[H.A.S.C. No. 114–90]

HEARING

ON

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2017

AND

OVERSIGHT OF PREVIOUSLY AUTHORIZED PROGRAMS

BEFORE THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED FOURTEENTH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON STRATEGIC FORCES HEARING

ON

FISCAL YEAR 2017 BUDGET REQUEST FOR ATOMIC ENERGY DEFENSE ACTIVITIES

HEARING HELD
FEBRUARY 11, 2016

U.S. GOVERNMENT PUBLISHING OFFICE
98–957 WASHINGTON : 2016

For sale by the Superintendent of Documents, U.S. Government Publishing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2104 Mail: Stop IDCC, Washington, DC 20402–0001

SUBCOMMITTEE ON STRATEGIC FORCES

MIKE ROGERS, Alabama, *Chairman*

TRENT FRANKS, Arizona
DOUG LAMBORN, Colorado, *Vice Chair*
MIKE COFFMAN, Colorado
MO BROOKS, Alabama
JIM BRIDENSTINE, Oklahoma
J. RANDY FORBES, Virginia
ROB BISHOP, Utah
MICHAEL R. TURNER, Ohio
JOHN FLEMING, Louisiana

JIM COOPER, Tennessee
LORETTA SANCHEZ, California
RICK LARSEN, Washington
JOHN GARAMENDI, California
MARK TAKAI, Hawaii
BRAD ASHFORD, Nebraska
PETE AGUILAR, California

DREW WALTER, *Professional Staff Member*
LEONOR TOMERO, *Counsel*
MIKE GANCIO, *Clerk*

CONTENTS

Page

STATEMENTS PRESENTED BY MEMBERS OF CONGRESS

Cooper, Hon. Jim, a Representative from Tennessee, Ranking Member, Subcommittee on Strategic Forces 2
Rogers, Hon. Mike, a Representative from Alabama, Chairman, Subcommittee on Strategic Forces 1

WITNESSES

Connery, Hon. Joyce, Chairwoman, Defense Nuclear Facilities Safety Board ... 6
Klotz, Lt Gen Frank G., USAF (Ret.), Administrator, National Nuclear Security Administration 3
Regalbuto, Hon. Monica, Assistant Secretary for Environmental Management, Department of Energy 5

APPENDIX

PREPARED STATEMENTS:
Connery, Hon. Joyce 53
Klotz, Lt Gen Frank G. 27
Regalbuto, Hon. Monica 44
Rogers, Hon. Mike 25

DOCUMENTS SUBMITTED FOR THE RECORD:
Statement of Admiral James F. Caldwell, Deputy Administrator for Naval Reactors, National Nuclear Security Administration 65
Memorandum for the President from the Secretary of Energy 69
Section 3119 of the National Defense Authorization Act for Fiscal Year 2016 70

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING:
Mr. Bishop 73

QUESTIONS SUBMITTED BY MEMBERS POST HEARING:
Mr. Bishop 92
Mr. Cooper 87
Mr. Garamendi 91
Mr. Larsen 90
Mr. Rogers 77
Mr. Wilson 93

FISCAL YEAR 2017 BUDGET REQUEST FOR ATOMIC ENERGY DEFENSE ACTIVITIES

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON STRATEGIC FORCES,
Washington, DC, Thursday, February 11, 2016.

The subcommittee met, pursuant to call, at 2:01 p.m., in room 2118, Rayburn House Office Building Capitol Visitor Center, Hon. Mike Rogers (chairman of the subcommittee) presiding.

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

Mr. ROGERS. Good afternoon. This subcommittee will come to order. We want to welcome to our hearing the President's fiscal year 2017 budget request for the defense-related activities carried out by the Department of Energy [DOE].

I want to thank our witnesses for being here today. I know it takes a lot of time and energy to prepare for these hearings, and I really appreciate your commitment in doing that.

Our witnesses today are Lieutenant General Frank Klotz, retired, Administrator, NNSA [National Nuclear Security Administration]; Ms. Monica Regalbuto, Assistant Secretary for Environmental Management, U.S. Department of Energy; and Ms. Joyce Connery, Chairwoman, Defense Nuclear Facilities Safety Board.

General Klotz, you have some very able folks here today in support of you. I would like to recognize them. Admiral Frank Caldwell. Brigadier General S.L. Davis. And Anne Harrington. Glad to have you all here.

If any of our members have questions directly for these folks later in the hearing, we will ensure that they can step forward to the table where the microphones are and respond. And I know Admiral Caldwell has a supplemental written statement that will be introduced and accepted for the record.

[The prepared statement of Admiral Caldwell can be found in the Appendix on page 65.]

Mr. ROGERS. Before I hand the floor over to the ranking member, let me briefly highlight just a few key issues for today's hearing.

First, since this is our subcommittee's first budget hearing for fiscal year 2017, let me put a marker down. Let's start the year by putting to rest the notion that our nuclear deterrent is unaffordable. That is just ridiculous. A recent think tank report got it right, quote: "The issue is not affordability—rather, it is a matter of prioritization. Should nuclear forces, and by extension their moderni-

zation programs, be given higher priority in the budget than other forces?"

We have an answer to this question. From the Secretary of Defense, the Deputy Secretary of Defense, and the Joint Chiefs of Staff, and everyone down the line, senior leaders across the board have stated clearly and unequivocally that our nuclear deterrent is, quote, "the Nation's highest priority mission," close quote.

So our senior military and civilian leaders have shown that our nuclear deterrent will be robustly supported even if it is at the expense of other capabilities, because it is our top priority. These programs are not optional, and are at the core of U.S. security and international stability. And at the very center of the core are the people and the programs at NNSA that provide our Nation with our nuclear deterrent.

General Klotz, we are happy to have you yet again at our subcommittee representing the dedicated individuals who work at our nuclear enterprise. Their important contributions to the Nation are largely unsung, but we certainly thank them and know what you do and appreciate it. And once again, the subcommittee will take a detailed look at the NNSA's budget request and scrub it hard to ensure it is meeting the Nation's military priorities.

When it comes to meeting the day-to-day needs of the military, NNSA must also focus on the programs that set it up for the future. That means having the people and skills, the infrastructure and tools, and the structures and processes to meet the highly uncertain nuclear future. I fear we are focusing too much on the present and not enough on the future. But we will be getting into that during the question period.

Thank you again to our witnesses for being here. I look forward to the discussion. Let me now turn it over to the ranking member for any opening statement he would like to make.

[The prepared statement of Mr. Rogers can be found in the Appendix on page 25.]

STATEMENT OF HON. JIM COOPER, A REPRESENTATIVE FROM TENNESSEE, RANKING MEMBER, SUBCOMMITTEE ON STRATEGIC FORCES

Mr. COOPER. Thank you, Mr. Chairman. And I would like to also welcome the witnesses.

It is rare in the modern Congress to have essentially a good news hearing, but I think this one of those hearings. I am thankful for that, because at least at the authorizing level, it looks like these programs are going to be fully funded. In some cases, there are increases. In a few cases, there are decreases. The leading one is the Nuclear Nonproliferation account, which goes down some 6 or 7 percent. But we all have to acknowledge that Russia is not exactly a willing partner these days to help us contain that massive hoard of fissile material.

But the key bit of good news for folks back home is here you have a highly contentious Congress that is agreeing on what is our number one defense priority, and we are agreeing on a bipartisan basis, and we are putting our money where our mouths are. So, that is good news for the American people, that is good news for America, that is even good news for this Congress.

So essentially we have a lot to celebrate here. We will have not only questions today, but also questions in the closed session to follow this. But we should not overlook the central fact that the administration and the Republican majority in Congress are keeping the nuclear deterrent safe, secure, and reliable.

Thank you, Mr. Chairman.

Mr. ROGERS. I thank the ranking member.

We now will ask each of our witnesses to make an opening statement summarizing their written testimony, and I would like to ask you to keep it to 5 minutes so we will have time for questions. Your written testimony will be, without objection, accepted for the record.

First, we will recognize General Klotz for any opening statement you would like to summarize.

STATEMENT OF LT GEN FRANK G. KLOTZ, USAF (RET.), ADMINISTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION

General KLOTZ. Thank you very much, Chairman Rogers and Ranking Member Cooper and members of the subcommittee. Thank you for the opportunity to present the President's fiscal year 2017 budget request for the Department of Energy's National Nuclear Security Administration. We value this committee's leadership in national security, as well as its robust and abiding support for the missions and people of NNSA. And thank you especially, Chairman, for your kind words for all the people, men and women out there, who work in this important enterprise.

Our budget request, which comprises more than 40 percent of DOE's budget, is $12.9 billion, an increase of nearly $358 million, or 2.9 percent, over the fiscal year 2016 enacted level. This budget request continues the administration's unwavering commitment to NNSA's important and enduring missions.

These missions are defined in the NNSA's Strategic Vision, which we released in the fall of last year. These missions include to maintain a safe, secure, and effective nuclear weapons stockpile; to prevent, counter, and respond to the threat of nuclear proliferation and nuclear terrorism; and to support the capability of our nuclear-powered Navy to project power and to protect American and allied interests around the world.

To succeed, NNSA must maintain crosscutting capabilities that enable each of these core missions. Again, as defined in our Strategic Vision, these crosscuts focus on advancing science, technology, and engineering; supporting our people and modernizing our infrastructure; and developing a management culture focused on safety, security, efficiency, and adopting the best practices across government and the commercial world.

If you would like, Mr. Chairman, I would be very pleased to provide a copy of this document to the subcommittee for the record.†

Mr. ROGERS. Without objection.

[The document is retained in the committee files.]

