGRAM

[In thousands of dollars]

	Fiscal Year 2009 Actual Appropriation	Fiscal Year 2010 Current Appropriation	Fiscal Year 2011 Request
Naval Reactors Development:			
Operations and Maintenance (O&M)	771,600	877,533	997,886
Program Direction	34,454	36,800	40,000
Construction	22,000	30,800	32,600
Total, Naval Reactors Development	828,054	945,133	1,070,486

Public Law Authorizations

Public Law 83–703, "Atomic Energy Act of 1954" "Executive Order 12344" (42 U.S.C. 7158), "Naval Nuclear Propulsion Program".

Public Law 107–107, "National Defense Authorizations Act of 2002", title 32, "National Nuclear Security Administration".

John Warner National Defense Authorization Act for fiscal year 2007, (Public Law 109–364).

Fiscal Year 2008 Consolidated Appropriations Act (Public Law 110–161).

National Nuclear Security Administration Act, (Public Law 106–65), as amended.

Fiscal Year 2009 Consolidated Appropriations Act (Public Law 111–8).

Fiscal Year 2010 Energy and Water and Related Agencies Appropriations Act (Public Law 111–85).

OUT-YEAR APPROPRIATION SUMMARY BY PROGRAM

[In thousands dollars]

	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015
Naval Reactors Development:				
Operations and Maintenance	1,018,634	1,102,978	1,177,817	1,240,430
Program Direction	41,200	42,400	43,700	45,000
Construction	39,900	25,800	4,500	25,100
Total, Naval Reactors Development	1,099,734	1,171,178	1,226,017	1,310,530

Senator DORGAN. Mr. D'Agostino, thank you very much. Would you like to identify, for the record, those who are accompanying you today?

Mr. D'AGOSTINO. Yes, sir.

Mr. Steven Black, to my right, is going to be representing the nonproliferation program. Mr. Black has been the chief operating officer in—we call the NA–20 organization, and has been—essentially, has very deep knowledge of all levels of the program. And we're fortunate to be with him.

Admiral Kirk Donald, to my left, runs the naval reactors program; for many years, has demonstrated significant success in implementing these programs. It's really, quite an impressive organization.

And Brigadier General Gary Harencak, to my left, runs the defense programs activities. General Harencak joined our operation about a year ago—little less than a year ago. It's a great find for us, from the Air Force. It's the Air Force's demonstration of their commitment to these types of programs.

5 YEAR BUDGET ESTIMATE DETAILS

Senator DORGAN. Well, thank you very much for your testimony.

Let me ask a couple of questions of the type that I raised and Senator Bennett raised, as well. We have a 5-year out-year budget from NNSA that shows an average of about $300 million per year increase for NNSA needs. But, my understanding is that that budget doesn't include the current $3 billion estimated cost of the Chemistry and Metallurgy Research Facility replacement, at Los Alamos; the Uranium Processing Facility, at Y–12—that's expected to cost $1.4 to $3.5 billion; the Pit Disassembly and Conversion Facility at Savannah River—that's to cost between $2.4 and $3.2 billion.

My understanding is the cost estimates are not completed on those buildings, so they are not a part of your 5 year estimate. Is that right? Will the subcommittee expect to see higher cost estimates and more requirements for those three buildings?

Mr. D'AGOSTINO. The resources for the design work are in our FYNSP. We feel—we're limited, in providing a 5 year plan, sir. Most of these facilities will take, in many cases, 9 or 10 years to build. What we've looked at in the Department—to address the concerns, raised by you sir, as well as the Government Accountability Office, which has been very clear on how we want to move forward—is, it's important to spend more time up front in understanding what you're going to design before you commit to a cost—you know, what we call a "critical decision 2," which is a final cost, scope, and schedule that we say we sign our names up to.

So, what we have in the first few years of this future-year—5-year national security plan are our projections on what the out years might be. The real numbers are going to start coming in, in the years 2015, 2016, 2017, and 2018, as we get into the heavy construction pieces of those particular projects. So, in order to address the project management concern, which is a very valid concern, the Deputy Secretary recently issued a revised project management policy to address those specific points.

Senator DORGAN. I'm sorry to interrupt you, but let me just ask the admiral a question that is similar. We're talking about three facilities, each of which are going to cost probably close to a couple billion dollars each, rather $3 billion, potentially; $2 billion; $2.5 billion. So, three very large facilities that will be built over a long period of time.

Mr. D'AGOSTINO. Right.

Senator DORGAN. At the same time, my understanding is, that we're going to do three things, we're going to have three projects. One is developing a new reactor core for the Ohio-class submarine; refueling the prototype reactor in New York; and new spent-fuel facilities in Idaho. The first, I think is going to cost, I'm told, up to $1.5 billion; the second, $1.3 billion; the third, probably $1.3 or $1.4 billion. So, you're talking about three very large programs, here; three very large facilities. Then, I think we asked the question earlier, can you effectively do all these in reasonably the same period of time, effectively manage them, and, especially, control costs?

Mr. D'AGOSTINO. I believe the answer is, firmly yes, we can do that. We can do it because—for a number of reasons. In many cases, these are activities that have started already. They won't be starting from a zero stop and then going to full steam ahead. Well, all the facilities on the weapons side and operations side have started, already.

What we've realized on large projects is spending the right amount of money early on the design allows us to lock in and have a good understanding of the actual costs before we begin construction. So, we do—our 5 year plan does have the resources to do the design work that we think is absolutely critical. The last 2 years of the 5 year plan, for example, the years 2014 and 2015, show bump-ups of about $300 million in each of those years to address when we start to actually expect doing construction work, because we think that's when the dollars will be needed.

But, the important thing is that we haven't yet committed to the actual design cost schedule yet, because we haven't finished our design work. And one of the commitments in our policies is to do the design early. Once you have the design early—and we have authorization and appropriations to proceed—is to make sure that the President's request requests the right amount of money in each year—not try to shortchange those things. In the past, we've gotten into trouble, because it always seemed like a convenient pool to go to, to go solve other problems that come up throughout the year. And the commitment is that once the cost, scope, and schedule is understood on the project, we fund it.

I'd like to turn to Admiral Donald, who can talk a little bit about the naval reactors piece.

Admiral DONALD. Sure. Thank you very much. It's good to be here and thank you for the opportunity to appear before the subcommittee.

There are two points I would make about our ability to execute these significant projects. There are two that involve reactor design—the reactor plant design for the replacement for the Ohio-class, and then the reactor design that goes into the prototype up in New York for training and—or research and development. The third one, while not a reactor design, is similar, in the sense that it's a complex nuclear project that we would be undertaking.

The first point I would make to you, sir, is that we have a history of designing reactor plants. This would be the 30th—over the 30th reactor design that naval reactors has made. We've made over two dozen reactor plant designs that include the entire propulsion plant, over the history of the program, the most recent being the design of the reactor plant for the Gerald R. Ford class of aircraft carrier, which we're on schedule, all of our components are being delivered or are in delivery to the shipyard right now, on time, and on the budget that we had demonstrated, or we had planned for in the past.

These projects are very similar, in that regard, so I think—I am confident that we know how to do this. We understand what the difficulties are, what the challenges are, and we've carefully mapped those out.

The key, however, as we've learned, to success in these is, you have to get the design matured, as Mr. D'Agostino pointed out. History has shown that if you can get designs complete to about 40 to 50 percent, you have a very good opportunity—a very good chance of delivering on time and on budget. That's what we demonstrated in the Virginia-class submarine program. That's the target that we're going for now for these projects. And the key to that is the early upfront funding so that we can do the design, the concept development, and be prepared to start construction.

ENSURING CONTRACT COMPETITION

Senator DORGAN. All right. Last year, we expressed some concern in this subcommittee about the sole-source awarding of target production for the NIF and other laser facilities, which we indicated we felt was inconsistent with policy guidelines. With the cost of target production expected to increase significantly, competition will be needed to lower costs and to spur innovation. We believe the

NNSA's recently released request for information to award a new contract is more oriented toward one contractor. We've also had complaints about that, as well.

To what extent, if you can tell me, Mr. D'Agostino, does the request for information preclude multiple vendors from effectively competing for the contract?

Mr. D'AGOSTINO. Mr. Chairman, we're very much interested in competition across a broad range of activities. I'm not aware of any complaints, but I'd be happy to make sure we take a look at that.

If our request for information appears to be focused to a single contractor, that was an oversight on our part. We'll have to—I'll take a look into that and get back to the subcommittee.

Senator DORGAN. All right because it seems to me, especially on these kinds of projects, the more you can get contractors involved in competition, the lower you're going to experience pricing on these major contracts.

JASON'S REPORT

Mr. D'AGOSTINO. Yes, sir.

Senator DORGAN. Let me just ask, on the issue of nuclear weapons design, my understanding is that the plan is to modify the design of nuclear weapons. Reconcile that, if you would, that is the need for changes, with JASON's conclusion, in its 2009 report, that the lifetimes of today's nuclear warheads could be extended for decades without significant changes to their design and without any significant deterioration.

Mr. D'AGOSTINO. Right.

Senator DORGAN. So, can you tell us how you see the JASON's report—related to the discussions about changing design?

Mr. D'AGOSTINO. Absolutely, and at the end, if General Harencak wants to join, if it's okay——

Senator DORGAN. All right.

Mr. D'AGOSTINO [continuing]. We'll ask him to do it. I'll—I can't start off on that.

The JASON's report, the unclassified executive summary, basically talked about: If we don't want to improve the safety, if we don't want to improve the security, if we don't want to improve the reliability, and just keeps things the way they are and have cold war nuclear weapons, they felt, "just keep making things the way you used to make them."

There's a couple—okay. I'll take that statement.

Senator FEINSTEIN. That's not what it says.

Mr. D'AGOSTINO. It's—it talks about——

Senator FEINSTEIN. I have it in front of me.

Mr. D'AGOSTINO [continuing]. We can maintain, out into the future——

Senator FEINSTEIN. Excuse me.

Mr. D'AGOSTINO. Yes. Well, I don't have it in front of me right now, but if it says we can—I think it says, we can maintain, out into the future, using current life-extension approaches——

Senator FEINSTEIN. Yes.

Mr. D'AGOSTINO [continuing]. To safety, security——

Senator FEINSTEIN. That's right.

Mr. D'AGOSTINO. I think—what I'm interested in—there's a couple of problems with what I would say, to this high-level summary statement. One is, in many cases we can't make things the way we used to make them 30, 40 years ago. We just don't have the people; we don't have the processing techniques; many of the chemicals, and many of the materials that were used back then are prohibited from us for being able to use them; they have grave environmental damages and a very expensive infrastructure to be able to build that stuff. And so, I'm thinking about—decisions that get made now are going to have long-term impacts. These are, like, multi-decade facilities, so why would I want to, kind of, lock in the way we used to make things, when you know, we've progressed a lot in manufacturing approaches and we know a lot more about material, and the damage that beryllium does, and acetyl nitrate does. These are specific components.

Because those have costs, those have real costs, and they have long-term costs in dollars and in people—so, the approach is: In order to overcome the problem that we have in manufacturing, that there are different ways to do business. In order to address what I would say is 21st century security problems and 21st century safety approaches and not lock in the way we did safety, 30 years ago. There are features that we can put inside of these devices that will essentially make them safe.

And I think that would be my approach.

Senator DORGAN. I want to call on my colleagues in a moment, but my understanding was, in this discussion, which was RRW and this discussion had a number of components.

My understanding was that, for some while, there was a belief that pit degradation would mean that we would not have reliability of our nuclear deterrent, and therefore, a new class of nuclear weapons was required. The JASON's report, I think, among other things, has indicated, "No, that worry about degradation is not a concern." They believe that these nuclear weapons will be reliable, well out into the future.

And your point about designing safety, I understand.

Mr. D'AGOSTINO. Yes.

Senator DORGAN. But, my point is that the design changes originally were driven by a notion that you would have a degrading of the deterrent, and therefore, you had to replace them. I think the JASON's report is at odds with that. So, that was what I was trying to ask.

Mr. D'AGOSTINO. Okay.

Senator DORGAN. Let me call on my colleagues for questions.

Senator Bennett.

INDEPENDENT COST ESTIMATES

Senator BENNETT. Thank you very much.

Again, the chairman has talked about many of the things that I want to talk about. Let's discuss the whole issue of independent cost estimates.

Senator Alexander and I sent a letter to Secretary Chu last month to request the Department to obtain an independent cost estimate for the UPF Facility. He has not responded. Were you aware of that request?

Mr. D'AGOSTINO. Yes, sir, I'm aware of that request.

Senator BENNETT. And, as part of your reforms for contracts and project management, do you like the idea of independent cost estimates?

Mr. D'AGOSTINO. I absolutely love the idea. I think it's a great idea. We have to have it, and we have to do it much more frequently than we've done in the past. The policy the Deputy Secretary signed out last week on project management will require independent cost estimates more frequently, particularly at the critical decision points. So, before the Department would propose, in a budget request—that the President proposes in the budget request to Congress, on a critical decision—we would have an independent cost estimate, outside of my organization, to go validate that—you know, check independently that we have a good understanding of what the project's going to cost. There are a couple of other pieces to that, as well, that I'd be willing to describe, on project management.

Senator BENNETT. That means you'll have a solid cost estimate and schedule for each one of the multiple projects I described in my opening statement?

Mr. D'AGOSTINO. Yes, sir. We will—the key is, providing that solid cost estimate and schedule when we have the data to say we actually understand it. And, as Admiral Donald said, an example of this new policy will require much more significant design maturity then we've ever had in the past on these projects. What I'm looking at, in the NNSA for example, is to try to get as close as possible to 90 percent design maturity before we go off and authorize the construction of an activity, because then we will have a good idea—we will say, "We absolutely know what this design is." We've run down all of the technology readiness-level issues that typically come up and bite you if you don't—if you try to get started too soon. So, that's an element of this——

Senator BENNETT. Okay.

Mr. D'AGOSTINO [continuing]. Design maturity.

Senator BENNETT. Yes. I outlined the series of things that you're trying to do simultaneously——

Mr. D'AGOSTINO. Right.

Senator BENNETT [continuing]. Plus the two life-extension programs. Now, does the activity we need to do on the life extension programs hinge on the timely completion of the other four projects?

Mr. D'AGOSTINO. Two of the projects are nonproliferation projects. So, there's a clear answer to "no"—no, on that activity. The two life-extension programs in question are the W76 and the B61. The W76 work, General, is underway right now, we're into production mode on that, so it doesn't hinge on the completion of those projects. The B61 work is—particularly in the first few years, we're in the design maturity stage of the study, and then we'll come back and request authorization to actually proceed with the production. So, it doesn't hinge directly on that, because the idea is to get—when is the date for the B61, Gary?

General HARENCAK. By 2017, sir.

And, if I might——

Mr. D'AGOSTINO. Yes.

General HARENCAK [continuing]. Make a point about our life-extended—while we will have a time where there are dual life-extended—the way it's laid out is, the majority—overwhelming majority of the work will be done for the W76 as we start the core of the majority of the work of the B61. And then, that would be completed, should we need to do any other life-extensions time. So, while certainly on paper you're doing two life extensions, we've already de-conflicted the major facilities with that, our workforce and its plan to complete the W76 on time, on schedule, prior to the main heavy lifting that'd be required for the B61 in our production facilities.

PIT DISASSEMBLY AND CONVERSION FACILITY

Senator BENNETT. When do you anticipate requesting funds for the Pit Disassembly and Conversion Facility? And do you have any idea what the full cost is likely to be? Is that included in your 5-year budget, or is that something we can expect at some future time?

Mr. BLACK. The cost of the Pit Disassembly and Conversion Facility will be determined after we do some study. You may know that the Deputy Secretary decided, this past fall, to direct the Department to explore the possibility of combining the original standalone Pit Disassembly and Conversion Facility, which you've been discussing, with an existing project to deal with non-pit plutonium at Savannah River, that's currently run by the Office of Environmental Management, EM. So, we formed a working group with EM—an NNSA–EM working group—to evaluate what the possibilities are to combine these two projects. And part of the reason we're doing this is because the working group that was already stood up felt that there were a number of potential advantages to combining them; in particular, cost avoidance. We can't promise that, but initially it looks like we might be able to avoid the cost of building a new facility, because we would use the shell of the old K-Reactor, which currently exists, rather than building a new one. We would also avoid the costs of decontaminating and decommissioning a second category-1 facility at the end of the mission. And we might be able to smooth out such things as transportation costs, in terms of shipping pits from Pantex to Savannah River, and the like. So, there's a variety of ways that we might be able to avoid some costs and come in with a project that will actually satisfy both missions. But, we're not at CD1 yet. We don't have a cost estimate, and we expect that it will take 12 to 18 months. So, we would imagine, perhaps by the end of fiscal year 2011, we would be able to come in with a more reasonable—a more specific cost estimate and proposal.

Senator BENNETT. So, you have nothing in your 5 year budget now.

Mr. BLACK. Not right now, no. We have funds that were transferred from the Pit Disassembly and Conversion Facility that came over from another part of the budget, when it was reconfigured and realigned this year. And that funding will be used to continue work that would need to be done, irrespective of which path we take on the building. Whether we do the pit disassembly and conversion functions in the K Area, in the K-Reactor, or whether we do it in

a standalone facility that we build, we're still going to have to have glove boxes and hot cells and process equipment and the like. So, we're continuing to do the work and the long-lead procurement that would be required to do this mission. The mission has to be done. The question is whether we do it in this kind of a facility or that kind of facility. And, we feel that we can save some money in the long run if, as the Administrator said, we can do more complete design work over the next 12 to 18 months, and come back to you and to the Secretary with another estimate.

PROPOSED BUDGET ALLOCATIONS

Senator BENNETT. Okay. Now, in spite of all of the talk about the top line going up so dramatically, your request for day-to-day operations is down 7 percent, or $1.3 billion. And can you talk about that—why there's the decrease in this area? Was this a tradeoff as you negotiated with OMB? I've negotiated with OMB. And, while administrations come and go, and change, OMB always remains the same, it seems to me, and always difficult when you're in a department or an agency and trying to deal with them. You're forced to make budget cuts to deal with the other activities that go in the areas we've talked about our support for? I know that's a very blunt question, and you——

Mr. D'AGOSTINO. Yes, sir.

Senator BENNETT [continuing]. Probably can't give me a blunt answer, but hint around at it as best you can.

Mr. D'AGOSTINO. Senator Bennett, every year, there will be changes to our budget. And in many cases the message that I've been working to drive over the past few years is we have to continue to look at ways to be more efficient. There are always ways, I believe, to be more efficient. I believe there continue to be ways to be more efficient. We have to do it, for a number of reasons; obviously, healthcare costs and benefits and things like that, which impact all of us, are part of that. The area that I'm most particularly concerned about is our—you know, what I call some of the physical infrastructure.

And I want—well, I have a meeting with the board of governors, actually, for two of our laboratories, Los Alamos and Livermore, this afternoon. I'm going to emphasize that this budget looks like great news, and it's important, because the country recognizes what's important, but we have to sharpen our pencils and reduce the fixed costs of doing our work in the enterprise. I believe there are more opportunities there. It certainly presents some challenges in maintenance of old facilities. I will readily admit that. You know, Brigadier General Harencak knows about this; he can probably add some detail to what I'm saying.

But, in general, I'm always going to push to drive efficiencies and try to get out of those facilities that we don't need and to take them down, because they do add to the fixed costs. I support the President's budget, of course. There will always be program managers in my organization that would like more, in order to do more. But, I try to look at it, not just—well, look at what's an increment from what we had last year, but what's in the base of what we had last year that we can try to get out of the program. In this program—or, the request that we have before us reflects some of my leanings

toward looking into the base of the program and trying to drive those costs down.

Will it cause problems out there? Yes, because change is always hard. I think there will be challenges. There'll be some folks out in the field that'll say, you know, "I need more and more—I need more." But, I think, in order to change from this kind of large cold war nuclear weapons complex, to an efficient, trim nuclear security enterprise that addresses not just weapons, but all these other areas, that's a necessity.

General, would you want to add?

General HARENCAK. Yes, sir. I——

Mr. D'AGOSTINO. Feel free to disagree with me, as well. So——

General HARENCAK. Well, sir.

Mr. D'AGOSTINO. I mean, you're testifying, not me.

General HARENCAK. I will not disagree with you. What I will say, though, is a caveat, perhaps——

Mr. D'AGOSTINO. Yes.

General HARENCAK [continuing]. That we still, even with this much needed budget increase—and, you know, last year, I believe, the testimony was—I told you that we could not sustain this enterprise. My best military advice was—I was new to the enterprise and—we could not sustain it with the type—with the number of resources we had. This goes a long way, obviously, to fixing those problems and doing the work that we have to do.

That being said, all budgets are going to have some areas that need, perhaps, still a little bit more attention. Facilities, is one, readiness and testing are some others.

We do believe, though, that we could internally—through the great efforts of Mr. D'Agostino and all the great Americans that work in this organization that are trying to turn this into a 21st century nuclear security enterprise—that we can make some internal adjustments, and we're working it. As we speak right now, our best—some of our best people are meeting to look at how we're going to, internally, specifically in defense programs, fix some of the short-term concerns that we have, specifically where it comes to some facilities.

We're confident that, as an enterprise, we're all going to work together, and we're going to say, "Hey, perhaps we can move some work here, we can move some money here to fix those."

So, I'm not going to sit here and tell you that we absolutely have no problems with this budget, that there's—you know, we got everything we need, but I will tell you we are aggressively managing those areas; we'll do what's necessary in the coming years to adjust and, when we come back to you, say, "Hey, perhaps now—in retrospect, we should've put *x* number to this facility, and we're going to adjust those." But, overall, as Mr. D'Agostino said, we are absolutely committed to making this organization more efficient, more responsive.

And, along those ways, since I have the opportunity, if you don't mind, I certainly agree that, in the past, our management of some projects has not been sterling. I mean, there's no other way around that. But, you have a team in place now that Mr. D'Agostino has put into place, that is—job one is to fix that. And, while certainly we could come up with things that we have done wrong in the past,

I also point to some things that we are doing extremely well now and—because we do have the capacity to learn, and we're demonstrating that.

Certainly, the NIF project, this is an incredible success story. While, granted, it had problems in the past, long before our time here, it's now incredibly well run and it's making great, great positions.

KCRIMS is another example where we've taken, in a very complex thing, which is moving an in-operation plant to a much more efficient, much more cost effective, much more a green place, if you will. And we're doing that superbly, I believe, because we've instituted a formal risk-management process, where we're identifying the sources of risks, assessing those risks, but, more importantly, looking at how that affects overall project performance, and coming up with alternatives, real time, to fix it. And the KCRIMS program is a perfect example of contractors and Feds working together to actually produce a project on time and on schedule.

And so, I just offer that up to you, sir, that we are aggressively working on how to manage projects correctly.

NUCLEAR NONPROLIFERATION

Senator BENNETT. Okay. Thank you. Let me go, my last question, in the other direction. You want to secure all the vulnerable nuclear material around the world within 4 years and the budget increase has gone up 68 percent. This is one very heavy increase. And I've learned, in my business world, it's tough to deal with a cut, and sometimes it's even tougher to deal with an increase. And do you have the capacity to execute these funds in fiscal 2011, let alone significant increases of up to a billion dollars over the 5 year project plan?

Mr. BLACK. Sir, I would say that we do have the ability to get this mission done. If I may, the President laid out a very ambitious agenda for us last April, and again in the State of the Union Address. We're not the only part of the solution of this problem, though; he said, "This is work for the world," so we have international partners and we have interagency partners.

The portion of the task that we have essentially carved out for ourselves is the part that is consistent with our expertise, our authorities, and the budget that we believe we can manage. And so, we've requested the amount that we think we can use effectively. We are looking to commit all of the money, for the fiscal year 2011 work that we've requested in the budget, and we believe we can do it, for several reasons. One is we are much better staffed this year than we were at this time last year. Last year at this time, we had an 83-percent staffing rate, 17-percent vacancy rate. And we have dropped that now to a 5 percent vacancy rate. We have a lot more Feds on board. These are young, energetic people who have experience working overseas. They speak the language, they know the culture, and they're certainly enthusiastic about the mission, and they know they have the support of both ends of Pennsylvania Avenue.

We've also put in place contracts and vehicles, such as the IDIQ, the indefinite delivery/indefinite quantity contract that supports our GTRI work, Global Threat Reduction Initiative work, and a

DICCE contract that will help us execute work in second line of defense. These two contract vehicles make it possible for us to contract out work overseas and greatly simplify what is otherwise a very complicated and long process to getting work done in other countries.

And we've done a very good job with our uncommitted balances, as well. The last 5 years, despite an increase in our overall nonproliferation budget, every year—our uncommitted balances have come down every single year. And the last 4 years, our balances have been under the 13-percent departmental threshold for uncosted balances. So, in particular, in the two programs that have to bear the greatest brunt of the burden for the 4-year plan, what we nominally call the 4-year plan, Global Threat Reduction and MPC&A, those two programs' uncommitted balances have come in under 9 percent. They're very well positioned to make good use of the funds that we are requesting. So, on balance, we feel that we're committed and able to execute this work very effectively.

Senator BENNETT. Thank you very much.

Senator FEINSTEIN. Thank you. Thank you very much.

Senator Bennett, good to see you again.

And, Mr. D'Agostino, good to see you again, I want to say that you have always been a straight-shooter with me. I very much appreciate that. You spent several times briefing me on the RRW. We did not see, with the same eyes, the same thing, and I found myself opposing the nuclear bunker buster, the advanced weapons concepts, the new plutonium pits, and the RRW. And I just want to say why.

I strongly believe that the United States of America should not be a nuclear proliferator. And when I sat down with Sid Drell on the bunker buster and on the laws of physics and what would happen if one of these things exploded, I couldn't believe that my country was proposing it. And so, I have begun to look very critically at weapons programs. And, of course, what I find is that Russia and the United States have a huge arsenal, which is in the process, through START and hopefully through the Comprehensive Test Ban Treaty, of being weaned down and better controlled over the years so that there is the kind of information, on both sides, about what the other side does that gives true mutual deterrence some real credibility.

I'd like to ask the clerk that the 4 pages of the September 9, 2009, JASON report be included in the record.

[The information follows:]

LIFETIME EXTENSION PROGRAM (LEP)—EXECUTIVE SUMMARY

1 EXECUTIVE SUMMARY

1.1 Study charge

This study of the Life Extension Program (LEP) for deployed U.S. nuclear weapons responds to the following charge.