†The DOE/NNSA Enterprise Strategic Vision—August 2015 can be found at https://www.scribd.com/document/290190538/NNSA-Enterprise-Strategic-Vision-August-2015

General KLOTZ. The budget materials and briefings we have provided over the past 2 days to you and to your staff describe NNSA's major accomplishments in the year 2015, as well as the underlying rationale for our budget proposal for fiscal year 2017. Let me just briefly highlight a few points, given the time we have.

First and foremost, the United States has maintained a safe, secure, effective, and reliable nuclear weapons stockpile without nuclear explosive testing for over 20 years. As a result of consistent funding provided by this Congress, supported by this subcommittee, and the significant improvements that NNSA has made in program management over the past 2 years, all of our life extension programs are on schedule and within budget.

NNSA's science and technology base also continues to yield critical modeling and simulation data in support of the stockpile. In fact, just last year the National Ignition Facility at Lawrence Livermore Laboratory increased its shot rate, its experiment rate, from 191 in the year 2014 to 356 in the year 2015, almost doubling it, including the first-ever experiments involving plutonium.

Our budget request also supports recapitalization of NNSA's aging research and production infrastructure, most notably the facilities where we perform our major uranium, plutonium, tritium, and other commodity operations. Of significance, NNSA completed the first subproject for the Uranium Processing Facility, entitled Site Readiness, last year, on time and $20 million under budget.

As a whole, NNSA will arrest the growth of deferred maintenance in fiscal year 2016 thanks to the appropriations bill which the Congress passed at the end of last year, and with your support for our budget request, we can begin to reduce deferred maintenance in fiscal year 2017.

This year's request for the Defense Nuclear Nonproliferation account, as Mr. Cooper pointed out, is 6.8 percent lower than the fiscal year 2016 enacted levels, for two reasons. First, prior year carryover balances are available to execute some of the programs. And second, as you know, we proposed terminating the Mixed Oxide Fuel Fabrication Project and pursuing a dilute and dispose approach as a faster, less expensive path to meeting our national commitment and international agreement to dispose of 34 metric tons of excess weapons-grade plutonium.

The request for our third appropriation, the Naval Reactors Program, keeps pace with mission needs and continues NNSA's commitment to the three major initiatives: the *Ohio*-Class Reactor Plant System Development; the Land-based S8G Prototype Refueling Overhaul; and the Spent Fuel Handling Recapitalization Project in Idaho.

I am pleased to be joined by my colleague, Admiral Frank Caldwell, who is testifying, I believe, for the first time in front of this subcommittee.

For each of these missions, NNSA is driving improvements in our management and governance. For all of our programs, we have instituted rigorous analyses of alternatives, defined clear lines of authority and accountability for Federal and contract program and project management, improved cost and schedule performance, and ensured that the Federal project directors and contracting officers

had the appropriate skill mix and professional certifications to effectively manage NNSA's work.

Our budget request for Federal salaries and expenses reflects an increasing emphasis on improving program and project management across all our mission pillars.

So in closing, Mr. Chairman, the nuclear security enterprise continues to make significant progress. Through discipline, careful planning, and your continued and strong support, we believe we can make smart investments to build on that progress and meet new challenges in the future. Again, thank you for the opportunity to appear before you today.

[The prepared statement of General Klotz can be found in the Appendix on page 27.]

Mr. ROGERS. Thank you. There was, as the ranking member said, a lot of good news in that opening statement, none better than seeing that you are finally starting to cut into the backlog of deferred maintenance. That is a nice milestone. I appreciate that.

Ms. Regalbuto, you are recognized for 5 minutes.

STATEMENT OF HON. MONICA REGALBUTO, ASSISTANT SECRETARY FOR ENVIRONMENTAL MANAGEMENT, DEPARTMENT OF ENERGY

Secretary REGALBUTO. Good afternoon, Chairman Rogers, Ranking Member Cooper, and members of the subcommittee. I am pleased to be here today to represent the Department of Energy's Office of Environmental Management and to discuss the work that we have already successfully accomplished and what we plan to accomplish under the Presidential fiscal 2017 budget request.

The total budget request for the EM [Environmental Management] program is $6.1 billion, which includes $673 million of proposed mandatory funding and $5.3 billion for defense environmental cleanup activities. The request would allow EM to maintain a safe and secure posture across the complex, while maximizing our work on compliance activities.

I would like to take this opportunity to highlight a number of EM's recent accomplishments. At the Savannah River Site, the 4,000th canister of radioactive glass was recently poured. Achieving the milestone enabled us to close the seven high-level waste tanks. At the Moab Site, half of the estimated 60 million tons of uranium mill tailings have been removed and shipped to an engineering disposal cell. At Hanford, we have completed cleanup of the bulk of River Corridor, including more than 500 facilities and 1,000 remediation sites.

The fiscal 2017 budget request will allow us to continue to make progress in ongoing cleanup priorities. Among EM's top priorities is the safe reopening of WIPP [Waste Isolation Pilot Program]. EM continues to support the recovery from two incidents at the facility that interrupted the nationwide program for the disposition of transuranic waste. The request will support initiating waste emplacement operations by December of 2016.

At Idaho, the request will support the Integrated Waste Treatment Unit. This facility is planned to treat approximately 900,000 gallons of sodium-bearing waste. At the Savannah River Site, we will complete construction and ramp up commissioning activities at

the Salt Waste Processing Facility, which will significantly increase our ability to treat tank waste. In addition, we will continue to receive, store, and process spent nuclear reactor fuel.

At the Hanford Office of River Protection, the request supports continued construction of the Low-Activity Waste Facility, Balance of Plants, and outfitting the Analytical Laboratory, which are the centerpiece of the Department's plan to begin the direct feed of low-activity waste as soon as 2022.

The request for Richland allows us to continue important work on the Central Plateau and to complete the demolition of the Hanford Plutonium Finishing Plant, once one of the most dangerous buildings in the complex.

At Oak Ridge, the request supports continuing design for the Outfall 200 Mercury Training Facility at the Y–12 National Security Complex and complete the demolition of Building K–27, the last gaseous diffusion enrichment process building. It will mark the first time that a gaseous diffusion enrichment site has been completely decommissioned.

With the most challenging cleanup remaining, we understand the importance of technology development in reducing the lifecycle costs and enhancing our effectiveness. To help address many of the technical challenges involved, the request reflects a total investment in technology development of $33 million. The funding will allow us to continue to integrate robotics technologies into our efforts to help improve overall work and quality of life by easing the performance of physically demanding tasks.

In closing, I am honored to be here today representing the Office of Environmental Management. We are committed to achieving our mission, and we will continue to apply innovative strategies to complete our mission safely. Thank you, and I will be very pleased to take your questions.

[The prepared statement of Secretary Regalbuto can be found in the Appendix on page 44.]

Mr. ROGERS. I thank you.

Ms. Connery, you are recognized for 5 minutes.

STATEMENT OF HON. JOYCE CONNERY, CHAIRWOMAN, DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Ms. CONNERY. Thank you. Thank you, Chairman Rogers, Ranking Member Cooper, and distinguished members of the subcommittee. Thank you for this opportunity to testify on behalf of the Defense Nuclear Facilities Safety Board on the fiscal 2017 budget request.

My name is Joyce Connery, and I have been with the Board for 6 months. I am joined today by two of my fellow Board members, Bruce Hamilton and Sean Sullivan. Bruce and I are both new to the Board this year.

As you may know, the Board is the only agency that provides independent safety oversight to DOE's defense nuclear facilities. These facilities and their operations are essential to our Nation's defense, as noted by the chairman. They perform work that includes the assembly and disassembly of nuclear weapons, surveillance of the stockpile, fabrication of plutonium pits and weapons components, production and recycling of tritium, nuclear criticality

experiments, subcritical experiments, and a host of activities to address radioactive legacy waste resulting from 70 years of nuclear weapons operations.

The Board's vitally important oversight mission is achieved with a relatively small budget and a cadre of technical experts. In fiscal year 2017, the Board's budget request is $31 million and supports 120 FTEs [full-time equivalents]. With these resources—and our staff, our people are truly the Board's greatest resource—we will continue to perform independent safety oversight throughout the complex.

Within our oversight responsibilities, we strive to proactively address safety issues at DOE defense nuclear facilities to eliminate threats to public health and safety.

Specifically, we advise DOE and NNSA on the need to effectively integrate safety into the design of new facilities, strengthen the protection of workers through improvements in work planning and conduct of operations, and to improve emergency preparedness and safety culture at sites with defense nuclear facilities.

In recent years, the Board has increased its emphasis on emergency preparedness and response capabilities, making recommendations both complex-wide and site-specific. The complex's aging facilities and resultant backlog of maintenance have created additional concerns. Delays to NNSA's efforts to modernize its infrastructure can exacerbate safety-related issues and require that ongoing work be performed in degrading nuclear facilities that do not meet modern safety standards.

The Board supports DOE and NNSA's efforts to develop new defense facilities, and we will continue to work closely with them to integrate safety into their designs at the earliest possible stages.

While increasing emphasis has been placed on emergency management preparedness and response, I personally have also been concerned with the state of the oversight throughout the defense nuclear complex and staffing challenges at both the Federal and contractor level.

Difficulties retaining proper technical competencies have led to concerns of insufficient Federal safety oversight, and similar concerns on the contractor side impact conduct of operations.

Staffing shortages may be the result of an aging and retiring workforce, competition for highly skilled workers, and compounded by the slow pace of the clearance adjudication process.

Chairman Rogers, Ranking Member Cooper, this concludes my opening statement. Thank you again for the opportunity to be here today. We at the Board look forward to our continued work with this subcommittee, and I stand ready to respond to any questions you may have.

Thank you.

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

Mr. ROGERS. Thank you. I thank all the witnesses. We will now move into questions, and I will start with myself.