"NNSA requests that JASON study LEP strategies for maintaining the U.S. nuclear deterrent in the absence of underground nuclear testing. This should include:

—"Study the certification challenges associated with changes, to include accumulation of changes, made to a warhead [1] during its life.
—"Compare the assessment and certification challenges of different LEP strategies ranging from refurbishment to replacement.
—"Study proposed methods to measure the evolution of risk due to multiple changes during warhead life and initiated in LEPs.
—"Study how NNSA can mitigate risks while maintaining a safe, secure and reliable nuclear deterrent. Comment on how the overall balance and structure of science, technology, engineering and production activities can be made to minimize future risk to the stockpile.
—"Study the accumulated risks and uncertainties of the current Life Extension Program strategy. As already identified by a previous JASON study, risk areas include:
  —"Linkage to UGT data,
  —"Manufacturing changes that may unavoidably result in differences from the as-tested devices,
  —"Increased surety [2] features, and
  —"Thresholds to failure."

NNSA provided the following definitions:

"*Refurbishment (current implementation of LEP)*.—Very generally, individual warhead components are replaced before they degrade with components of (nearly) identical design or that meet the same 'form, fit, and function.'

"*Warhead Component Reuse*.—Refers specifically to the use of existing surplus pit and secondary components from other warhead types. Approach may permit limited warhead surety improvements and some increased margins.

"*Warhead Replacement*.—Some or all of the components of a warhead are replaced with modern design that are more easily manufacturable, provide increased warhead margins, forego no longer available or hazardous materials, improve safety, security and use control, and offer the potential for further overall stockpile reductions."

1.2 Findings

JASON was asked to assess the impacts of changes to stockpile warheads incurred from aging and LEPs. In response:

—JASON finds no evidence that accumulation of changes incurred from aging and LEPs have increased risk to certification of today's deployed nuclear warheads
  This finding is a direct consequence of the excellent work of the people in the U.S. nuclear weapons complex supported and informed by the tools and methods developed through the Stockpile Stewardship program. Some aging issues have already been resolved. The others that have been identified can be resolved through LEP approaches similar to those employed to date. To maintain certification, military requirements for some stockpile warheads have been modified. The modifications are the result of improved understanding of original weapon performance, not because of aging or other changes. If desired, all but one of the original major performance requirements could also be met through LEP approaches similar to those employed to date.
—Lifetimes of today's nuclear warheads could be extended for decades, with no anticipated loss in confidence, by using approaches similar to those employed in LEPs to date.
  The report discusses details and challenges for each stockpile system.

For each warhead, decisions must be made about including additional surety features. Findings regarding surety features are:

—Further scientific research and engineering development is required for some proposed surety systems.
—Implementation of intrinsic [3] surety features in today's re-entry systems, using the technologies proposed to date, would require reuse or replacement LEP options.
—All proposed surety features for today's air-carried systems could be implemented through reuse LEP options.
—Implementation of intrinsic surety features across the entire stockpile would require more than a decade to complete.

Concerning methods for assessing evolution of risk and assessing the effects of multiple changes to a weapon, we find that:

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[1] In this study "warhead" refers to the nuclear explosive package and associated non-nuclear components.
[2] Surety encompasses safety, security and use control.
[3] i.e. inside the nuclear explosive package.

—The basis for assessment and certification is linkage to underground test data, scientific understanding, and results from experiment.
—Quantification of Margins and Uncertainties (QMU) provides a suitable framework for assessment and certification.
—Increased scientific understanding enables reduced reliance on calibration, enhanced predictive capability, and improved quantification of margins and uncertainties.

Regarding certification challenges for LEP strategies ranging from refurbishment to replacement, we find that:

—Assessment and certification challenges depend on design details and associated margins and uncertainties, not simply on whether the LEP is primarily based on refurbishment, reuse, or replacement.

Concerning the overall balance and structure of science, technology, engineering and production activities, and how to mitigate risk to the stockpile, we find that:

—Certification of certain reuse or replacement options would require improved understanding of boost.
—Continued success of stockpile stewardship is threatened by lack of program stability, placing any LEP strategy at risk.

Surveillance of stockpile weapons is essential to stockpile stewardship. Inadequate surveillance would place the stockpile at risk. We find that:

—The surveillance program is becoming inadequate. Continued success of stockpile stewardship requires implementation of a revised surveillance program.

We conclude this section with a concern. All options for extending the life of the nuclear weapons stockpile rely on the continuing maintenance and renewal of expertise and capabilities in science, technology, engineering, and production unique to the nuclear weapons program. This will be the case regardless of whether future LEPs utilize refurbishment, reuse or replacement. The study team is concerned that this expertise is threatened by lack of program stability, perceived lack of mission importance, and degradation of the work environment.

1.3 Recommendations

Our recommendations are as follows:

—Determine the full potential of refurbishment, as exemplified by LEPs executed to date, for maintaining or improving the legacy stockpile.
—Quantify potential benefits and challenges of LEP strategies that may require reuse and replacement, to prepare for the possibility of future requirements such as reduced yield or enhanced surety.
—Strengthen and focus science programs to anticipate and meet potential challenges of future LEP options, including challenges associated with boost and surety science.
—Revise the surveillance program so that it meets immediate and future needs.
—Assess the benefits of surety technologies in the context of the nuclear weapons enterprise as a system, including technologies that can be employed in the near term.

NATIONAL LABORATORY PERSONNEL

Senator FEINSTEIN. And I want to just read, quickly, the finding, one of them, "JASON finds no evidence that accumulation of changes incurred from aging and LEPs' lifetime extension have increased risk to certification of today's deployed nuclear warheads." And it goes on to say that, "The finding is a direct consequence of the excellent work of the people of the nuclear weapons complex, supported and informed by the tools and methods developed through the Stockpile Stewardship Program. Some aging issues have already been resolved. The others that have been identified can be resolved through LEP approaches similar to those employed to date." And, it goes on, and then it makes the statement, categorically, "Lifetimes of today's nuclear warheads could be extended for decades with no anticipated loss in confidence, by using approaches similar to those employed in LEPs to date."

Now, what I'd like you to do, because you've raised the question several times with me, on beryllium and other things that are a hazard to the workforce, I'd like to get together with some of these

technical JASONs, with you, and really explore that one issue. None of us want to put workers in danger——

Mr. D'AGOSTINO. Right.

Senator FEINSTEIN [continuing]. Of working around these warheads with chemicals in them that are highly toxic or are highly destructive. So, I want to understand that part of the issue better, if you would agree to that.

Mr. D'AGOSTINO. Absolutely, Senator. That would be great.

Senator FEINSTEIN. Thank you. The other thing that I've had occasion to do is visit the—some of the labs. And I would like to sit down with you on what you see the future mission of our labs to be——

Mr. D'AGOSTINO. Right.

Senator FEINSTEIN [continuing]. And particularly now that the private sector is heavily involved, and with some considerable cost, that has forced the layoff of nuclear scientists in large numbers at Los Alamos and in the other labs, as well. So, if we could have that meeting, as well, I would appreciate it very much.

Mr. D'AGOSTINO. That would be great, Senator, I'd love to.

Senator FEINSTEIN. Okay.

Mr. D'AGOSTINO. Thank you.

NATIONAL IGNITION FACILITY

Senator FEINSTEIN. Now, I want to talk about the NIF, if I might, a little bit. I had the pleasure of going.

Mr. D'AGOSTINO. Right.

Senator FEINSTEIN. And, as you know, it's a very impressive——

Mr. D'AGOSTINO. Right.

Senator FEINSTEIN [continuing]. Plant. And the prototype for a fission nuclear powerplant was obviously there and was mentioned by people who were briefing me. It's also my understanding that the National Academy of Science, and the National Academy of Engineering, are conducting a study on inertial fusion energy.

Mr. D'AGOSTINO. Right.

Senator FEINSTEIN. And the question is, whether this facility has the resources to provide the Academy with support and collateral information.

So, my question is this. I am told that the NIF will not have funding to operate the facility, 24/7, that it is being reduced to 16 hours a day, 5 days a week, which obviously limits the type of research it can do. So, here's the question. Do you believe that Lawrence Livermore would need additional funding to develop a baseline design for the technologies required to translate successful demonstration of ignition, on NIF, into a practical powerplant for supplying sustainable, carbon-free baseload electricity?

Mr. D'AGOSTINO. Our program does not have—first of all, we don't have a baseline level of funding to do that, to convert what could come out of the NIF Facility into a powerplant. That is not part of our budget. However, the key on NIF is, get to ignition first, because that is the most important thing, for a number of reasons you pointed out—potential energy benefit—there's a tremendous scientific benefit that that draws. I mean, being able to explore what happens to the materials under these extreme pressures and temperatures will be important, not just for weapons physics, but

also for basic science. And third, we believe it's critical to get to ignition in order to effectively be able to provide that proof test on the stockpile itself. It will allow us to solve some very specific problems, that we can describe in a classified setting.

But, the budget that we have before us doesn't have an aggressive inertial fusion energy component, as it's laid out before you. What we are doing, though, because—as we've committed to Congress for close to a decade now—is to conduct a credible ignition experiment this year. And "credible" means that we have no reason to believe it's not going to work. So, we're going to do that this year. And what we are working very closely on is that work plan once you achieve this, just, unbelievable scientific milestone—is both the scientific work that has to lay out—layer out on top of that to explore that energy pipeline that could potentially come out of this facility.

Senator FEINSTEIN. Is that included in the $481 million——

Mr. D'AGOSTINO. The——

Senator FEINSTEIN [continuing]. Amount.

Mr. D'AGOSTINO. The $481 million piece is to support the types of experiments—stockpile stewardship experiments that we need to have in order to make sure it addresses the science and the stockpile part of the NIF facility. There are components of that——

Senator FEINSTEIN. Is that a yes, or a no?

Mr. D'AGOSTINO. So, it's—no, it does not include inertial fusion energy—an aggressive inertial fusion energy program right now. What I will say is the Under Secretary for Science, Steven Koonin and I have talked about, you know, "This is a big deal, this National Ignition Facility. How do we look at this, as a department—not just as NNSA, but as a department—to address the energy piece of that?"

Senator FEINSTEIN. Yes, so was fusion energy.

Mr. D'AGOSTINO. Right. And the fusion energy sciences group in the basic science area—we do have an international commitment on the ITER project, out in France. But, we recognize that ignition changes lots of things; success at Livermore changes lots of things. So, we're going to be looking very closely at, how does the Department bring the Office of Science and the NNSA together in a way that can capitalize on this tremendous capability? We literally had the meeting——

Senator FEINSTEIN. So——

Mr. D'AGOSTINO [continuing]. Yesterday.

Senator FEINSTEIN [continuing]. What does that mean, in terms of this year and the budget? If I understand you, you're saying we can't do it under the $481 million.

Mr. D'AGOSTINO. Well ma'am, no, no I think—you've got it—the $481 million gets us to that first milestone.

Senator FEINSTEIN. The first test?

Mr. D'AGOSTINO. That gets us to the test and running experiments. Because there's no way that, you know, inertial fusion energy makes any sense at all if you can't get to ignition and you can't understand it better. And so, the $481 million a year, plus whatever the year-by-year, goes out on that—I don't know if I have the specifics in front of me here—will actually operate that facility, will exercise our scientists, will prove ignition works, will address

stockpile stewardship problems. And in order to do the component that we're all interested in, as well, this energy piece, which I think has the great potential, we have to put together a program on top of that. But, to say we know what it's going to be, on—for energy purposes, right now, is—it's just way too early, because we haven't achieved ignition yet.

Senator FEINSTEIN. So, this cutback on hours for operation of the lab, how does that help achieve what you're trying to achieve?

Mr. D'AGOSTINO. I wasn't aware of a 24/7 versus a 5/16. I'm going to look into that——

Senator FEINSTEIN. Okay.

Mr. D'AGOSTINO [continuing]. Though, after this testimony——

Senator FEINSTEIN. Right.

Mr. D'AGOSTINO [continuing]. And try to get a better—I'll get an——

Senator FEINSTEIN. Could——

Mr. D'AGOSTINO [continuing]. Answer——

Senator FEINSTEIN [continuing]. You let me——

Mr. D'AGOSTINO [continuing]. To that.

Senator FEINSTEIN [continuing]. Know?

Mr. D'AGOSTINO. Absolutely.

Senator FEINSTEIN. I'd appreciate that——

Mr. D'AGOSTINO. Yes, ma'am.

Senator FEINSTEIN [continuing]. Very much. Let me see——

Mr. D'AGOSTINO. Yes. I'd like——

Senator FEINSTEIN [continuing]. What else——

Mr. D'AGOSTINO [continuing]. To do that.

Senator FEINSTEIN [continuing]. Because—when I went to the lab and actually looked and actually talked to people there, you know, the spark that's just turned on. I mean, "What if"——

Mr. D'AGOSTINO. Right.

Senator FEINSTEIN [continuing]. "It's possible?"——

Mr. D'AGOSTINO. Right.

Senator FEINSTEIN [continuing]. Is a very thrilling "what if."

Mr. D'AGOSTINO. Yes.

Senator FEINSTEIN. So——

Mr. D'AGOSTINO. Yes, ma'am.

Senator FEINSTEIN [continuing]. I think it's worth pursuing to see whether it's possible or not.

Mr. D'AGOSTINO. We'll do that. And I think it may be worth—if you're amenable to both Under Secretary Koonin and I giving you a full-up integrated response on this question of inertial fusion energy, and NIF, and what does it mean in the out years—we'll write that up, as well as—we'd be happy to come up and talk to you or members of the staff—subcommittee staff.