General Klotz, I want to go back to what I was just talking about a minute ago on that deferred maintenance issue. From our conversation yesterday, my understanding is this year's fiscal year 2016 budget allowed you to basically take care of deferred mainte-

nance, to make sure we don't add to the backlog, so basically level funded. And from my understanding, this new number in fiscal year 2017 will allow you to cut into the backlog.

Can you explain that? Because there seems to be some dispute that this number would allow you to actually go into the backlog, as opposed to level funding for another year.

General KLOTZ. Thank you very much for the question, Chairman Rogers. Thank you also very much for your leadership on this important issue.

When I was in the military, I learned that when dollars are constrained, the first dollar always goes to operations and maintenance of the weapons systems, and the dollar that goes to fix infrastructure and facilities always gets deferred to the right. And if you keep deferring it to the right, over time you get to a point where your facilities and your infrastructure reach a tipping point and it begins to impact both operations and maintenance, as Chairman Connery just mentioned, in some of our facilities.

This year we are asking for $3.7 billion in our ask—our backlog is at $3.7 billion—and what we are asking for will, in fact, begin to cut into it. I think the confusion—and I went back yesterday after having discussed this with you and your staff yesterday—I think the confusion is the chart that we used with the staff yesterday is of such a scale, that the decrease that we see——

Mr. ROGERS. It doesn't show up.

General KLOTZ [continuing]. Doesn't show up. It doesn't show up. I think that is the explanation I have been given by my staff.

But 2 years ago, the Secretary of Energy asked all elements of DOE to halt the growth of deferred maintenance, and we have worked very hard to put that into our budget. And because of the support we got from you last year, we begin to level it in 2016, and if we get the request that we want, we will begin to see that go down.

Mr. ROGERS. Great. Thank you.

You heard me say in my opening statement that NNSA may be a bit too focused on the present at the expense of the future. Now, I am the first to admit that this subcommittee has long been asking you and your predecessors at NNSA as a whole to get on top of today and the issues like life extension programs and big ongoing construction projects, and to your credit, you guys have made some significant steps in those areas.

So I commend you, while also encouraging you to keep reaching. That is the job of an oversight committee, after all. But it is very important that we be thinking about these future endeavors. So let's talk about the future.

Reviewing the budget request, I am deeply concerned that NNSA is proposing major cuts to three forward-looking, future-focused lines that develop and mature safety and security technology for future warheads. By quick math, it looks like the request would short the safety and security technology maturation activities by almost $140 million. That seems very shortsighted, like we are simply locking ourselves into current technologies.

Why is the NNSA proposing this? Is it just lack of funds?

General KLOTZ. Yes, sir. The short answer is yes, sir. We have a lot of projects we want to cover in our weapons activity account

in fiscal year 2017. I think the most important thing is we have very stable life extension programs, which are a very high priority for us and a very high priority for the Department of Defense, which expresses its requirements through the Nuclear Weapons Council. We are on important glide paths on all of those, and we wanted to make sure that those continue.

So it was some tough decisions made, and of course General Davis is here to dig into the details if you would like. We do that. We felt that was the way in which we could balance the budget within the top line that we were issued.

Mr. ROGERS. Great. Congress has recently authorized two new programs for NNSA that are future-focused, the Stockpile Responsiveness Program and the Prototype Nuclear Weapons for Intelligence Estimates, PNWIE, program. These programs were created by Congress at the urging of several expert commissions and are about ensuring NNSA has the capabilities and skills to respond quickly to new or changing environments. The Stockpile Responsiveness Program is only a few months old because of the veto silliness on the fiscal year 2016 NDAA [National Defense Authorization Act], but tell me what NNSA is doing to implement it in this year and fiscal year 2017.

General KLOTZ. Thank you very much, Chairman. This, by the way, is something which we fully support. It is extraordinarily important that throughout our complex we continuously exercise all the capabilities associated with maintaining the stockpile from design, to development, to manufacturing, to prototype building, and conducting the various experiments that test the various components associated with the nuclear weapons stockpile.

Many of these activities are already exercised on a routine basis as we do our life extension program and as we do the routine surveillance and the science, technology, and engineering that lies under that.

NNSA has recognized for some time the importance of maintaining stockpile responsiveness. And in the fall of 2014, the Defense Programs, which has responsibility for weapons activities, chartered what they call the Defense Program Advisory Group and asked them what was required to challenge the workforce and sustain the capability for the future. They have, in fact, had meetings up till now, and we are expecting a report early in 2016 which deals with that.

One approach that we are using that I would like to highlight here that has not received much publicity is that we are engaged with the United Kingdom on a program called the Joint Technology Demonstration, the JTD. The United Kingdom, like us, faces many of the same issues associated with sustainment of their nuclear deterrence, and we are working together to craft a program in which designers and program managers in both the U.S., and our laboratories, and in the United Kingdom will work together through design, develop, and issues associated with manufacturing of components for nuclear weapons.

We are also carrying out a number of hydrodynamic and subcritical experiments. We have asked for money in this budget to, in fact, enhance our capabilities to conduct those types of experiments at the Nevada National Security Site, and we have also engaged

in a number of other certification readiness exercises associated with it.

So we need to come back with you—you are right, the NDAA was signed late in the year—and come back to you with a more fully fleshed-out plan about how we propose to go ahead. But we fully share both the sentiment and the objective as laid out in the program.

Mr. ROGERS. Great. I thank you very much.

The Chair now recognizes the ranking member for any questions he may have.

Mr. COOPER. Thank you, Mr. Chairman. You cited some of the good news from General Klotz as being the work on deferred maintenance. I would like to point out another feature of his testimony, which as he said at least a couple of times, the magic words "on time and under budget." We rarely hear those in Washington, but we are always grateful when we do, and I appreciate the good work that went into producing those twin excellent results, on time and under budget.

I would also like to single out the Naval Reactors Program. I have always been fond of it. It is an amazing tradition of excellence the Naval Reactors has pursued over lo these many years, and I just appreciate Admiral Caldwell and his predecessors making that tradition of excellence happen.

We have talked about some of the good news. Some of the bad news is a contractor, a former contractor at Y–12, B&W Y–12, now called B&W XT, mishandled classified documents. And one of those was a Security Level 1 violation, which is, quote, "actual or high potential for adverse impact on national security."

NNSA proposed a $240,000 fine, but then, apparently, according to this excellent article by Frank Munger of the Knoxville News Sentinel, NNSA decided to waive the fine, and the reasons given were the contractor's timely response to the concerns, even though later in the article it says that employees have been saying that this mishandling of classified information had been going on for years.

So, to me, a prompt response is pretty weak after mistakes have been happening for years. And then the other reason was that B&W was already penalized by having its management fee reduced for fiscal year 2014.

This, to me, sounds like 40 lashes with a wet noodle. This is not going to increase contractor accountability. So is this the right way to handle this misdisposal of classified information?

General KLOTZ. Thank you for the question, Mr. Cooper. We take the protection of classified information, as well as the security of our facilities, extraordinarily seriously, and that is why in this particular case the Department of Energy Enterprise Assessments Office, Office of Enforcement, inquired into this matter and came to the conclusions that it did.

With respect to holding the contractor, in this case the former contractor, at Y–12 accountable, one of the things that the article said, I can't remember if it was the one you cited or other articles, said that we had decided—that I had decided that somehow that B&W had suffered enough. That word does not show up anywhere in the letter which I sent to B&W on this issue.

We made our decisions based on the rules which we follow. And there are a number of things which can be used to mitigate the civil penalty that is assessed via a formula. One of those is whether we have already in a sense penalized or held the contractor responsible through the annual fee determination process.

In the case of B&W Y–12, we had already subtracted from the fee which they were eligible for as part of the annual program review and used that as a mitigator to say, while perhaps maybe not under law this falls into the concept of double jeopardy, it certainly does in terms of principle. So we hold them accountable in terms of the financial fines either through the fee determination process or through the fine process.

There have been a couple of instances in the past, at least since I have been sitting in the seat at NNSA, where we have, in fact, imposed a civil fine because we had not taken a fee for that particular activity. But this was specifically noted in the process of determining what their fee was for that year, and so that is why we mitigated that.

Mr. COOPER. Well, it is hard to unscramble this egg and we can't turn back the clock. But I am curious, I am assuming B&W and/or its subsidiaries are still doing work for NNSA?

General KLOTZ. They are.

Mr. COOPER. The Department?

General KLOTZ. They are, in the broader DOE, yes.

Mr. COOPER. Are any steps taken to make sure that they treat classified information more carefully at their other?

General KLOTZ. Well, we hold everybody to the same standard, whether it is B&W or any of our other M&O [management and operations] contractors or subcontractors. They know what the expectations are. That is why we carry out the oversight that we do, and that is why we thoroughly investigate, document, and make as a matter of public record when they have fallen short in protecting either the facilities or the classified information they have responsibility for.

Mr. COOPER. I know that you have high standards, but you haven't always been on duty at NNSA, and the workers here told the reporter that this had been going on for years. So you have to wonder.

General KLOTZ. Yes, it had been, yes.

Mr. COOPER. Assuming there is a second violation by B&W, will the fines be tougher the second time?

General KLOTZ. That is I think what you call a hypothetical question, Congressman. So, we take this very, very seriously, and clearly we have to judge each and every case on the specific facts associated with that. But, again, protection of classified material, protection of the facilities which our M&O partners have responsibility for is one of our top priorities.

Mr. COOPER. Thank you, Mr. Chairman. I will withhold further questions at this time.

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

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

Thank all of you for being here.

General, I always especially appreciate men like yourself who have given their entire life to the cause of freedom.