Senator FEINSTEIN. All right. It just—bottom line, my interest, on the military side, is really to see that we do not become proliferators——

Mr. D'AGOSTINO. Right.

Senator FEINSTEIN [continuing]. That we, by our actions, do not give anyone else the ability to develop new nuclear weapons.

Mr. D'AGOSTINO. Yes, ma'am. That's right. And the great thing about NIF is, it allows us to test—excuse me—to test the small

components in a laboratory, and not do underground testing. That's why we——

Senator FEINSTEIN. That's right.

Mr. D'AGOSTINO [continuing]. That's why we want the NIF.

Senator FEINSTEIN. That's right.

Mr. D'AGOSTINO. So, we want to stay away from this question of underground testing, as far away as we can.

Senator FEINSTEIN. Great. Thank you very much.

Mr. D'AGOSTINO. Thank you, ma'am.

Senator FEINSTEIN. Thank you, gentlemen.

Thanks, Mr. Chairman.

NUCLEAR NONPROLIFERATION

Senator DORGAN. Senator Feinstein, thank you very much.

Let me ask a question that I referred to briefly in my opening statement, and it is about the sums of money that we spend on security upgrades and radiation detection equipment, for example, in Russia and other countries. What happens after we withdraw? We make the investment, we help that country provide some additional security, and then we withdraw. What kind of concern do we have about sustaining these upgrades? Can you give me some notion of where we are on that?

Mr. D'AGOSTINO. Sure. Why don't I start, and then I'll ask Mr. Black to provide some additional detail.

This question of sustainability of security upgrades has been on the forefront, particularly as we get closer to completing our overall job in Russia, at least from the implementation standpoint. The job is never really going to ever end, because it will require, just like any type infrastructure investment, constant observations and looking at it, the like.

The fiscal year 2011 request that you have in front of you gets us to finishing the installation. I believe we have 19 more sites. We're about 92 percent done in Russia with, kind of, that baseline plan.

Senator DORGAN. Can you describe to me what you're doing at a site; just generally.

Mr. D'AGOSTINO. It will involve—generally, it involves doing a security assessment, with the Russians, of what's required at a particular site, what the vulnerabilities are, whether there's an insider threat or whether we have an external physical security threat; and then working with them to design upgrades, whether they're cameras, fences, you know, technology, and integrating those; and purchasing that and then working with them to install.

Steve, do you want——

Senator DORGAN. These are the production sites, right?

Mr. D'AGOSTINO. Well, I wouldn't call them "weapons production sites." We don't have access to those, just yet. But, the material sites, yes.

Senator DORGAN. Weapon materials.

Mr. BLACK. Right. These are all in the—in what's called the Rosatom Weapons Complex. We're working at seven large facilities right now, as the Administrator said; 19 buildings, in particular. And the sorts of things we're doing is increasing the strength of doors; we're putting in central alarm stations; we're putting in

PIDASs, Perimeter Intrusion Detection Alarm Systems, helping strengthen guard forces, reactive forces, and the like. Those are fairly typical security upgrades.

And, in terms of sustainability, what we are doing is, we are turning over—developing, with each site individually, individualized sustainability plans, because some of these sites have their own revenues. They may be factories and they produce other things for the Russian economy, and they may have their own revenue stream. But, in some cases, these facilities don't have enough budgets. And so, what we're trying to do is develop with them a clear understanding of all of the things that are needed to maintain that security investment at that particular site, so each site has its own joint sustainability plan, there are specific milestones, and we're working with the Russians to make sure that they develop regulations——

Senator DORGAN. What is the number of sites?

Mr. BLACK. Total?

Senator DORGAN. Yes.

Mr. BLACK. So, let me——

Mr. D'AGOSTINO. We've done 221 in Russia——

Mr. BLACK. Well, those are the second line of defense sites.

Mr. D'AGOSTINO. Oh, right, right.

Mr. BLACK. Let me get the information for you and bring it back, because I want to give you an accurate answer. It's readily available, it's just not in my head and——

Senator DORGAN. All right.

Mr. BLACK [continuing]. Won't be able to find it quickly.

Senator DORGAN. All right.

Mr. BLACK. I do want to make the point, though, that we have variable degrees of cooperativeness with our Russian partners. They're not all the same. In the case of the Russian Customs Service we have a cost-sharing agreement with the Customs officials. And so, the Russians bear half the cost of all of the second-line-of-defense facilities that are being put in Russia; 170, 175 of those facilities will be paid for completely by the Russians.

The reason the cost-sharing is important is because it's an indication of how committed to the task, in the first place, the Russian host is. In the case of the Ministry of Defense nuclear sites, they have been far more receptive to maintaining security upgrades at roughly two dozen facilities than has Rosatom. But, we're working very closely with Rosatom, as I said, and we're making some progress.

Senator DORGAN. All right.

Mr. BLACK. Does that help?

MANAGING LIFE EXTENSION PROGRAMS

Senator DORGAN. Finally, let me ask about the B61 life-extension programs there. It's, as I'm told, three times the number of components that need to be replaced than the W76; there's about $190 million requested to study the reuse or remanufacture of nuclear components. You're considering a compressed schedule for it. My understanding is, the first refurbished B61 would be completed by 2017.

Mr. D'AGOSTINO. Right.

Senator DORGAN. So, it's complicated, complex. You know, we went down the road, with the W80, and spent a fair amount of money on refurbishment activities—I think, close to $500 million—before canceling that program. So, you think the B61 is a critically important program, and you think that, as complicated as it is, we're not going to make the same mistake that we had with the W80?

Mr. D'AGOSTINO. Yes, sir. I think it's—it is a critically important program. It—you know, the early analysis, from our NPR and working with the Defense Department and folks in the interagency, have said that that will be a component. I'll ask the General at the right—when I'm done with my comments—maybe, to jump in and provide some specifics, if he could.

Absolutely, you're right. There are more components than the W76. That's because the 76—I mean, just the warhead, the bomb, is—we're responsible for the whole device. The approaches that we're looking at, though, will allow us to—and I believe—and the key is, exercising the people and getting them into the work necessary to maintain the stockpile. And so, I believe, by—my discussions with Tom Hunter, at Sandia National Laboratories, which have the majority of the work here, and talking with Los Alamos director, Mike Anastasio, they feel very comfortable that their workforce is up to the task.

In essence, we've started some of this thinking already, in the study phase. And this is what we're asking for, is to continue and finish that study phase on the B61 bomb. When we're done with that study phase, just like a construction project, we will want to lock down with commitments on both the laboratory's part, as well as my part, as representing the NNSA, on the exact cost, scope, and schedule for that facility. The important thing is the 2017 date.

And then, General, if you can talk to some of the specifics there.

General HARENCAK. Yes, sir.

That's one of the major requirements of the Department of Defense, is ASAS—NNSA to accomplish the life-extended B61 by 2017. That is an aggressive, yet certainly—we are committed to it, and we will get it done. A key to that, though, is a complete and full study of it, and that's what we're asking to complete as soon as possible.

Our entire enterprise is going to be focused in defense programs. Amongst all the things we do our top two priorities of getting things done is going to be the completion of W76, as we said, and getting this life-extended B61. This is an analog bomb. It's the cornerstone of our air-delivered weapon. It is essentially our only one. It needs to become a digital weapon so it could mate with the F35 for extended-deterrence reasons. That's the 2017 date on that. It's a first-production unit. The F35, regardless of when there are initial operating dates for that program, is irrespective of what we need to do. Our milestone that we must complete is to deliver a life-extended B61 by 2017. In order to do that, we have to start yesterday. And we started yesterday. But, we need to complete this study. It is very large—as you see in our budget, that we're requesting a big lift for B61. And that essentially gets to very quickly locking down how we're going to take this analog bomb and make

it digital; also, how we're going to improve its surety and its safety features, which are vitally important.

ADDITIONAL COMMITTEE QUESTIONS

Senator DORGAN. All right. We are going to submit a number of written questions to you.

Senator Feinstein, do you have additional questions?

Senator FEINSTEIN. I don't believe so, at this time.

Senator DORGAN. All right.

Senator FEINSTEIN. Thank you, though.

Senator DORGAN. Well, then we will be submitting additional questions, Mr. D'Agostino. We appreciate very much your team being here, and your being here. And obviously this is a lot of money.

Mr. D'AGOSTINO. Yes, sir.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR BYRON L. DORGAN

NUCLEAR WEAPONS DESIGN CHANGES

Question. Increases in funding for nuclear weapons science, technology and engineering point to developing capabilities to modify the design of existing weapons and understand the changes. For example, a $48 million increase for plutonium sustainment allows NNSA to manufacture pits for primaries and quadrupling of funding for advanced certification will develop NNSA's tools to certify changes to the nuclear package of existing nuclear weapons.

Does NNSA have plans to modify the design of nuclear weapons? If it does, what is driving the needs for those changes?

Answer. NNSA will give strong preference, when proceeding with engineering development for Life Extension Programs (LEPs), to options for refurbishment or reuse. Replacement of nuclear components would be undertaken only if critical Stockpile Management Program goals could not otherwise be met, and if specifically authorized by the President and approved by Congress. LEPs will use only nuclear components based on previously tested designs, and will not support new military missions or provide for new military capabilities. Upgrading and/or replacing limited life components (LLCs), such as the neutron generators, is considered a relatively routine maintenance activity to preserve the weapons' viability. Numerous aging mechanisms, including corrosion and adhesive bonding failure, raise concerns relative to non-nuclear components and weapon system performance. Often times, replacing materials, which are no longer attainable or usable because they have been deemed unsafe or environmentally damaging are included as part of an LEP. Other drivers include replacing or adding features to improve the safety and security of the stockpile, such as by replacing conventional high explosives with insensitive high explosives.

Question. How do you reconcile the needs for changes with the JASONs conclusion in its 2009 report that the lifetimes of today's nuclear warheads could be extended for decades without significant changes to their designs?

Answer. NNSA is in agreement with the JASON's conclusion that the lifetimes of today's nuclear warheads could be extended without significant changes to their designs. To increase the safety, security, and effectiveness of our nuclear arsenal, NNSA plans to upgrade limited life components (LLCs) and materials, and incorporate more surety—safety, security, and use control—technology, whenever possible, through LEPs. LLCs reaching their end-of-life will be upgraded with LLCs that have longer expected lifetimes, Certain materials will be upgraded with more attainable materials. Each weapon system will be evaluated on a case-by-case basis and the best technological approach, from a full spectrum of options, will be applied.

Question. To what extent would modifying the design of primaries and secondaries introduce more risk than maintaining them in their current condition?

Answer. NNSA, through LEPs, will use only nuclear components based on previously tested designs. Any modifications to the Nuclear Explosive Package (NEP)

would allow for the introduction of surety features, if feasible, to reduce the risk of accidental or deliberate unauthorized use of a nuclear weapon.

Question. To what extent are potential design changes consistent with the congressionally authorized Stockpile Management Program?

Answer. The congressionally authorized Stockpile Management Program allows for the extension of the effective life of nuclear weapons. NNSA, through LEPs, plans to increase the reliability of our nuclear weapons stockpile by upgrading to longer life LLCs and more readily available and compatible materials. Increases in safety, security, and use control through the incorporation of additional surety features whenever possible, and if feasible, will reduce the risk of accidental detonation and also reduce the risk of an element of the stockpile being used by a person or entity hostile to the United States, its vital interests, or its allies. Because the Nuclear Posture Review directs that strong preference be given to options for refurbishment or reuse, upcoming and future LEPs will produce modified weapons that remain comparable to their original underground nuclear tested designs to ensure certifiability, and will consider the possibility of using the resulting warhead on multiple platforms allowing NNSA to achieve reductions in the future size of the nuclear weapons stockpile.

B61 LIFE EXTENSION PROGRAM

Question. Mr. D'Agostino, the B61 Life Extension Program (LEP) is going to be very challenging. The B61 has three times the number of components that need to be replaced than the W76. In fiscal year 2011, NNSA is asking for about $190 million to study the reuse or remanufacture of nuclear components. Despite these challenges, NNSA is considering a compressed schedule for engineering and design work to manufacture the first refurbished B61 by 2017.

Given the complexity of the program, is the 2017 date realistic?

Answer. The Nuclear Weapons Council, in 2008, established the 2017 first production unit (FPU) date based on the need to replace several non-nuclear components that are approaching end-of-life and to prevent capability gaps in the U.S. extended nuclear deterrence. The Nuclear Posture Review later recommended that the full range of options, including safety and surety enhancements, be considered to extend the life of a given warhead. The 2017 FPU is achievable provided time-critical technology maturation activities are funded in fiscal year 2010 and fiscal year 2011 prior to the start of Phase 6.3 engineering development work in fiscal year 2012. To address B61 technology risks, NNSA is requesting $252 million in fiscal year 2011, which is split between the non-nuclear and nuclear study activities ($136 million) and B61 first use, technology maturation work targeted to advance readiness levels to enable the 2017 FPU ($116 million).

Question. Are you confident that you are not introducing unnecessary risk with this accelerated schedule?

Answer. Yes. The NNSA augments the weapon system acquisition process with Integrated Phase Gates (IPGs). IPGs use a systems-engineering approach to bring rigor, accountability, and cross-functional integration by using management reviews at key decision points and involving production agencies early in the design process. NNSA incorporated IPGs based on lessons learned from previous life extension programs (LEPs) and to address GAO findings and Congressional concerns about LEP management.