General, do you believe that the need for our capability to detect, identify, and characterize nuclear weapons programs, illicit diversion of special nuclear materials, and nuclear detonations is something that is increasing in this environment or decreasing, that need to be able to do that?

General KLOTZ. The need is always there to be able to detect, and particularly as more and more countries look to civil nuclear power as a way to solve their energy demands and needs in the future, the ability to detect whether or not the materials that are associated with civil nuclear power are being diverted for military uses will continue to be a challenge and a greater challenge. It is something that we spend a lot of time thinking about. Our laboratories and our production facilities are engaged in significant research and development to ensure that we are staying ahead of the power curve on this.

Mr. FRANKS. So it is your testimony that that need for that capability is an increasing need?

General KLOTZ. Yes.

Mr. FRANKS. And if you were to identify any particular area, and I realize it is sort of a broad question, is there anything that is especially of concern to you, of special concern to you, as far as being able to sense any special threat out there that we face in terms of proliferation?

General KLOTZ. I think if we talked about specific threats, we would need to do that in the classified session, which is coming after this. But, again, what we would look for would be those types of indicators which suggest that a country—or, for that matter, a nonstate actor—is, one, trying to acquire special nuclear materials, and then using those special nuclear materials, diverting those special nuclear materials either for use in nuclear proliferation or nuclear terrorism.

Mr. FRANKS. Well, notwithstanding the ranking member's, I think, cogent comments related to the diminishing involvement on the part of Russia with us, what would you say that the diminished request here for the DNN [Defense Nuclear Nonproliferation] and R&D [Research & Development] on budget, how does that square with the increasing need for the capability but a lesser request for the funding to do that?

General KLOTZ. I would be happy to answer that, but since we did invite Anne Harrington and Admiral Caldwell and General Davis up, would it be okay if Anne addressed that because that falls directly, since she came all this way?

Mr. FRANKS. Sure.

General KLOTZ. Would that be okay?

Mr. FRANKS. Absolutely.

Ms. HARRINGTON. First, thank you very much for the question and particularly for recognizing what is very important in my line of business, which is the evolving and emerging threats.

To go back to your initial question very quickly on the R&D side, we have two programs specifically in the R&D area that address those issues. We have what we call our Material and Weapons Development Program that looks at nuclear fuel cycle, especially chal-

lenges from noncooperative foreign environments. That looks at advanced technologies for detecting proliferant activities, such as nuclear material production, related facilities, equipment processes, and that is about $80 million that is in this budget for that.

And then we have another area called Ground-Based Nuclear Event Monitoring, and that is the detection of low yield and evasive tests, seismic and radionuclide detection, and exploitation of what we call our dynamic sensor network data, so how do we better interpret the data that we are collecting through all of the systems that we have deployed.

So the goal of these is to meet emerging requirements, to detect and significantly lower the thresholds at which we can detect evasive testing.

Mr. FRANKS. So the reason for the decreased budget is?

Ms. HARRINGTON. The decrease in the budget in R&D specifically?

Mr. FRANKS. In the DNN and the R&D, yes.

Ms. HARRINGTON. That is related to a one-time expenditure that we don't have to make again. Part of it is related to a classified case where we have found a solution to a problem that we thought we were going to have to extend into future budgets.

Mr. FRANKS. Well, Mr. Chairman, I am hoping we can maybe get their perspective on any characterization of the North Korean claim to have detonated a hydrogen bomb at some point, but in the closed session. And with that, my time is out. Thank you, sir.

Mr. ROGERS. I thank the gentleman.

The Chair now recognizes the gentleman from the great State of Alabama, Mo Brooks, for 5 minutes.

Mr. BROOKS. I will defer, Mr. Chairman.

Mr. ROGERS. The Chair now recognizes the gentleman from Nebraska, Mr. Bridenstine, for 5 minutes.

Oklahoma. I am sorry. That was very disparaging. I did not mean to say that.

Mr. BRIDENSTINE. I am not going to comment. I love Nebraska too. All right.

General, the Secretary of Energy wrote to the Director of OMB [Office of Management and Budget] that because of a recent Committee on Foreign Investment in the United States, CFIUS, decision to not block a foreign company from buying a microchip foundry here in the U.S., NNSA will need a quarter of a billion dollars between fiscal year 2018 and fiscal year 2021 to mitigate the loss of this secure, trusted manufacturing capability.

I understand these capabilities are needed both for NNSA's nuclear weapons work as well as for its satellite programs. Since I am assuming this was the Mubadala Development Company out of the UAE [United Arab Emirates], can you explain why CFIUS didn't block this transaction?

General KLOTZ. Thank you for the question. Sorry, I am glad we clarified it was from Oklahoma since my mom is from there.

Mr. BRIDENSTINE. She sounds like a great lady.

General KLOTZ. Two things at first, and then I will get to your question. First of all, of course the responsibility for CFIUS falls to the Treasury Department, and our role in the Department of Energy and in the National Nuclear Security Administration is to pro-

vide technical advice for decisions that they are making. The second thing is that the specifics of this case we can raise in closed session.

Let me just say in general, however, you said something that was very, very important, and that is that a trusted supply of radiation-hardened advanced microsystems is extraordinarily important to the nuclear weapons effectiveness in our stockpile. There is sort of an assumption that radiation hardness is radiation hardness and that the radiation hardness for space systems also would apply for nuclear, but we have a much more stringent standard for that.

We have done much of our work in the area of both research and development and fabrication of radiation-hardened microelectronics at Sandia National Laboratories in Albuquerque in a facility known as MESA, which I think stands for Microsystems and Engineering Science Application. It is a facility which, quite frankly, is long in the tooth, to go back to the chairman and the ranking member's comments, and needs to be recapitalized, and it is a facility which is using technology which, quite frankly, the commercial world has now gone beyond, for instance, using 6-inch silicon wafer processing as opposed to what is now the standard 8-inch.

So we have asked for $14 million in this year——

Mr. BRIDENSTINE. Let me interrupt just real quick. Did DOE or DOD [Department of Defense] participate in the CFIUS decision-making process on this transaction?

General KLOTZ. Yes.

Mr. BRIDENSTINE. And nobody recommended blocking it?

General KLOTZ. That, I can't go into here.

Mr. BRIDENSTINE. Okay. But you do recognize that a quarter billion dollars is a lot of money to the taxpayer for this decision?

General KLOTZ. I recognize, I would state that having a supply of trusted radiation-hardened advanced microsystems is very, very important to the United States and to the nuclear weapons stockpile.

Mr. BRIDENSTINE. So you cannot comment on how much it is going to cost?

General KLOTZ. No. For our specific piece of what we would do within the NNSA, as I said, we will spend money this year to complete analysis of alternatives to see where we go forward on the MESA project.

Mr. BRIDENSTINE. But it will cost something. Do you know where that money would come from?

General KLOTZ. It will come out of the NNSA budget, to do the work that we do within NNSA.

Mr. BRIDENSTINE. Have there been other CFIUS cases, for example, the decision to not block IBM's sale of its server business to China's Lenovo?

General KLOTZ. That, I don't know.

Mr. BRIDENSTINE. Okay. We need to be very cognizant of these new liabilities for NNSA and the DOD.

With that, Mr. Chairman, I will yield back.

Mr. ROGERS. I thank the gentleman.

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

Mr. WILSON. Thank you, Mr. Chairman. And thank you for allowing me to participate.

I understand the service of each of the witnesses today, and I look forward to continue working with you. I especially recognize your dedication, as an alumnus of DOE headquarters, and as being the only Member of Congress who has worked at Savannah River Site, which I am very grateful that I represent, along with Congressman Jim Clyburn of South Carolina.

I ask, first, the unanimous consent to distribute a memo dated November 20, 2015, from Secretary Ernest Moniz to the President, along with section 3119 of fiscal year 2016 NDAA.

Mr. ROGERS. Without objection.

[The information referred to can be found in the Appendix beginning on page 69.]

Mr. WILSON. I appreciate Chairman Mike Rogers providing for discussion multiple times before this subcommittee a major issue: in shifting the United States plutonium disposition strategy from the Mixed Oxide Fuel Fabrication Facility, MOX, at the Savannah River Site, this method would require, by shifting, a renegotiation of the Plutonium Management Disposition Agreement with the Russian Federation.

In a memo dated November 20, 2015, from Secretary Moniz to President Obama, the Secretary says in regard to the shifting of the disposition strategy, quote: So far we have no read on the MFA, the Russian Ministry of Foreign Affairs, response. This issue will need further interagency work in the context of overall complicated U.S.-Russia relations.

There is a proposal abandoning MOX where $4.5 billion has been invested for 70 percent completion, and shifting to a strategy that even Secretary Moniz admits we do not know or have any idea when the Russian Federation—what they will ask in return.

I am concerned the admittedly complicated U.S.-Russia relations will lead to a swift and conciliatory negotiation which is not realistic. I am concerned that we are without a plan if Russia asks for concessions that the United States cannot make. If so, we risk incurring the immense cost of resurrecting MOX and reassembling the workforce and infrastructure that are crucial to its success.

We know that the proposed repository for the down-blended weapons-grade plutonium would be with the Waste Isolation Pilot Plant in Carlsbad, New Mexico. We know that the facility remains closed, yet WIPP received less funding at the request of fiscal year 2017 than fiscal year 2016.

Keeping this in mind, there have been assurances that WIPP would open as soon as possible, but how long after WIPP reopens will it be operational?

Additionally, on Tuesday night, led by Governor Nikki Haley and Attorney General Alan Wilson, the State of South Carolina was forced, as required by law, to sue the Department of Energy for up to $100 million in 2016, payable to the State of South Carolina, as a result of failure to move 1 ton of plutonium from South Carolina despite the State twice pushing back a deadline. This puts at risk the people of South Carolina and Georgia as the repository. Terminating this project does nothing to move material out of the region. This will not save taxpayers' dollars and will jeopardize nonprolif-

eration. This committee should reject the President's proposal to terminate, and we should continue to move forward with construction to convert weapons-grade plutonium into green fuel.

And in conclusion, General Klotz, section 3119 of the fiscal year 2016 NDAA directed the Department to submit, with the budget justification materials for fiscal year 2017, an updated performance baseline. Can you tell us what the update is on this baseline status?

General KLOTZ. Thank you very much, Congressman Wilson. And let me just say at the outset, I know and respect the passion and the intensity which you bring to this particular issue, and I very much appreciate the fact that over the past couple years we have been able to work very closely together, in a very collegial and civil manner, as we work through what is an obvious difference of opinion on terms of policy. And I especially appreciate the many trips that you have taken to the MOX Facility with our people to discuss the issues that are there.

There was a lot in your question, but let me just say that, with respect to the Plutonium Management Disposition Agreement, the administration, the U.S. Government remains firmly committed to disposing of all 34 metric tons of excess, surplus weapons-grade plutonium, as we have agreed with Russia in that agreement. But over the last couple of years there have been several efforts to analyze the current MOX fuel approach and alternatives, such as the 2014 DOE review, which was actually the first thing I testified——

Mr. WILSON. And, General, I can't interrupt a general, because you are too good, but the question about the baseline, what is the status of that? And the reason I like visiting MOX, you have got a lot of professionals there that I like.

General KLOTZ. Thank you, sir. And believe me, they appreciate seeing you come down and other senior leaders come down.

The language in the NDAA was, I think, passed in November of 2015, if I am not mistaken. I am told by my staff it takes as much as 18 to 24 months to do a performance baseline, and even more than I suggested to the chairman yesterday, several million dollars to do that. So there is just no way, unless we can make time stop between November of 2015 and to the submission of President's budget, to do a full performance baseline in terms of the costs as requested there.

Our sense still is, based on the reports that we have done, is that the dilute and dispose option is still a much less expensive and a faster way of disposing of this excess weapons-grade plutonium.

Mr. WILSON. And I look forward to the baseline.

General KLOTZ. Yes, sir.

Mr. WILSON. Thank you.

Mr. ROGERS. And I would say he does make a good point, baseline is required. So I would ask you to try to expedite that if you could.

The Chair now recognizes Mr. Bishop for 5 minutes.

Mr. BISHOP. Thank you. I appreciate that.

And, General, I would like to follow up on the line that Mr. Wilson was giving. I have the same concern about MOX, I am just not as civil as he is. But in both versions of the NDAA that was passed last year, including the one that was signed by your boss, it does

clearly say that you shall carry out construction and project-support activities relating to the MOX Facility. And the 3119 section to which Representative Wilson referred does clearly say that you have to include those budget justification materials submitted to Congress in support of the DOE budget for fiscal year 2017 and that updated performance line. It is not an option.

So I do have questions. I haven't seen that baseline either. You admit that it is not there. But how are you now disregarding the direction that was given you in the bill, in the law, and terminating this project? How can you respond to that?

General KLOTZ. Well, first of all, on the construction, we understand in the 2016 Authorization, Appropriations Acts, we are to continue construction. We will continue construction through the end of 2016. And our proposal, of course, in the fiscal year 2017 budget is to terminate the program. And the reason that we make that argument is because the several studies that we have done over the past 2 years indicate that there is a much faster, much cheaper way to dispose of this. The costs of——

Mr. BISHOP. Then let me interrupt with that one, because if there is indeed a cheaper way, a cheaper technology, it is not necessarily a proven technology. You have given us no specific cost estimates. There is no methodology of that. I mean, you haven't given us the data that you need to do before you go in that direction.

It seems to me that once again the administration is clearly bypassing the intent of Congress and not giving us the data that was required before you make that change in direction. You have no ability to close this facility.

General KLOTZ. Well, the technology and the process by which we do it is proven. There is already close to 5——

Mr. BISHOP. Have you submitted that to us?

General KLOTZ [continuing]. 5 metric tons of diluted plutonium currently in the facility at WIPP. So we know how to do that.

Mr. BISHOP. But, General, that has to be part of the baseline you submit to us. That is the decision we get a chance to make here. And I think this committee has spoken several times over the past few years about the direction we expect you to go in that.

General KLOTZ. Congressman, you are absolutely right. This is the proposal of the administration in our fiscal year 2017 budget proposal. We recognize, as I used to say when I taught political science, the President proposes and the Congress disposes. This is our proposal.

Mr. BISHOP. Would you have that printed and given to some other people within the administration?

Could you also, though, recognize this? Will there be a stop-work order coming from any of the organizations here on this project before Congress gets to once again reaffirm what we want you to do?

General KLOTZ. We discussed this just before coming over here. What I have been told by my staff is we will continue construction all the way through fiscal year 2016 as laid out by the direction of Congress.

Mr. BISHOP. Will there be a stop-work proposal after that?

General KLOTZ. I don't know. I don't know the answer to that. Let me get back to you on that.

[The information referred to can be found in the Appendix on page 73.]

Mr. BISHOP. I appreciate that. But I once again would like to reaffirm, I think you have seen the direction that Congress has given in last year's NDAA. Any deviation from that would be problematic at best.

I will yield back.

General KLOTZ. I take your point.

Mr. ROGERS. I thank the gentleman.

The Chair now recognizes Mr. Lamborn for 5 minutes.

Mr. LAMBORN. Thank you, Mr. Chairman.

General Klotz, I am going to ask you a single question, also following up on MOX, and then give the rest of my time to Representative Wilson. Regarding the termination, the possible termination of the MOX project, how would that be received by the Russians?

General KLOTZ. That is a very good question, Congressman, and one of the issues which we have to work through. The Plutonium Management Disposition Agreement says that this plutonium will be disposed of by irradiation or by other means agreed to by the parties. So we can engage in a discussion with the Russians about this particular issue.

In fact, we have already—the Russians came to us earlier in the life of this agreement and asked to change the approach that they were taking, and we agreed to that. In fact, then Secretary of State Clinton and Foreign Minister Lavrov signed an agreement in 2010 which memorialized that.

Now, I think the Secretary of Energy has said this clearly. If not, I will say it. We have been engaged at our level in discussions with our counterparts in Russia about the possibility of this particular approach. They have listened to us very respectfully. Quite frankly, their view is, when you are ready to go forward with this, we will sit down and we will discuss it in more detail. And I suspect, just like it will be on this side of the Atlantic, it will be a whole-of-government approach in Russia to what their final position will be.

But from the technical point of view, the people that we deal with, they fully understand what we are doing, they understand the economics of it, they understand the physics and the chemistry of it, and agree that we have a topic that we can sit down and discuss.

Mr. LAMBORN. Okay. Mr. Chairman, I will defer the rest of my time to Representative Wilson.

Mr. WILSON. Thank you, Congressman.

And again, General Klotz, thank you for—all of you—for being here. But it does concern me that the law was clear, section 3119, and so I hope whatever the baseline is, it can be provided. Because every other report that we have received, there were flaws, as far as I am concerned, because each one failed to recognize that we have a proven technology, the mixed oxide fuel fabrication, because this has been done in France for nearly 50 years.

And then I find, when they claim that there are cost overruns, so much of that is because there have been changes in specifications which the contractors then have, by the Department, and which then causes additional cost. And, sadly, it is really frus-

trating to me that people would be critical when, in fact, it was due to changes in specifications.

And then other issues that are just mind-numbing. When it is stated that for the green fuel, the fuel that will be produced, that there are not contracts for the fuel, well, in the industry, people don't buy fuel till the last second because of the variations of price, which we see today in other energy fields. And when I hear that argument, I am thinking that is just—and you hadn't made it, but other people have, other reports.

And over and over again there are misstatements that are being made that I think should be addressed and to achieve what can be so important of nonproliferation at a time with, sadly, the rising tensions with the Russian Federation. Over and over again I can see positive of why this should be done, and so I really hope there will be a change of course.

And beyond that, Dr. Regalbuto, in the budget request for 2017, the traditional Savannah River risk management operations control point was separated into two control points, environmental cleanup and nuclear material management, causing considerable confusion. Can you explain the Department's rationale for this, and were the site contractors notified of the change?

Secretary REGALBUTO. Thank you for your question, Mr. Wilson. I do recognize that this year the way the tables have been printed out are a little bit different than they have been done in the past, and we are providing in our Web site a sheet for everybody to follow and track exactly where everything is, which we will be happy to provide to you too.

In general, the budget request for Savannah River went up $111 million. This is actually a recognition of the mission of H Canyon, HB-Line, L-Basin, and L-Area. So with the plus-up of $111 million, it allows us to continue to support those decisions.

In addition to our traditional milestones, which are related to the processing of tank waste, we also have an opportunity to initiate another in-tank technology that we will be testing starting this year and then into 2018.

Mr. WILSON. Thank you very much for referencing H Canyon Facility, a world-class treasure that not everybody knows. So thank you.

Secretary REGALBUTO. I do use it every day, so I am very happy that our funding is properly——

Mr. WILSON. I am happy to meet you any time and point it out. Thank you.

Secretary REGALBUTO. Thank you.

General KLOTZ. Could I just add, Mr. Chairman, of course H Canyon is extraordinarily important, not only to the work on the Environmental Management side, but also to NNSA. This is a key facility and one which we need to maintain for the long term.

Mr. ROGERS. Great. I thank the gentleman. I thank the witnesses. I wanted to do a second round of questions, but we are going to be called for votes in a little over a half an hour. So we will just submit those to you and ask that you provide written responses for the record in the next 10 or 12 days.