NNSA can manage the risk for the B61 schedule if required technologies are brought to the appropriate level of readiness prior to beginning engineering development in fiscal year 2012. Furthermore, in fiscal year 2012, the Nuclear Weapons Council will review the readiness of key technologies and associated risks prior to authorizing the next phase of development.

Question. Is there a clear nuclear deterrent mission need for the B61 life extension program?

Answer. The recently-released Nuclear Posture Review (NPR) affirms the importance of the B61 in fulfilling air-delivered strategic and extended deterrent capabilities.

MANAGING LIFE EXTENSION PROGRAMS

Question. Mr. D'Agostino, a number of GAO reports have found that NNSA has not effectively managed cost, schedule, and technical risks for the last three life extension programs—the W87, B61, and W76—and that NNSA has not established realistic schedules to complete these projects.

To what extent has NNSA improved its ability to manage cost, schedule and technical risk?

Answer. NNSA is applying corrective acquisition management measures to the current B61 Life Extension Program (LEP) Phase 6.2 Study. These measures were communicated in NNSA's Management Decision letter of March 12, 2009, in response to the Government Accountability Office (GAO) report GAO–09–152C, "Nuclear Weapons: NNSA and DOD Need to More Effectively Manage the Stockpile Life Extension Program." NNSA has made progress on improving the approach to requirements, risk, cost, and schedule management through an improved implementation of the joint DOD–NNSA acquisition process for nuclear weapons refurbishments.

Question. Based on NNSA's current plans, by 2017, NNSA will be completing the W76 life extension, starting the B61 life extension, preparing for the W78 life extension, possibly increasing weapons dismantlement based on treaty obligations, and continuing surveillance of aging nuclear weapons. How does NNSA plan to manage these many activities concurrently, especially when it has not previously managed more than one life extension at one time?

Answer. Trade studies are conducted to assess the need for specific NNSA capabilities and facilities. As part of these trade studies, DOD is involved in assessment of life extension priorities. NNSA is also currently assessing workload in technical maturation and life extension studies across the nuclear complex and will likely be making workload-balancing assignments to optimize execution of multiple life extension activities. Through the early 2000s, NNSA managed the B61 ALT 357, W76, and W80 life extension programs concurrently.

Question. To what extent will the nuclear weapons production plants—Pantex, Y–12, and Kansas City—be able to manage this increase in workload when they already face resources and infrastructure constraints?

Answer. In conjunction with the life extension studies, trade studies are being conducted to assess the refurbishment options, along with overall workload evaluations on the NNSA production facilities and their capacities. For instance, a Canned Subassembly (CSA) reuse study is currently underway for the B61 life extension study that may ultimately minimize the amount of work and resources that will be needed at Y–12 for this LEP. Also, as part of the enhanced acquisition risk management approach to the B61 life extension study, production readiness risks have been identified at the Kansas City Plant and funding priority has been given to minimize these risks by the B61 LEP program management team.

Question. To what extent does the fiscal year 2011 budget help the production plants prepare for increased activities?

Answer. As part of the fiscal year 2011 budget request, the Science, Technology, and Engineering Campaigns and stockpile services were funded at a level to mature the development and manufacturing of technologies needed for Life Extension Programs. In addition, the life extension program management team has given priority to the complementary funding needed for technical maturation at the national laboratories and plants.

NUCLEAR SURVEILLANCE

Question. Mr. D'Agostino, the fiscal year 2011 budget request adds about $50 million to increase surveillance activities for each weapon system in the stockpile.

To what extent is this increase in funding sufficient to address the JASON's concerns?

Answer. Based on the National Laboratory Directors and the JASON recommendations for a more robust surveillance program, an increase of $50 million was added for each year split among the weapon programs to sufficiently enable the accomplishment of weapons systems surveillance requirements.

Question. How have you modified the surveillance program and how do you maintain confidence that the new approach will identify any emerging problems as weapons age?

Answer. In 2007, NNSA modified the surveillance testing approach through the Surveillance Transformation Project. NNSA took action to reduce the number of system test activities across all weapon programs, while increasing the actual number of component tests that look for age-related degradations. The design agencies reviewed their component testing programs and increased requirements in that area. NNSA also experienced new requirements for non-destructive evaluations and modeling and simulation techniques and capabilities. In prior fiscal years, NNSA was able to identify some funding within the base program to support the increase in component testing and development of new surveillance diagnostic techniques and capabilities; however, the $53 million in increased funding included in the fiscal year 2011 request for surveillance activities will allow NNSA to make significant progress on the Surveillance Transformation Project.

In addition, NNSA reorganized the surveillance enterprise structure to improve the alignment of the organizations responsible for the development of surveillance requirements all the way up to those responsible for programmatic and budgetary decisions. Emphasis has been placed on better integration and communication of requirements and prioritization of activities across weapon programs and all sites. This was another issue raised by the JASON study.

NATIONAL IGNITION FACILITY

Question. Mr. D'Agostino, in January 2009, the JASONs criticized NNSA for failing to implement a "critical recommendation" they issued in 2005 to improve oversight and management of the National Ignition Campaign.

Has NNSA implemented the recommendation by establishing both an advisory committee to review scientific and technical issues and an advisory committee to review how NIF will be shared by different users?

Answer. As recommended by the JASON review and endorsed by NNSA, LLNL has formed an advisory group (Chaired by Dr. Alvin Trivelpiece) to review the progress of the National Ignition Campaign. This group has had one meeting and will be producing a preliminary report soon. NNSA has also taken initial steps to form a Federal Review Committee with a charter that will include all of weapons science and technology. This committee will review the use of NNSA facilities as shared national resources. Finally, NNSA has also formed a Planning Council whose purpose is to formulate a detailed plan for weapons experimental activities for all users at all NNSA facilities.

Question. If not, why has it taken more than 5 years to implement this recommendation?

Answer. The NNSA is implementing the recommendation.

WEAPONS DISMANTLEMENT AND DISPOSITION

Question. Mr. D'Agostino, funding for weapons dismantlement and disposition is declining in fiscal year 2011.

Is NNSA reducing the pace of dismantlements?

Answer. No, the pace of dismantlements remains consistent with our commitment to dismantle all currently retired weapons by 2022. However, the dismantlement rate varies depending on the complexity of the weapon types scheduled for dismantlement. Some weapons require considerably more effort and time than others to dismantle. In recent years, NNSA exceeded its planned dismantlement rates due to investments in efficiencies and additional funding from Congress. Consequently, NNSA has some flexibility in adjusting resource commitments in the near term. NNSA remains committed to dismantle all currently retired weapons by 2022.

Question. Is a funding decrease consistent with the backlog of retired weapons awaiting dismantlement and potentially more after the START treaty is signed?

Answer. NNSA's planned fiscal year 2011 dismantlement funding aligns with our schedule to dismantle all currently retired weapons by 2022. The NNSA will review the details of the New START treaty and ensure we take appropriate action to support the commitments made by the President. The schedule and planning through 2022 will need to be adjusted if additional dismantlements are to be added to the workload within that timeframe.

NONPROLIFERATION

Question. From fiscal year 1993 through fiscal year 2010, DOE has spent more than $2 billion to provide security upgrades and other related assistance to nuclear weapon sites in Russia and other countries. In fiscal year 2011, NNSA requested more than $200 million to complete this work with the last year of funding for these programs in fiscal year 2012.

How will NNSA ensure that Russia will maintain these security upgrades once the United States withdraws?

Answer. The funds requested will be used to support nuclear security improvements to areas where NNSA has recently been granted access, continue to maintain the systems we have installed over the period of our program, and tackle the challenge of reducing the risk to theft by an insider.

At the same time, NNSA is doing all it can to help Russia take over financial responsibility. For the past several years, NNSA has been working with our Russian partners, primarily the State Corporation for Atomic Energy, "Rosatom," to ensure that they are prepared to sustain our sizeable investment in the long-term. NNSA and Rosatom have agreed to a Joint Transition Plan which identifies the fundamental requirements for sustainable nuclear security programs, and joint projects that will be undertaken over the next few years to ensure these fundamental re-

quirements are in place. Rosatom officials have told NNSA counterparts repeatedly that they understand maintenance of these systems in the long run is their responsibility, however, we believe the added costs for maintenance are being passed on to sites and are not being funded through Russia's Federal budget. Regarding the Ministry of Defense, it has informed us that it will take over full financial responsibility for sustaining permanent warhead sites (11 sites with DOE-funded upgrades, 18 sites with DOD-funded upgrades), and that the Kremlin has promised necessary funds will be made available. MOD is expecting to receive funding in April 2010 for this sustainability work.

The success of these efforts ultimately depends on Russia's willingness and ability to devote the necessary resources. We hope that the Russian Government will increase its nuclear security budget and ensure that these funds are efficiently distributed to the hundreds of nuclear facilities across the vast Russian territory. The Russian nuclear security budget is classified and we have not yet seen much evidence of increases in funding at sites where we are working.

Question. Funding for the gap nuclear material remove program jumps from $9 million to $108 million or 12 times more funding than fiscal year 2010. How does NNSA plan to spend this significant increase in funding for this program and what are the challenges in spending this money?

Answer. This activity supports the removal and disposal of vulnerable, high-risk nuclear materials that are not covered by the Russian-origin and U.S.-origin Nuclear Material Remove activities. This includes U.S.-origin HEU other than TRIGA and MTR fuel, HEU of non-U.S.- and non-Russian-origin, and separated plutonium. These activities collectively support President Obama's April 5, 2009 Prague speech in which he called for an international effort to secure all vulnerable nuclear material around the world within 4 years, which was further strengthened in the July 2009 Joint Statement resulting from the Moscow Summit and the September 2009 UNSC Resolution 1887. In accordance with these goals, GTRI is accelerating the return of Gap material from third countries.

In fiscal year 2011, GTRI will remove or facilitate disposition of an additional 161 kilograms of Gap HEU and plutonium from several countries, resulting in a cumulative total of 301 kilograms of HEU and plutonium removed, enough material for more than 10 nuclear weapons. Funds will also be used for preparatory activities for removals planned for 2012.

Additionally, in fiscal year 2011 GTRI will focus a large portion of its funding on HEU spent fuel removals since we have completed most of the HEU fresh fuel removals. Spent fuel removals are more expensive than the fresh fuel removals because the radioactivity of the fuel requires specialized casks and remote operations.

SECOND LINE OF DEFENSE

Question. Funding for the Second Line of Defense (SLD) core program, which involves installing radiation detection equipment at borders in Russia, former Soviet states, Eastern Europe and other key countries is doubling to $140 million to complete another 55 sites.

Have countries at these 55 sites already agreed to install this equipment?

Answer. The 55 sites are based on our current planning and represent our best projection of the sites at which we will be working. We already have agreements in place to partner with all but two of the countries, and we have every reason to believe that we will sign these additional agreements in the near future, certainly before fiscal year 2011.

Question. Are these sites the highest priority sites to combat nonproliferation?

Answer. Based on our threat analysis, we believe that all these sites are high priority for receiving SLD support.

Question. How will the United States ensure that these countries will properly maintain the equipment after it is installed?

Answer. SLD's Sustainability Program is designed to ensure the long-term operation of SLD systems by Host Country Partners. To this end, SLD works closely with Host Country Partners to develop their indigenous capabilities so that we may fully transition SLD systems to their support. SLD and Host Country Partners agree on joint transition plans in which milestones for the turnover of training, maintenance, and oversight responsibilities (including budget planning) are formalized.

During this transition phase, the SLD Program provides maintenance technicians, training experts, and Sustainability leads to work with Host Country Partners to develop their indigenous capabilities. For maintenance, SLD provides training, tools, and spare parts to ensure equipment remains operable. Maintenance is usually performed by local contractors and includes scheduled maintenance and calibration as

well as urgent or unscheduled repairs. In addition, Pacific Northwest National Laboratory (PNNL) provides support on training transition to the Host Country Partners. PNNL has also established a Help Desk to provide support to local maintenance providers and host nation counterparts in the event of an issue with a system that cannot be resolved at the local level. Through the Help Desk, the program can provide remote expertise or deploy experts from the United States if needed to repair a system if needed.

Question. Has DOE addressed GAO's concerns about corruption of some foreign border security officials, technical limitations of some radiation detection equipment, inadequate maintenance of some equipment, and the lack of supporting infrastructure at some border sites?

Answer. The Second Line of Defense Program addresses corruption through two main approaches. First, radiation portal monitors are networked to central alarm stations (CAS) at the sites. Should an alarm sound or a monitor be disabled, the CAS operator is automatically notified. In most sites, this means that more than one individual is engaged in resolving alarms and would be aware if a monitor were disabled or ignored. This increases the chance that corrupt actions could be observed and countered. In addition, the SLD Core Program has begun integrating the sites into nationwide networks reporting to central officials (usually in the nation's capital). Should a high-priority alarm be generated at a site, or a monitor disabled, other border security officials would become aware and could investigate and validate the actions of the officials at the border crossings. Integration projects are underway in Russia (where the Customs Service is paying for half the installation) and Georgia. Networking is planned to begin in one more country in 2011.

SLD also collaborates with other international organizations, notably the EU and IAEA on training, in addition to the extensive training that SLD provides directly to the partner country as part of the implementation process. SLD believes that this training contributes to strengthening the recipient organizations and building a strong cadre of committed customs and border management officials.