But with that, I would like to recess for about 5 minutes while we go to 2337 for the classified portion—oh, 2216. Faking you off there. We will see you in 2216 in just a few minutes.

[Whereupon, at 3:03 p.m., the subcommittee proceeded in executive session.]

A P P E N D I X

FEBRUARY 11, 2016

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

FEBRUARY 11, 2016

Opening Remarks – As Prepared for Delivery
The Honorable Mike Rogers,
Chairman, Subcommittee on Strategic Forces
House Armed Services Committee

Hearing on the "Fiscal Year 2017 Budget Request for Atomic Energy Defense"

February 11, 2016

Good afternoon. The subcommittee will come to order.

Welcome to our hearing on the President's Fiscal Year 2017 budget request for the defense-related activities carried out by the Department of Energy.

I want to thank our witnesses for being here today. We know how much work goes into preparing for these hearings and we thank you. Our distinguished witnesses are:

Lt Gen Frank Klotz (USAF, ret.)
Administrator
National Nuclear Security Administration

Ms. Monica Regalbuto
Assistant Secretary for Environmental Management
U.S. Department of Energy

Ms. Joyce Connery
Chairwoman
Defense Nuclear Facilities Safety Board

General Klotz, you have some very able folks in support of you today that I also want to recognize:

Admiral Frank Caldwell;
Brigadier General S.L. Davis; and
Ms. Anne Harrington.

If any of our Members have questions directly for these folks later in the hearing, we'll ensure they can step up to the table to answer as needed.

And I know that Admiral Caldwell has a supplemental written statement that I will introduce for the record.

Before I hand the floor over to the Ranking Member, let me briefly highlight just a few key issues for today's hearing.

First, since this is our subcommittee's first budget hearing for FY17, let me put a marker down. Let's start out the year by putting to rest this notion that our nuclear deterrent is "unaffordable."

This is—quite simply—ridiculous.

A recent think-tank report got it right:

> "the issue is not affordability—rather, it is a matter of prioritization. Should nuclear forces, and by extension their modernization programs, be given higher priority in the budget than other forces?"

We have the answer to this question. From the Secretary of Defense, the Deputy Secretary of Defense, the Joint Chiefs of Staff—and everyone on down the line.

Senior leaders across the board have stated clearly and unequivocally that our nuclear deterrent is the nation's "highest priority mission."

So our senior military and civilian leaders have shown that our nuclear deterrent will be robustly supported—even if at the expense of other capabilities—because it is our top priority.

These programs are not optional, and are the core of U.S. security and international stability.

And at the very center of that core are the people and programs at NNSA that provide our nation with our nuclear deterrent.

General Klotz, we are happy to have you yet again at our subcommittee representing the dedicated individuals who work in our nuclear enterprise. Their important contributions to the nation are largely unsung, but we certainly thank them and know you do too.

And once again, the subcommittee will take a detailed look at NNSA's budget request and scrub it hard to ensure it is meeting the military's priorities.

While it continues to meet the day-to-day needs of the military, NNSA must also focus on the programs that set it up for the future. That means having the people and skills, the infrastructure and tools, and the structures and processes to meet a highly uncertain nuclear future.

I fear we're focusing too much on the present and not enough on the future. But we'll get into that during the question period.

Thank you again to our witnesses—I look forward to the discussion.

With that, let me turn to our ranking member for any statement he would like to make.

Statement of Lt. Gen. Frank G. Klotz, USAF (Ret)
Administrator
National Nuclear Security Administration
U.S. Department of Energy
on the
Fiscal Year 2017 President's Budget Request
Before the
Subcommittee on Strategic Forces
House Committee on Armed Services

February 11, 2016

Chairman Rogers, Ranking Member Cooper, and Members of the Subcommittee, thank you for the opportunity to present the President's Fiscal Year (FY) 2017 budget request for the Department of Energy's (DOE) National Nuclear Security Administration (NNSA). It is a pleasure to be here this afternoon. We value this Committee's strong support for the nuclear security mission, and for the people and institutions that are responsible for executing it.

The President's FY 2017 budget request for NNSA is $12.9 billion, this is an increase of $357.5 million or 2.9% over the FY 2016 enacted level. The request is approximately 43% of the DOE's total budget, and 67% of DOE's total 050 budget.

The NNSA has a unique and special responsibility to maintain a safe, secure, and effective nuclear weapons stockpile for as long as nuclear weapons exist; to prevent, counter, and respond to evolving and emerging nuclear proliferation and terrorism threats; to provide nuclear propulsion to our Navy as it protects American and Allied interests around the world; and to support our outstanding NNSA federal workforce. By supporting overall growth, this budget request represents a strong endorsement of NNSA's vital and enduring missions, and is indicative of the Administration's unwavering commitment to a strong national defense.

NNSA's missions are accomplished through the hard work and innovative spirit of a highly talented federal and Management and Operating (M&O) workforce committed to public service. To provide this team the tools they need to carry out their complex and challenging task, both now and in the future, we must continue to modernize our scientific, technical, and engineering capabilities and infrastructure. In doing so, we are mindful of our obligation to continually improve our business practices, and to be responsible stewards of the resources that Congress and the American people have entrusted to us.

The FY 2017 budget request also reflects the close working partnership between NNSA and the Department of Defense (DoD). NNSA works closely with DoD to meet military requirements, support our Nation's nuclear deterrence capabilities and modernize the nuclear security enterprise. I would also note, that as in previous years, DoD is carrying in its FY 2017 budget request separate funding in FY 2018 and beyond that will be reallocated annually to NNSA's Weapons Activities and Naval Reactors.

I want to thank the committee for its support of the FY 2016 budget request and look forward to your continuing support in FY 2017. We have made some tough decisions and tradeoffs to meet both military commitments and nuclear security priorities. Without congressional support, modernization of our nuclear enterprise, implementation of our long-term stockpile sustainment strategy, and sustainment of our nonproliferation and prevention and response capabilities could be at risk. The program we have proposed is highly integrated and interdependent across the four accounts.

Details of the FY 2017 budget request for the NNSA follow:

Weapons Activities Appropriation

For the Weapons Activities account, the FY 2017 budget request is $9.2 billion, an increase of $396.2 million, or 4.5% above the FY 2016 enacted levels. This account provides funds for the Defense Programs portfolio, which is responsible for all aspects of the stockpile stewardship, management, and responsiveness programs; the enterprise-wide infrastructure sustainment activities managed by our Office of Safety, Infrastructure, and Operations; NNSA's physical and cybersecurity activities; and the secure transportation of nuclear materials.

Maintaining the Stockpile

Last year, the work of the science-based Stockpile Stewardship Program (SSP) allowed the Secretaries of Energy and Defense to certify to the President for the 20th time that the American nuclear weapons stockpile remains safe, secure, and reliable, without the need for underground explosive nuclear testing. This achievement is made possible each year by essential investments in state-of-the-art diagnostic tools, high performance computing platforms, and modern facilities, which are staffed by NNSA's world-class scientists, engineers, and technicians.

For Directed Stockpile Work (DSW), the FY 2017 budget request is $3.3 billion, a decrease of $57.3 million, or 1.7% below the FY 2016 enacted levels. These reductions will not restrict NNSA's ability to annually assess system performance and reliability or maintain the schedule for Life Extension Programs (LEP).

The major LEPs are a fundamental part of this account. The $222.9 million requested for the W76-1 warhead LEP directly supports the Navy and will keep the LEP on schedule and on budget to complete production in FY 2019. We continue to make good progress on the B61-12 LEP, which will consolidate four variants of the B61 gravity bomb and will improve the safety and security of the oldest weapon system in the U.S. nuclear arsenal. With the $616.1 million requested, we will remain on schedule to deliver the First Production Unit (FPU) in FY 2020. NNSA is responsible for the refurbishment of the nuclear explosives package and new bomb electronics, while the Air Force will provide the tail kit assembly under a separate acquisition program. When fielded, the B61-12 bomb will support both Air Force strategic long-range

nuclear-capable bombers and dual-capable fighter aircraft, providing extended deterrence to our allies and partners, and allow retirement of the last megaton class weapon in the inventory, the B83 gravity bomb.

In July 2015, we began Phase 6.2 (Feasibility Study and Design Options) for the W80-4 cruise missile warhead LEP. The FY 2016 budget request included $195 million to accelerate the FPU by two years to FY 2025, a decision made by the Nuclear Weapons Council (NWC) in late 2014. The FY 2015 budget request included $10 million to start the program. We had initially planned a ramp-up of Phase 6.2 study activities beginning in FY 2016 to support the NWC FPU decision. However, as a result of the FY 2016 continuing resolution, we were unable to begin the planned ramp-up activities until just recently. Furthermore, because of the delay in receiving FY 2016 funding, the program cannot execute the full FY 2016 enacted amount this year. As a result, a significant amount of the program's FY 2016 funding will carry over into FY 2017. Consequently, the FY 2017 budget request is $25.3 million over the FY 2016 budget request, rather than $117 million over the FY 2016 budget request, as previously projected. While this delayed start will affect planned technology maturation activities in Phase 6.2A (Design Definition and Cost Study), we still fully expect to meet the planned FPU date in FY 2025 to support the Air Force Long Range Stand Off (LRSO) program.

In FY 2015, the NWC approved additional scope for the W88 Alteration (ALT) 370 to meet an emerging requirement. NNSA is now accelerating the new Conventional High Explosive (CHE) refresh work to match the original ALT schedule. As a result, we are synchronizing the full program to transition seamlessly to the Production Engineering phase in February 2017. In preparation for that phase transition, NNSA will publish a baseline cost report by the end of this fiscal year. This budget request reflects these efforts and includes $281.1 million in FY 2017 to support the FPU in FY 2020.

Also within DSW, the FY 2017 budget request includes $1.3 billion for Stockpile Systems and Stockpile Services. These programs sustain the stockpile pursuant to the direction given in the President's Nuclear Weapon Stockpile Plan (NWSP). In doing so, the programs deploy unique skills, equipment, testers, and logistics to enable the daily operations of the nation's nuclear deterrent. Specifically, these programs produce and replace limited life components (LLCs) such as neutron generators and gas transfer systems, conduct maintenance, surveillance, and evaluations to assess weapons reliability, detect and anticipate potential weapons issues such as the recent CHE refresh issue mentioned above, and compile and analyze information during the Annual Assessment process.

The pursuit and application of technological advancements to enhance safety and security while reducing life cycle costs of the stockpile runs through all of these activities. The development of Integrated Surety Architectures enhancing transportation safety and security is an example of these efforts.

Within DSW, the FY 2017 budget request also includes $577.8 million for the Strategic Materials account to maintain NNSA's ability to produce the nuclear and other materials needed to

support the enduring stockpile. This program includes Uranium Sustainment, Plutonium Sustainment, Tritium Sustainment, Domestic Uranium Enrichment (DUE), lithium and other strategic materials. Funding for Uranium Sustainment will enable enriched uranium operations in Building 9212, a Manhattan Project-era production facility at the Y-12 National Security Complex in Oak Ridge, Tennessee, to end in FY 2025, and allow the bulk of this obsolete building to shut down. The sustainment and modernization of enriched uranium capabilities and the acceleration of Area 5 de-inventory will reduce safety and mission risks in the near term.

Plutonium Sustainment funds replacement and refurbishment of equipment and the critical skills needed to meet the pit production requirements as outlined in the National Defense Authorization Act (NDAA) for Fiscal Year 2015.

Tritium Sustainment ensures the Nation's capability and capacity to provide the tritium necessary to meet national security requirements, either through production at Tennessee Valley Authority nuclear power plants or by recovering and recycling tritium from returned gas transfer systems.

The DUE program continues its efforts to ensure that we have the necessary supplies of enriched uranium for a variety of national security needs.

The FY 2017 budget request also includes $69 million for Weapons Dismantlement and Disposition, an increase of $16.9 million, 32.7% above the FY 2016 enacted level, which includes funds to support the President's goal to accelerate the dismantlement rate of previously retired weapons by 20%. This will enable NNSA to dismantle the weapons retired prior to FY 2009 by 2021, rather than the original goal of 2022. It will also result in increased Management and Operating staff at both the Pantex Plant in Amarillo, Texas and the Y-12 National Security Complex.

For Research, Development, Test, and Evaluation (RDT&E), the FY 2017 budget request is $1.9 billion, an increase of $36.2 million, 2% above the FY 2016 enacted level. This includes $663.2 million for the Advanced Simulation and Computing (ASC) Program, an increase of $31 million for the Advanced Technology Development and Mitigation (ATDM) subprogram that supports high performance computing on the path to exascale, and $87.1 million for Advanced Manufacturing Development (AMD), a decrease of $43 million. The decrease reflects a realignment from technology development investments to address higher NNSA priorities. The budget request focuses on continued investment in advanced manufacturing opportunities and improving the manufacturing processes for components that support multiple weapons to maximize the benefits of these investments. Advanced Manufacturing invests in technologies that will reduce the time and cost of current manufacturing methods, replaces obsolete processes, and supports manufacturing developments for future weapon upgrades. Additive Manufacturing, also known as 3-D printing, aids in developing and manufacturing components for stockpile and weapon technology applications. The overall RDT&E request reflects small increases for the Science Program ($442.0 million, an increase of $18.9 million) to achieve two

subcritical experiments per year before the end of the FYNSP, and begin alterations to U1a tunnel complex at Nevada to prepare for these experiments: Inertial Confinement Fusion Ignition and High Yield Program ($523.9 million, an increase of $11.9 million) and the Engineering Program ($139.5 million, an increase of $8.1 million).

The Inertial Confinement Fusion Ignition and High Yield program has spearheaded ongoing improvements in management and operational efficiencies at NNSA's major high energy density (HED) facilities, including the National Ignition Facility (NIF) at Lawrence Livermore National Laboratory (LLNL) in California and the OMEGA facility at the University of Rochester in New York. In FY 2015, NIF markedly improved its shot-rate efficiency with over 350 key experiments performed (compared to 191 in FY 2014) in support of the SSP. This level of effort represents an 85% increase over the previous year and an 18% increase over its goal for 2015.

NNSA has taken major steps in high performance computing to deliver on its missions and play a leading role to support the President's Executive Order on the National Strategic Computing Initiative (NSCI). In 2015, Los Alamos National Laboratory (LANL) and Sandia National Laboratories (SNL) received the first hardware delivery for NNSA's next generation high performance computer, Trinity. This computer will initially have eight times more applications performance than the Cielo machine it is replacing. NNSA also continued its CORAL collaboration with LLNL, the DOE Office of Science national laboratories at Oak Ridge and Argonne, IBM, and other vendors. CORAL will help develop next generation computing platforms to dramatically improve our ability to run increasingly complex codes and will be a significant step on the path to exascale computing.

NNSA collaborates with the DOE Office of Science while making these much needed investments in exascale computing. The FY 2017 budget request includes $95 million from NNSA for the development of capable exascale systems.

Defense Programs also maintains the vitality of the broader National Security Enterprise. An important aspect of this effort is investing in Laboratory-, Site- and Plant-Directed Research and Development (LDRD/PDRD). Independent reviews have consistently affirmed the importance of the program to the long-term vitality of the labs. LDRD/PDRD provides basic research funding to foster innovation and to attract and retain young scientific and technical talent and is critical to the long-term sustainment of our national laboratories. Congressional support is essential to ensuring that we have both the workforce and the new developments necessary to support the nation's security into the future.

Improving Safety, Operations and Infrastructure

NNSA's ability to achieve its mission is dependent upon safe and reliable infrastructure. The age and condition of NNSA's infrastructure will, if not addressed, put the mission, the safety of our workers, the public, and the environment at risk. More than half of NNSA's facilities are over 40 years old while 30% of them date back to the Manhattan Project era. The FY 2017 budget request for Infrastructure and Operations is $2.7 billion, an increase of $442.8 million,

19.4% above the FY 2016 enacted level. This funding will help NNSA modernize and upgrade aging infrastructure and address safety and programmatic risks through strategic investments in both general purpose infrastructure and program-specific capabilities that directly support our nuclear weapons and nonproliferation programs.

To support critical programmatic activities, we are making important strides in recapitalizing our aging infrastructure and capabilities. In FY 2015, NNSA funded new and continuing projects to enhance or replace programmatic capabilities and address the risks posed by the aging infrastructure. NNSA's investment in these projects is vital to the revitalization of the NNSA enterprise. The FY 2017 budget request provides funding for more than 70 recapitalization projects. The request will also support general purpose infrastructure and program-specific capabilities through Line Item Construction projects. These projects include, for example, the Uranium Processing Facility (UPF), the Chemistry and Metallurgy Research Replacement (CMRR) project, the U1a Complex Enhancements Project (UCEP) in support of the Enhanced Capabilities for Subcritical Experiments (ECSE) portfolio, the Albuquerque Complex Project to replace the current inadequate facilities, and a project to expand the electrical distribution system at LLNL.

One of the most worrisome of the NNSA infrastructure challenges is the excess facilities that pose risks to our workers, the environment, and the mission. While many of these facilities will ultimately be transferred to the DOE Office of Environmental Management for disposition, NNSA is focusing on reducing the risk where it can. In FY 2015, NNSA successfully demolished our second non-process contaminated building at Y-12 within the past two calendar years. The FY 2017 budget request supports a number of activities to continue to address excess facilities. These activities include the transition of the Kansas City Bannister Federal Complex to the private sector for environmental remediation and redevelopment, risk reduction activities at Alpha-5 and Beta-4 at Y-12 – both of which are highly process-contaminated – and disposition of more uncontaminated facilities across the NNSA enterprise.

Our Secure Transportation Asset (STA) program provides safe, secure movement of nuclear weapons, special nuclear material, and weapon components to meet projected DOE, DoD, and other customer requirements. The FY 2017 budget request of $282.7 million includes an increase of $45.6 million, 19.2% above the FY 2016 enacted levels, to continue asset modernization and workforce capability initiatives. These initiatives include: (1) restoration of federal agent strength levels to meet the goal of 370; (2) the Safeguards Transporter (SGT) Risk Reduction Initiatives to manage the SGT beyond its design life; (3) development and testing of the selected alternative for the SGT replacement, the Mobile Guardian Transporter (MGT); and (4) replacement of vehicles and tractors.

The Office of Defense Nuclear Security (DNS) develops and implements sound security programs to protect Special Nuclear Material (SNM), people, information, and facilities throughout the nuclear security enterprise. The FY 2017 budget request is $670.1 million, a decrease of $12.8 million, or 1.9% below the FY 2016 the enacted level of $682.9 million due to one-time dedicated increases in FY 2016. After adjusting for an FY 2016 one-time $30 million

designated plus up and $13 million dedicated line item construction amounts for each year, the remaining FY 2017 operating request of $657.1 million is an increase of $17.2 million, or 2.7% above the FY 2016 enacted operating level of $639.9 million. The request manages risk among important competing demands as NNSA continues to face the challenges associated with an aging physical security infrastructure that must be effectively addressed in the coming years. To this end, DNS is conducting a Site Condition Review (SCR) of the physical security systems at all locations to facilitate the development of an enterprise-wide security systems upgrade and refresh strategy. This effort will identify and manage current and future security improvements and upgrades on a 10-year planning cycle and includes determining the condition of critical security equipment and infrastructure. A final report of this effort will provide DOE/NNSA leadership and Congressional stakeholders with consolidated and up-to-date information to enable informed decisions for fiscal planning and programming.