The radiation detection equipment SLD Core provides has been proven over time to be robust, relatively easy to maintain, and effective in detecting special nuclear material (SNM) under limited shielding scenarios. A knowledgeable individual can shield SNM from the passive radiation detection equipment we provide. However, we believe that the equipment that SLD provides is the best and most appropriate detection system currently available for the type of detection activities being carried out. The equipment is carefully installed and its settings optimized to maximize its effectiveness against SNM.

The SLD Program funds maintenance and sustainment contracts that provide for calibration of the equipment it provides. Responsibility for funding maintenance and sustainability transitions to the recipient country after an agreed upon period of time, generally 3 years but longer if necessary. A description of how SLD maintains equipment is provided in the answer to the previous question.

In most cases, infrastructure exists to provide electricity and security for the radiation portal monitors. In many cases, back up power generators are provided to ensure that short-term power outages do not adversely impact the monitors. In cases where sites are not manned year round, or there is insufficient infrastructure, SLD may provide handheld devices in lieu of permanently installed systems.

U.S. AND RUSSIAN PLUTONIUM DISPOSITION

Question. The United States is negotiating an agreement with Russia in which the United States would provide $400 million to support plutonium disposition in Russia and Russia would pay the other $2 billion. The fiscal year 2011 budget asks for the first $100 million U.S. commitment.

What is the status of the U.S.-Russia protocol to dispose of weapons grade plutonium?

Answer. On March 11, the U.S. and Russian lead negotiators initialed the conformed English and Russian texts of a Protocol to amend the 2000 Plutonium Management and Disposition Agreement (PMDA). A set of associated monitoring and inspections key elements was also approved in mid-March. The United States and Russia are scheduled to sign the Protocol in mid-April.

Question. What are the terms of U.S. financial support and what would Russia have to do before we release the first $100 million and the other $300 million?

Answer. The United States will spend the $100 million in the fiscal year 2011 budget request once the amended PMDA and associated liability provisions enter into force (expected in fall 2010 once the Russian Duma ratifies the amended PMDA). DOE has developed a notional plan for spending $300 million of the $400 million based on a "milestone approach" to move Russia toward beginning disposi-

tion in 2018. Under the "milestone approach," the United States would provide funding once Russia has fully completed a milestone and U.S. experts have verified such completion. The remaining $100 million will be paid to Russia on a pro rated basis for each metric ton of plutonium verified to have been irradiated and disposed (e.g., approximately $2.7 million per metric ton).

QUESTIONS SUBMITTED BY SENATOR DIANNE FEINSTEIN

NUCLEAR WEAPONS

Question. The President has requested $11.2 billion for the National Nuclear Security Administration, a 13.4 percent increase from fiscal year 2010. This includes a request of $7 billion for Weapons Activities, an increase of $624 million from fiscal year 2010. In your testimony and in the recent op-ed by Vice President Joe Biden, the administration has argued that the funding requests reflects the President's vision of a nuclear free world and his commitment to stopping the spread of nuclear weapons efforts and maintaining the safety and security of our arsenal without nuclear testing.

Are you concerned that our allies and adversaries will view the massive increase in spending on our nuclear weapons arsenal as an indication that the United States is not serious about a nuclear-free world?

Answer. As President Obama articulated in his April 2009 speech in Prague, the United States is committed to achieving a world without nuclear weapons. While this is a long-term objective, the President expressed his intent to take concrete steps to make it possible. Several of these steps have already been taken.

—Critically, the United States and Russia have already reduced the number of deployed strategic nuclear warheads by about 75 percent, and the signing of New START agreement will take these numbers even lower.

—Moreover, the Nuclear Posture Review deemphasizes the role of nuclear weapons in U.S. national security strategy.

—However, as long as nuclear weapons exist, the United States is committed to maintaining safe, secure, and effective nuclear forces in order to deter potential adversaries and assure U.S. allies and partners.

—The increase in spending will allow NNSA to modernize the infrastructure and sustain the science, technology, and engineering base. By revamping the complex, we will be able to consolidate activities, and respond more effectively to unanticipated future threats. This will not only assure that our stockpile remains safe, secure and effective, but the reinvestment will in fact also facilitate further nuclear reductions by sustaining the confidence in the active weapon systems and lower the need for a large reserve stockpile. Continued investment in the nuclear complex will also enhance our ability to stem nuclear proliferation and nuclear terrorism.

Question. How does the President's request square with his view that the United States should lessen the importance of nuclear weapons in our national security strategy?

Answer. The President's request is consistent with his view that investments in the nuclear security enterprise are required to lessen the importance of the nuclear weapons in our national security strategy.

—By maintaining a credible nuclear deterrent and reinforcing regional security architectures with missile defenses and other conventional military capabilities, we can reassure our non-nuclear allies and partners worldwide of our security commitments to them and confirm that they do not need nuclear weapons capabilities of their own.

—By pursuing a sound Stockpile Management Program for extending the life of U.S. nuclear weapons, we can ensure a safe, secure, and effective deterrent without the development of new nuclear warheads or further nuclear testing.

—By modernizing our aging nuclear facilities and investing in human capital, we can substantially reduce the number of nuclear weapons we retain as a hedge against technical or geopolitical surprise, accelerate dismantlement of retired warheads, and improve our understanding of foreign nuclear weapons activities.

Question. How will the President's request impact our efforts to strengthen the Nuclear Nonproliferation Treaty at the May 2010 review conference?

Answer. The President's request for increased investment demonstrates our commitment to nuclear nonproliferation efforts. This bolstered the United States' position to lead the effort to strengthen the Nonproliferation Treaty at the May 2010 review conference.

In last year's Prague speech, the President laid out his vision for ultimately achieving a world without nuclear weapons, supported by a system of enhanced nonproliferation controls and a new international civil nuclear framework. The President's budget request enhances DOE's efforts to strengthen both the U.S. nuclear disarmament record of achievement and the credibility and reliability of the U.S. nuclear deterrent as a stabilizing influence as we proceed toward a nuclear weapon free world. The President's budget request will, among other benefits, allow the Department of Energy to continue with its planned nuclear dismantlement activities and support the provisions of the recently completed New START Treaty. The budget request will also help the Department to continue to transform the DOE Nuclear Weapons Complex to a smaller weapons complex that consolidates activities at fewer sites while allowing the United States to better respond to existing and credible potential challenges. These changes will provide the framework to allow the United States to go to lower numbers of nuclear warheads in the stockpile.

Question. Mr. D'Agostino, as you know, I have long opposed the production of new nuclear weapons by the United States. It is unnecessary and harms our nuclear nonproliferation efforts. During the presidential campaign President Obama said: "I will not authorize the development of new nuclear weapons." The President did not request any funding for the Reliable Replacement Warhead program in fiscal year 2010 and on a conference call with reporters last month you said that "RRW is dead, it is over."

Can you confirm that the fiscal year 2011 budget request does not contain any funding for the Reliable Replacement Warhead program or any new-design warheads?

Answer. Yes. I can confirm that the fiscal year 2011 budget request does not contain any funding for the Reliable Replacement Warhead program or any new-design warheads. Per the Nuclear Posture Review, the administration is focused on maintaining the stockpile through Life Extension Programs.

Question. If the NNSA fiscal year 2011 budget does not include any funding for new-design nuclear weapons, is it accurate to say that you and the directors of the national labs agree that for the foreseeable future the effectiveness of our nuclear arsenal can be maintained into the indefinite future through Life Extension Programs?

Answer. Yes, the Laboratory Directors and I agree that our nuclear arsenal can be maintained into the indefinite future through Life Extension Programs (LEPs). The full range of LEP approaches will be considered on a weapon-by-weapon basis. The Nuclear Posture Review states, "In any decision to proceed to engineering development for warhead LEPs, the United States will give strong preference to options for refurbishment or reuse. Replacement of nuclear components would be undertaken only if critical Stockpile Management Program goals could not be otherwise met, and if specifically authorized by the President and (funding is) approved by Congress."

Question. Mr. D'Agostino, I was pleased to see the recent report of the JASONS, the independent scientific body, which found that the United States can maintain our existing nuclear arsenal for decades with our existing Life Extension Programs. This is great news.

In your view, does this report close the door, once and for all, on a Reliable Replacement Warhead-like program that would produce a new nuclear warhead?

Answer. NNSA does not foresee the need to develop a new nuclear warhead. Each weapon system will be evaluated on a case-by-case basis in order to determine which Life Extension Program option best preserves the weapon's effectiveness, safety, and security. The Nuclear Posture Review makes the point very clearly, "The United States will not develop new nuclear warheads. 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."

Question. How will the Nuclear Posture Review influence the size of the reductions in each nation's stockpile?

Answer. The Nuclear Posture Review conducted detailed analysis to determine an appropriate limit on nuclear warheads and strategic delivery vehicles.

—As an initial step, the administration is committed to working with Russia to preserve stability at significantly reduced nuclear force level, through the New Strategic Arms Reduction Treaty (New START), which will replace the expired 1991 START I Treaty.

—New START sets significant mutual limits in deployed strategic nuclear warheads, well below that 2,200 allowed under the Strategic Offensive Reductions Treaty, also known as the Moscow Treaty, which expires in 2012.

—The United States agreed with Russia to New START limits of 1,550 accountable strategic warheads, 700 deployed strategic delivery vehicles, and a combined limit of 800 deployed and non-deployed strategic launchers.
—The Nuclear Posture Review also calls for reinvesting in the nuclear security enterprise's intellectual and physical infrastructure. This additional investment will not only assure that our stockpile remains safe, secure and effective, but will also facilitate further nuclear reductions by sustaining the confidence in the active weapon systems and lower the need for a large reserve stockpile.

Question. Given the substantial commitment to maintaining the safety and reliability of the nuclear arsenal as reflected in the President's budget request for the NNSA, can we go even lower?

Answer. The New START Treaty has been signed. The President has directed a review of potential future reductions in U.S. nuclear weapons below New START levels, but the pace of further reductions has yet to be determined. The Nuclear Posture Review states, "Russia's nuclear force will remain a significant factor in determining how much and how fast we are prepared to reduce U.S. forces. Following ratification and entry into force of New START, the administration will pursue a follow-on agreement with Russia that binds both countries to further reductions in all nuclear weapons. Because of our improved relations, the need for strict numerical parity between the two countries is no longer as compelling as it was during the cold war. But large disparities in nuclear capabilities could raise concerns on both sides and among U.S. allies and partners, and may not be conducive to maintaining a stable, long-term strategic relationship, especially as nuclear forces are significantly reduced. Therefore, we will place importance on Russia joining us as we move to lower levels." [1]

NUCLEAR NONPROLIFERATION EFFORTS

Question. I firmly believe that ratification of the Comprehensive Test Ban Treaty is critical to reclaiming U.S. leadership in the nuclear nonproliferation field and bringing us closer to a world free of nuclear weapons. I am pleased that the Obama administration has made ratification of this treaty a priority.

How does the President's budget request support ratification of the Comprehensive Test Ban Treaty? Is there sufficient funding for implementation and verification?

Answer. The President's budget request reflects his commitment to maintaining the nuclear deterrent without nuclear testing and is consistent with the principles of the Stockpile Stewardship Management Plan submitted to Congress. This budget reinvests and recapitalizes the nuclear security infrastructure—including in its science, technology and engineering human capital base—essential for assuring that the stockpile is safe, secure and effective. The President's arms control and non-proliferation policies require these investments so that the Nation is confident that its reduced nuclear stockpile is safe, secure, and effective, without having to resort to nuclear testing.

The President's budget request also supports CTBT ratification because it invests in a robust, science-based Stockpile Stewardship Program (SSP). SSP is the key program that provides the Nation the assurance that the stockpile is safe, secure, and effective without underground nuclear testing. SSP is also the essential program for managing long-term risks to the stockpile as it ages, protecting against technological surprises, and supporting nuclear nonproliferation technology development. The SSP sustains the science, technology, and engineering expertise and exercises the talent for the development of next-generation technologies for proliferation prevention-related nuclear missions, including nuclear forensics, detection, and verification technologies. A sustained science base will provide the ability to respond to the challenge of meeting requirements that may result from the New START or CTBT treaties.

While today's SSP capabilities are supplanting—and even surpassing—the role that nuclear tests once played in understanding our nuclear weapons, the President's fiscal year 2011 budget request will also allow us to revitalize the workforce, sustain the stockpile, and modernize key parts of the physical infrastructure.

Question. I applaud your commitment to supporting President Obama's goal of securing all vulnerable nuclear material from around the world within 4 years.

What do you need from Congress to meet this goal? What programs will be involved? What are the key challenges?

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[1] Nuclear Posture Review Report, April 2010, Page 30.

Answer. Congressional support for our budget requests is a critical element to ensuring that we meet the President's goal of leading an international effort to secure all vulnerable nuclear materials within 4 years.

A number of programs within the Office of Defense Nuclear Nonproliferation play a direct role in implementing the work necessary to meet this goal. The Offices of International Material Protection and Cooperation and Global Threat Reduction lead the effort to secure vulnerable nuclear materials from theft or sabotage worldwide. The Global Threat Reduction Initiative seeks to permanently eliminate the threat by converting research reactors and isotope production facilities from the use of highly enriched uranium (HEU) to low enriched uranium (LEU) and by removing or permanently disposing of excess nuclear material. Finally, the Office of Nonproliferation and International Security plays a vital role in strengthening the international system that ensures that nuclear sites worldwide have adequate safeguards measures in place.

The primary challenge that NNSA faces is cooperation of foreign governments. The United States cannot unilaterally eliminate the threat posed by dangerous materials and we therefore rely heavily on cooperation from many international partners. In addition to the activities outlined above, the Office of Defense Nuclear Nonproliferation has been actively involved in various initiatives undertaken to bolster U.S. leadership in nonproliferation and arms control, such as the 2010 Nuclear Security Summit, the Joint Statement from the Moscow Summit in July 2009, and the September 2009 United Nations Security Council (UNSC) Resolution 1887.

NATIONAL IGNITION FACILITY

Question. Mr. D'Agostino, some assert that the National Ignition Facility may be a prototype for a fusion nuclear powerplant some day. I understand that the National Academy of Sciences and the National Academy of Engineering are conducting a study on Inertial Fusion Energy in part to explore the viability of that vision.

Do you agree that the results of this study could be enhanced if the National Ignition Facility is able to provide the Academy with extensive analysis and testing?

Answer. While I agree that the National Ignition Facility (NIF) will ultimately play a central role in any program designed to evaluate concepts for inertial fusion energy, I do not believe that specific new experimental work will be required for the current National Academies study. The National Academies panel has been asked to assess the prospects for Inertial Fusion Energy (IFE) as a power source; to identify scientific and engineering challenges, cost targets and research and development objectives associated with developing an IFE demonstration plant; and to advise the DOE on an R&D roadmap aimed at creating a conceptual design for such a demonstration assuming success in ignition at NIF as a starting point. This will be a wide-ranging assessment that will look at various schemes for target physics and component technologies beyond those currently being investigated as part of the National Ignition Campaign and will depend primarily on existing computational and experimental studies of the various approaches. The most important task for NIF, in support of the study, is to achieve ignition as soon as possible since the prospects for development of inertial fusion for energy applications is dependent upon achievement of this critical milestone. The current schedule for this is already quite aggressive.

Question. Do you believe that Lawrence Livermore National Lab would need additional funding to provide the Academy with such testing and analysis?

Answer. Specific funding has not been provided to the laboratories to support such studies in the past, but they may use their discretionary research funding to support work they deem necessary for their participation. If funding was directed to support analysis and testing in support of the National Academies study, a mechanism would have to be identified to ensure equitable access to all potential participants and thus all potential IFE alternatives in the study.

Question. Could the NAS's ability to make sound technical judgments on the potential of Inertial Fusion Energy be impaired due to the lack of technical development of the trade-offs of various design approaches if it does not have full access to NIF testing?

Answer. Because the NAS has been asked to help establish an R&D roadmap for IFE based upon the current state of maturity of the relevant science and technology, it is not likely that their conclusions could be impacted by testing prior to the achievement of ignition. The most important question that NIF will address relevant to the National Academies study is the demonstration of ignition, which is already the focus of the National Ignition Campaign. All of the nascent inter-

national efforts on IFE are also planning based on the U.S. Inertial Confinement Fusion program being the lead on the actual demonstration of ignition.

Question. Do you believe that developing Inertial Fusion Energy should be part of the mandate of the NNSA, the DOE Office of Science, or both? Why do you believe this?

Answer. Through leadership of the three Department of Energy Under Secretaries, and reporting through Under Secretary Koonin, we have an internal DOE study to assess several areas of research and development that currently cut across departmental organizations. We have chosen to include inertial fusion energy in those assessments because of its potential, and we will use this process to consider when and how to recommend to Congress that a modified program might be established.

Question. Mr. D'Agostino, a year after completion of construction of the National Ignition Facility, NNSA has proposed an operations budget that may not permit Lawrence Livermore National Lab to run this facility full time.

Do you agree that after making this sort of capital investment, NNSA should provide the resources necessary to operate the facility 24 hours a day, 7 days a week?

Answer. NNSA's requested funding provides for 24-hour-a-day, 7-day-a-week (24/7) operations at NIF. A very careful experimental plan has been formulated for the period through the first attempts at ignition. In this plan, the most efficient experimental shot sequence was deemed to be about 16 hours-per-day/5 days-per-week (16/5) with the overall NIF operations staff remaining on a 24/7 status. This plan is also more compatible with the continuing installation of sophisticated equipment since the facility operations schedule must allow adequate time to ensure safety during maintenance and installation of experimental equipment.

In the early experimental operation of NIF, the shot sequence was 10 hours-per-day/7 days-per-week. NIF is currently in the process of installing sophisticated cryogenic (and other) equipment that will enable DT-layered target operation. After this installation period, NIF will begin the 16/5 shot sequence that is believed to be optimum for the very complex targets that will be utilized for many of the shots.

Question. Mr. D'Agostino, at our hearing, you emphasized that it is very important to focus on getting to ignition at NIF, before putting too much work into next steps predicated on successful ignition. However, I am told that scientists in other countries are barreling ahead with their work "assuming ignition," and that we risk falling behind as a result.

Are you concerned that we could fall behind other countries in this area due to our caution? Please explain.

Answer. The Department of Energy is a world leader in inertial confinement fusion research, and the National Ignition Facility gives the United States an unparalleled capability to undertake this research. Our aggressive plan for ignition will lay the basis for the rest of the world to pursue research in inertial fusion energy, with reliance on U.S. development of critical technology such as diode-pumped laser systems. A similar facility called Laser Mega Joule is expected to eventually provide a French capability to pursue ignition, but the United States is in the unique position to pursue this major scientific achievement now. Current European plans for Inertial Fusion Energy are at a formative stage and will not involve significant activity until about 2020. Our scientists are certainly aware of the worldwide activities in this area, and I am not concerned that we could fall behind other countries is this area in the foreseeable future.

The U.S. ICF Program is actively pursuing the application of ignition to the crucial needs of the weapons program. With respect to the Inertial Fusion Energy application, the National Academy of Sciences has been asked to provide an analysis of the best directions to follow after the achievement of ignition. We anticipate using the NAS Panel report (an early draft will be available in less than 1 year) as a key component in planning for the application of ignition to energy issues.

LLNL STUDY

Question. Mr. D'Agostino, in 2007 a private consortium began operating Lawrence Livermore National Lab. I still question the logic of having a private contractor run national nuclear labs as for-profit corporations. Is NNSA willing to conduct a thorough review of whether this privatization effort has produced significant benefits to the productivity of our national labs"?

Answer. Yes. NNSA is currently sponsoring the study that was mandated in the fiscal year 2011 National Defense Authorization Act to be conducted by the National Academies of Science. The study, to be conducted in two phases, each by a separately appointed committee, will provide an independent external review of the following for the Lawrence Livermore, Los Alamos, and Sandia National Laboratories:

—The quality of the scientific research being conducted at the laboratory, including research with respect to weapons science, nonproliferation, energy, and basic science.
—The quality of the engineering being conducted at the laboratory.
—The criteria used to assess the quality of scientific research and engineering being conducted at the laboratory.
—The relationship between the quality of the science and engineering at the laboratory and the contract for managing and operating the laboratory.
—The management of work conducted by the laboratory for entities other than the Department of Energy, including academic institutions and other Federal agencies, and interactions between the laboratory and such entities.

Phase 1 will address elements 4 and 5 of the Statement of Task and aspects of element 3. A separate committee will be formed for Phase 2, which will address elements 1 and 2 of the Statement of Task and aspects of element 3.

The report from the NAS is expected to be complete in January 2012.

QUESTIONS SUBMITTED BY SENATOR ROBERT F. BENNETT

WEAPONS ACTIVITIES

SURVEILLANCE

Question. Mr. D'Agostino, the budget request states that funding has been restored to fully execute the surveillance program.

What is the budget for surveillance, and how does that amount compare to fiscal year 2010? Is this enough to make the surveillance program "whole"?

Answer. In fiscal year 2011, NNSA requests $66 million directly for Enhanced Surveillance. Within Directed Stockpile Work (DSW), there is over $300 million dedicated to surveillance activities, including the DSW base capability for conducting surveillance in stockpile services and the specific weapon surveillance activities in stockpile systems. For comparison, the fiscal year 2010 appropriation authorized $69 million directly for Enhanced Surveillance and approximately $200 million dedicated to surveillance activities in DSW.

Based on NNSA's actions to do surveillance smarter and more efficiently, the fiscal year 2011 request provides an adequate and balanced surveillance portfolio.

PLUTONIUM SUSTAINMENT

Question. Mr. D'Agostino, the budget request includes a $50 million increase for Plutonium Sustainment to restore the capability to produce 10 pits per year.

What happened to this capability? Wasn't it achieved in fiscal year 2007?

Answer. The NNSA successfully produced 11 W88 pits in fiscal year 2007. The funding in 2007 was $165 million which was the level necessary to attain and maintain the capability to produce up to 10 pits per year. However, fiscal year 2008 and fiscal year 2009 funding levels were $135 million and $143 million, respectively, which resulted in the capability not being fully maintained as intended and necessary infrastructure investments to be deferred. The increase of $50 million will restore the funding levels to maintain this capability back to its required level and will also support development of a Defense Programs power supply mission. The increase will support upgrades and new equipment items. Additionally, as part of our Plutonium Sustainment mission, NNSA will work with LANL to revise and update equipment layout in Plutonium Facility 4 to streamline the pit production process that is co-located with existing Research and Development activities.

FIRP

Question. When Congress authorized the Facilities and Infrastructure Recapitalization Program (FIRP) to buy-down legacy deferred maintenance backlog, it was designed as a finite program with a congressionally-mandated end in fiscal year 2013. Yet the full scope of legacy deferred maintenance has not been bought down and newly deferred maintenance has accumulated. Why has adequately maintaining infrastructure been such a problem for NNSA? What would NNSA do with additional FIRP funds if the program were extended or succeeded?

Answer. When FIRP was authorized, NNSA determined that an acceptable goal for deferred maintenance reduction was on the order of $1.2 billion, which was 5 percent of the value to replace the physical infrastructure. This level should provide a facility condition equivalent to the best managed Federal and private sector campuses.

FIRP was designed to be completed by fiscal year 2011. Annual funding for FIRP remained on track through fiscal year 2005 and resulted in sizable reductions of deferred maintenance across the complex through the completion of high priority projects supporting the Stockpile Stewardship Mission. Thereafter, weapons activity funding for facility maintenance and deferred maintenance reduction struggled in the face of reduced appropriations. The direct impact of fewer annual dollars slowed the progress of deferred maintenance reduction. In light of these challenges Congress authorized in the extension of FIRP to fiscal year 2013 and the $1.2 billion goal was reduced to $900 million.

If additional funds were provided, the NNSA would continue its goal of to reduce deferred maintenance to industry standards based on the annual increases furnished. Additional funds would be prioritized to address unfunded deferred maintenance projects, as well as to further support the Facility Disposition subprogram, which has been restarted this year because of the growing need to dedicate resources specifically to dismantle and dispose of excess deactivated facilities. When the FIRP Facility Disposition subprogram ended in fiscal year 2008, it had successfully demolished more than 3,100,000 gross square feet of excess facilities.

TRITIUM READINESS

Question. Mr. D'Agostino, NNSA is facing significant technical challenges in its Tritium Readiness Program that have caused the Tennessee Valley Authority to limit the number of Tritium Producing Burnable Absorber Rods in its reactor (thus affecting the amount of Tritium produced for extraction).

Is NNSA taking any action to develop alternative Tritium production processes to the current plan to produce tritium at commercial light water reactors?

Answer. No other alternative to producing tritium in commercial light water reactors is being considered at this time. NNSA and TVA entered into an interagency agreement in the year 2000 which called for TVA to perform irradiation services for NNSA using any of the following reactors; Watts Bar Unit 1, Sequoyah Units 1 and 2. Under the interagency agreement, NNSA notifies TVA of its irradiation requirements and TVA decides how best to accomplish the irradiation, specifically, which reactors will be used to accomplish the irradiation services. To date TVA has met all requirements through the use of Watts Bar Unit 1 only. TVA has taken and will continue to take steps to get Sequoyah ready for potential future irradiation services.

TVA produces tritium for NNSA through the irradiation of Tritium Producing Burnable Absorber Rods (TPBARs). Although TPBARs have been experiencing higher than expected permeation rates of tritium into the reactor coolant system, TVA has maintained levels below its regulatory limits to ensure public health and safety. NNSA and TVA are developing plans to continue to meet NNSA tritium requirements using only the Watts Bar reactor, however, the Sequoyah reactors would also be available as backups, if necessary.

Even with the challenges the program faces, the production of tritium at commercial light water reactors remains the best means to produce tritium.

PHYSICAL SECURITY BUDGET

Question. The budget request calls for a decrease for Defense Nuclear Security by $49 million or 6 percent. The decrease is attributed to implementation of the Graded Security Protection (GSP) Plan and to "The Deputy Secretary's Security Reform Initiative."

How has implementation of the GSP already effectuated security cost savings and what are they?

Answer. The issuance of the Department's 2008 GSP Policy, which replaced the 2005 Design Basis Threat (DBT) Policy, has enabled the National Nuclear Security Administration (NNSA) to take advantage of cost avoidances tied to the DBT implementation plans, as well as cost savings associated with ongoing site security operations. In terms of cost avoidances, the 2008 GSP Policy allowed NNSA to eliminate approximately $195.6 million in unnecessary one-time security upgrades that were contained in the site DBT implementation plans. In addition, NNSA was able to avoid over $30.2 million in recurring annual costs associated with unneeded additional protective force personnel connected to 2005 DBT implementation plans. This has yielded a total cost avoidance of over $419.6 million from the startup period of the DBT implementation plan in 2008, through the duration of the fiscal year 2012–2016 Future Years Nuclear Security Program. In addition to these cost avoidances, NNSA is working to find efficiencies for current Category I nuclear security operations through the Zero-Based Security Review (ZBSR) initiative. Under the ZBSR, NNSA is collaborating with other organizations within the Department of Energy

(DOE) and the Department of Defense (DOD) to pilot an innovative GSP Implementation Assistance Visit (GSP–IAV) approach that provides a strong Federal-Contractor partnership in developing and implementing robust security programs that provide an acceptable level of risk and are consistent across the NNSA nuclear security enterprise and with others that have similar security missions. In our first field trial of the GSP–IAV, conducted at the Nevada Test Site, we have identified significant potential cost savings associated with protecting the Device Assembly Facility (DAF)—while maintaining exceptionally high protection levels for the facility. We are in the process of more fully evaluating these proposed changes before making any final decision on implementation. Our plans are to conduct GSP–IAV activities at all Category I NNSA sites by the end of this fiscal year. We are confident that efficiencies we expect to gain through the NNSA ZBSR initiative will enable us to meet fiscal year 2011 funding targets for safeguards and security while providing a strong security posture consistent with the Department's GSP policy.

Question. What is "The Deputy Secretary's Security Reform Initiative"—is this the "Zero-Based Security Review" you discussed in your testimony? How does this generate cost savings?

Answer. The Deputy Secretary's Security Reform Initiative and the ZBSR are separate but closely connected activities. The Deputy Secretary issued a challenge to the Department to reform the security program and develop innovative approaches to security that were capable of maintaining high levels of security but also eliminated unnecessary costs and productivity drains associated with low-value security requirements and/or security administration activities. The ZBSR is the NNSA's answer to the Deputy's challenge and since June 2009, NA–70 has been working closely with NNSA field sites and the Office of Health, Safety and Security (HSS) to comprehensively reexamine our security requirements and implementation expectations. The ZBSR has identified and will implement improvements to reduce both security costs and mission impacts, while maintaining very high levels of protection for our critical national security assets. The NNSA ZBSR approach is consistent with DOE management reform principles and is strongly supported by both the Federal and contractor communities.

NNSA's security reform initiative is built along three main tracks: (1) reforming security policy; (2) reforming the Category I nuclear security program; and (3) improving the governance of the Federal and contractor security assessment programs.

—Using field-led teams, NNSA has developed four draft security "standards" covering Information Security, Physical Protection, Protective Forces, and Program Management & Planning. The standards will document NNSA expectations for implementing existing DOE directives that are tailored to our nuclear security enterprise.

—The ZBSR teams used a "first-principles" approach to ensure that security requirements meaningfully contribute to the goal of protecting national security assets and actually reduce security risks. The teams also focused on driving consistency with current national standards into the core set of NNSA security requirements.

—For high-consequence nuclear security operations, NNSA is working closely with HSS and DOD in piloting an innovative risk assessment approach that is fully consistent with the new DOE Graded Security Protection (GSP) policy. The pilot will focus on a peer-reviewed assessment of adversary scenarios and risk informed security response options.

—NNSA is working to improve the management structure for our nuclear security operations. This includes developing new approaches for making senior-level, risk-informed decisions on matching security capabilities to meet credible threats and determining the necessary and sufficient investments for nuclear security operations. This initiative is closely aligned with the Committee of Principals (CoP) task to more closely align DOD and NNSA nuclear security approaches.

—As a compliment to improving our risk management processes, the Office of Defense Nuclear Security (DNS) is also working on a standardization initiative to improve the efficiency of NNSA nuclear security operations. This effort will involve the use of the NNSA Supply Chain Management Center (SCMC) as a common sourcing and procurement mechanism, and will provide cost savings through the standardization of protective force uniforms, shields, and select items of security equipment. In addition to the SCMC approach to leveraging larger buys, DNS has coordinated with DOD's Joint Munitions Command to be able to buy ammunition from their contracts. Savings are realized both in unit price as well as avoidance of site overhead taxes—which can exceed 50 percent at some sites. For ammunition not available through

DOD, the Service Center will set up contracts with commercial vendors at pre-negotiated prices for all sites to be able to order from.

—Due to the self-regulatory nature of the NNSA security program, both line management oversight and Independent Oversight will be needed in this new model to provide feedback on performance and provide assurance to all stakeholders that NNSA can effectively perform its vital national security missions. Enhancing contractor assurance systems are a major focus in improving our performance assurance processes. We will all continue to ensure that we have the right level of Federal oversight provided by NNSA Site Offices. Additionally, NNSA is working with HSS to ensure that the Office of Independent Oversight will continue to provide us with extremely valuable feedback on the effectiveness of our security program.

Question. Can you assure us these cost savings measures do not have a detrimental effect on security?

Answer. Absolutely, physical security remains a core NNSA mission capability and we will continue to focus on this area in the future. NNSA is working closely with the Department to ensure our security reform initiatives are carefully targeted to eliminate unnecessary costs and remove barriers to improving the productivity of our national security mission, while maintaining the highest standards for the protection of our critical national security assets. We intend to carefully monitor the implementation of our reform efforts and will be working to improve the capabilities of our site office Federal staff to provide comprehensive oversight of the contractor's implementation of our security program requirements. In addition, we are partnering with the HSS organization to find innovative ways to strengthen Independent Oversight activities as well as improve our ability to apply inspection lessons-learned across the NNSA enterprise.

DEFENSE NUCLEAR NONPROLIFERATION

Question. In the fiscal year 2011 budget the significant funding increase requested for U.S. Surplus Fissile Material Disposition is largely due to the consolidation of 3 major construction projects in this account: the Mixed Oxide Fuel Fabrication Facility (MOX), the Pit Disassembly and Conversion Facility (PDCF), and the associated Waste Solidification Building (WSB) for these facilities.

What are the technical reasons for combining this project with the Office of Environmental Management Plutonium Preparation project?

Answer. Potential programmatic, life cycle, and schedule advantages that would result from combining NNSA's PDCF project with EM's Plutonium Preparation (PuP) project include:

—Cost avoidance for surplus plutonium disposition program;

—Avoidance of expenditures for the design, construction, operation, and decontamination and demolition of an additional secure, Hazard Category 2 nuclear facility;

—Greater program and schedule flexibility through an incremental approach to project execution;

—Cost avoidance at PANTEX by establishing early surplus pit storage at SRS; and

—Load leveling of Secure Transportation resources.

Question. Will PDCF be operational in time for the MOX facility to operate without pause?

Answer. DOE has planned for PDCF to begin operations several years after the start-up of the Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF). To fill the feedstock gap, DOE is relying on several options including: (1) disassembling surplus pits at LANL (ARIES) in order to produce at least 2 metric tons of plutonium oxide for MFFF; (2) processing 7.8 metric tons of additional non-pit material suitable for MFFF feedstock currently under the jurisdiction of the Office of Environmental Management at the Savannah River Site; (3) working with nuclear utilities interested in irradiating MOX fuel to adjust the quantity and timing of initial fuel deliveries; and (4) planning to start-up limited processes in the PDCF to produce early feedstock for MFFF.

Question. The fiscal year 2011 budget request includes $100 million for Russian Surplus Fissile Material Disposition to meet a portion of the U.S. $400 million pledge. Additional funds to fulfill this pledge are not included in the FYNSP. When are requests anticipated? How did NNSA determine that $100 million was needed this year? What will it pay for and over how long?

Answer. DOE is requesting $100 million in fiscal year 2011 to demonstrate to Russia that the United States is serious about fulfilling our $400 million commitment and to begin work that will enable Russia to start disposition in 2018 as called

for in the amended Plutonium Management and Disposition Agreement (PMDA). Work to be undertaken includes removing part of the BN–600 reactor that breeds plutonium, configuring the BN–800 reactor to operate as a burner rather than a breeder of plutonium, establishing a capability to fabricate surplus weapon-grade plutonium into MOX fuel, and establishing a monitoring and inspection regime. Additional funding will be sought once DOE and Rosatom reach agreement on areas of U.S. assistance and once the majority of the initial $100 million has been costed. We anticipate that the last $100 million increment of the $400 million will be requested over a number of years beginning in fiscal year 2018 timeframe to be paid to Russia on a pro rated basis for each metric ton of plutonium disposed of (e.g., approximately $2.7 million per metric ton).

HUMAN CAPITAL

Question. How does NNSA ensure that the nuclear enterprise (Federal and management and operation contractors) sustains the skills needed for current and future missions-including those skills needed for currently inactive missions, such as test readiness?

Answer. The NNSA and its Management and Operating (M&O) contractors proactively pursue the development of the next generation nuclear security enterprise workforce.

—A robust Stockpile Stewardship Program (SSP) provides key opportunities to attract and retain the science, technical, and engineering workforce. SSP promotes skill-building and exercising of talent by conducting, for example, complex integrated experiments at the Nevada Test Site, and on the major NNSA facilities, such as the National Ignition Facility (NIF), Dual-Axis Radiographic Hydro-test Facility (DARHT), Joint Actinide Shock Physics Experimental Research (JASPER), and Z—the pulsed power machine.

—In addition, active life extension programs, such as the B61 LEP, further exercise the full spectrum of development work, from advanced and exploratory concepts through product realization, and develop the critical intuition, judgment and confidence present only in experienced scientists and engineers who have applied their skills to real nuclear weapons design and development work. This work is essential to attracting and retaining the scientists and engineers necessary to sustain the Nation's nuclear deterrent.

—Critical skills for less active missions must also be maintained. The Underground Nuclear Weapon Test readiness program is an example. Test-readiness skills are exercised through major science experiments at the Nevada Test Site and the Sub-Critical experiments that take place in U1a, an underground tunnel system.

—Further, knowledge preservation programs have been in place since the end of nuclear testing, archiving underground test data, countless documents, and hundreds of videotaped interviews to ensure that should a decision be made to resume nuclear testing, the skill mix needed will be readily reconstituted.

Question. How have external programs and activities ("work for others") helped or hindered the enterprise to sustain critical skills?

Answer. The nuclear complex has a long history of performing strategically aligned work for others (WFO) programs with the express intent of maximizing the technical value to the NNSA and to other agencies in meeting their national security mission requirements. NNSA and WFO programs not only help sustain existing critical competencies and technologies, but enable the development and maturation of new leading edge science, technology, and associated critical skills that would otherwise not be possible. Examples of NNSA mission critical capabilities that provide benefit to and receive benefit from aligned WFO programs include:

—Materials (including energetic and non-energetic material design, synthesis, testing, and characterization from the nano- to the macro-scale);

—Information science & technology (including the full range of modeling, simulation, visualization, and knowledge-creating integration of large data sets to maintain exquisite situational awareness, perform intelligence assessments, or make science-based predictions of complex systems);

—Science of signatures (including nuclear forensics, integrated systems for remote modeling, detection of nuclear and radiological material, and the prevention of technological surprise); and

—Systems engineering (low volume production against stringent safety, security, and reliability requirements throughout an extended service life, robust command and control, exacting performance in challenging diverse environments).

Regardless of funding source, work such as advanced supercomputing, fundamental material science, design and production of unique microelectronics and sub-

systems, and deployment of fully engineered systems (e.g., B61 LEP, nonproliferation systems, satellites) exercises the full spectrum of science, technology, and engineering skills of the Nuclear Security Enterprise on an ongoing basis to the joint benefit of NNSA and WFO agencies. Additionally, the diverse and demanding technical work portfolio enables the Nuclear Security Enterprise to attract and retain the best talent in many critical skill areas.

Question. To date, how does NNSA identify critical skill gaps at an enterprise-wide level?

Answer. Each M&O contractor identifies the critical skill gaps. A comprehensive, enterprise-wide inventory of these skills and capabilities is being developed to pinpoint capabilities at risk, identify gaps, and develop productive recruitment/retention strategies.

Question. What assistance does NNSA provide to management and operation contractors for recruiting and retention efforts? What changes, if any, is NNSA planning to make regarding its role sustaining critical skills enterprise-wide?

Answer. NNSA and M&O contractors encourage the development of the next generation workforce with succession planning programs in the form of institutes, fellowships, internships, capstone projects, and post-doctoral appointments. Among other outcomes, these institutes and collaborations build relationships with students to improve their recruitment potential, and they also offer educational programs to personnel to strengthen their individual critical skills. Beneficial temporary reassignments, including detail assignments, job swaps, and acting management roles, have been found to benefit the "sending" as well as the "receiving" organization.

One key program NNSA uses to address critical skill gaps is Laboratory Directed Research and Development (LDRD). The LDRD program promotes highly innovative exploratory research among the scientists, technicians, and engineers to respond to present national security mission needs and to anticipate future ones. The program funds projects that pursue technological solutions to the most urgent challenges facing our Nation or that promote science and engineering foundations that will lead to new research and development.

Senator DORGAN. It is an increase in funding for some very important programs. And the questions that have been raised, I think, are questions you, as a manager, I'm sure, raise every day. How do we do this? How do we do it effectively and efficiently?

Mr. D'AGOSTINO. Right.

Senator DORGAN. How do we give the taxpayer full value for their money on these important security issues?

Mr. D'AGOSTINO. Right.

SUBCOMMITTEE RECESS

Senator DORGAN. So, we thank all of you for your willingness to be here.

Mr. D'AGOSTINO. Thank you.

Senator DORGAN. This hearing is recessed.

[Whereupon, at 11:27 a.m., Wednesday, March 10, the subcommittee was recessed, to reconvene subject to the call of the Chair.]