The SCR is being conducted within the context of important organizational improvements and management strategies published in the June 2015 Security Roadmap. The document establishes a clear vision and path forward to correcting identified security issues and promoting sustained performance within the NNSA security program. The Security Roadmap is a multi-year effort that implements key recommendations for improvement identified in past assessments; it includes a total of 57 strategic initiatives covering culture, process, infrastructure, and workforce challenges. As of the end of 2015, DNS has completed six of the initiatives and is currently working on another 20 initiatives. The remaining 31 initiatives are pending formal initiation.

For Information Technology and Cybersecurity, the FY 2017 budget request is $176.6 million, an increase of $19 million, or 12.1% above FY 2016 enacted levels. This increase will fund much needed improvement to the Information Technology and Cybersecurity program, including Continuous Diagnostic and Mitigation (CDM), Telecommunications Security, infrastructure upgrades for the Enterprise Secure Computing Network (ESN), Public Key Infrastructure (PKI), Energy Sciences Network (ESnet) program, and an increased Information Technology budget. This cybersecurity program continuously monitors enterprise wireless and security technologies (e.g., identity, credential, and access management) to meet a wide range of security challenges. In FY 2017, NNSA plans to continue the recapitalization of the Enterprise Secure Network, modernize the cybersecurity infrastructure, implement the Identity Control and Access Management project at NNSA Headquarters and site elements, and implement all Committee on National Security Systems and PKI capabilities.

Defense Nuclear Nonproliferation Appropriation

The Defense Nuclear Nonproliferation (DNN), FY 2017 budget request is $1.8 billion, a decrease of $132.4 million, 6.8% below the FY 2016 enacted levels. This appropriation covers NNSA's nuclear threat reduction mission. DNN addresses the entire nuclear threat spectrum by helping to prevent the acquisition of nuclear weapons or weapon-usable materials, technologies, and expertise, countering efforts to acquire such weapons, materials, and technologies, and responding to nuclear and radiological incidents. The FY 2017 budget request funds two

mission areas under the DNN appropriation: the Defense Nuclear Nonproliferation Program and the Nuclear Counterterrorism and Incident Response (NCTIR) Program.

Nonproliferation Efforts

NNSA made significant progress in nuclear threat reduction in 2015. Working with foreign partners, the Office of Defense Nuclear Nonproliferation removed approximately 170 kilograms of highly enriched uranium (HEU) and plutonium from several civilian sites; successfully down-blended additional HEU to achieve a cumulative total of 150 metric tons of U.S. excess, weapons-usable HEU (approximately 6,000 nuclear weapons worth of material); recovered more than 100,000 curies of disused or orphaned radioactive material; ensured the United States remains on track to fulfill the commitments made at the 2014 Nuclear Security Summit; and supported the Secretary of Energy's efforts to develop the Joint Comprehensive Plan of Action (JCPOA) by providing scientific expertise and technical options to the United States negotiating team.

The Material Management and Minimization (M^3) program provides an integrated approach to addressing the threat posed by nuclear materials through a full cycle of materials management and minimization. The primary objective of the program is to achieve permanent threat reduction by minimizing and, when possible, eliminating weapons-usable nuclear material around the world. The FY 2017 budget request is $341.1 million, an increase of $24.5 million, 7.7% above the FY 2016 enacted levels. This funding increase will accelerate reactor conversions in Kazakhstan and in the United States, as well as initiate the critical decision process to support the dilute and dispose program for domestic plutonium disposition.

The Global Material Security (GMS) program works with partner nations to increase the security of vulnerable nuclear and radiological materials and improve their ability to detect, interdict, and investigate illicit trafficking of these materials. The FY 2017 budget request for this program is $337.1 million, a decrease of $89.6 million, 21% below the FY 2016 enacted level. This decrease is possible because GMS is completing its work to protect the remaining International Atomic Energy Agency (IAEA) Category I radiological sources in the United States to meet our 2014 Nuclear Security Summit commitment, and because GMS is committed to reducing its prior year carryover balances.

The Nonproliferation and Arms Control (NPAC) program supports the nonproliferation and arms control regimes by developing and implementing programs to strengthen international nuclear safeguards; control the spread of nuclear and dual-use material, equipment, technology and expertise; verify nuclear reductions and compliance with nonproliferation and arms control treaties and agreements; and address other nonproliferation and arms control challenges. The FY 2017 budget request will fund safeguards and export control activities, including efforts specifically in support of JCPOA implementation. This funding also supports statutorily mandated activities such as technical reviews of export licenses and interdiction cases, technical support for the negotiation and implementation of civil nuclear cooperation agreements (123 Agreements), and upgrades to the 10 CFR 810 authorization process. The FY

2017 budget request for this program is $124.7 million, a decrease of $5.5 million, 4.2% below the FY 2016 enacted level. This decrease primarily reflects a return to baseline funding following the one-time increase of $3.5 million by Congress in the FY 2016 budget for improvements in the export control process, as well as cost-savings in export licensing activities achieved through operational efficiencies.

The DNN Research and Development (DNN R&D) program supports innovative unilateral and multi-lateral technical capabilities to detect, identify, and characterize (1) foreign nuclear weapons programs, (2) illicit diversion of special nuclear materials, and (3) nuclear detonations. To meet national and Departmental nuclear security requirements, DNN R&D leverages the unique facilities and scientific skills of DOE, academia, and industry to perform research, including counterterrorism-related R&D. The FY 2017 budget request for this program is $393.9 million, a $25.4 million or 6.1% decrease below FY 2016 enacted levels. The decrease in funding reflects projected savings resulting from a reduction in planned activities for arms control-related R&D and a return to the baseline Nuclear Detonation Detection (NDD) program after development of an initial mitigation path for supply chain interruptions.

Nonproliferation Construction consolidates construction costs for DNN projects. Currently, the MOX Fuel Fabrication Facility (MFFF) is the only project in this program; however, the FY 2017 budget request terminates the MOX project. The Department will complete pre-conceptual design for the dilute and dispose approach to establish Critical Decision-0 (CD-0), Approve Mission Need, and begin conceptual design in late FY 2017. The FY 2017 budget request of $270 million will be used to bring an orderly and safe closure of the MFFF. The scope and costs will be refined in subsequent budget submissions when the termination plan for the MFFF project is approved.

Nuclear Counterterrorism and Emergency Operations

DOE has adopted an enterprise-wide approach to strengthen overall preparedness to respond to a broad spectrum of potential emergencies. These emergencies include natural phenomena, such as adverse weather events or earthquakes, and man-made events, such as accidents or acts of terrorism. To better accomplish this mission, in November 2015, NNSA reorganized the Office of Emergency Operations and the Office of Counterterrorism and Counterproliferation.

Both of these organizations are supported under the Nuclear Counterterrorism and Incident Response (NCTIR) Program. In FY 2016, the NCTIR program transitioned to the DNN account in order to align all NNSA funding to prevent, counter, and respond to nuclear proliferation and terrorism. The FY 2017 budget request includes $271.9 million to support the NCTIR program, an increase of $37.5 million, 16% above the FY 2016 enacted level. Within NCTIR, NNSA continues to work domestically and around the world to prepare for and improve our ability to respond to radiological or nuclear incidents.

Our counterterrorism and counterproliferation programs are part of broader U.S. Government efforts assessing the threat of nuclear terrorism and to develop technical countermeasures. The scientific knowledge generated under this program ensures that NNSA's technical expertise

on nuclear threat devices, including improvised nuclear devices (INDs), supports and informs broader U.S. Government nuclear security policy and guides nuclear counterterrorism and counterproliferation efforts, including interagency nuclear forensics and DoD contingency planning.

NNSA's emergency response teams must deploy and respond with the most up to date equipment. The current equipment is aging, increasing maintenance expenses, and has started to impact NNSA's ability to perform its emergency response mission. The Radiological Assistance Program (RAP) remains the nation's premier first-response resource to assess a radiological incident and advise decision-makers on necessary steps to minimize hazards, but its effectiveness is beginning to be compromised by obsolete equipment. To ensure that NNSA is able to execute its radiological emergency response mission, RAP's equipment must be recapitalized regularly. Additionally, NNSA is acquiring state-of-the-art, secure, deployable communications systems that are interoperable with our Federal Bureau of Investigation and DoD mission partners, ensuring decision makers receive real-time technical recommendations to mitigate nuclear terrorist threats.

The Office of Emergency Operations is now aligned to focus on its core Department-wide all-hazards and complex-wide emergency management mission. The FY 2017 budget request for this office is $34.7 million, an increase of $9.6 million, or 38% above the FY 2016 enacted level. This will improve the emergency management system through an enterprise-wide approach that effectively increases the Department's all-hazards emergency preparedness and response capability during complex, cascading, or enduring incidents, and more effectively calls upon and leverages the assets, resources, and skills across the DOE complex. The Emergency Operations Center (EOC) will continue to be the 24/7/365 single-point-of-contact for Departmental and interagency notifications regarding situations requiring centralized management such as, national emergencies, heightened international tension, Departmental emergencies, natural disasters, or acts of terrorism. The program also manages the Emergency Communications Network, and Continuity Programs for all of DOE, including NNSA. The Office of Emergency Operations will continue to work within the DOE to develop plans to replace the existing EOC and to improve the Department's capabilities to respond to emergencies.

Naval Reactors Appropriation

Advancing Naval Nuclear Propulsion

NNSA supports the U.S. Navy's ability to protect and defend American interests across the globe. The Naval Reactors Program remains at the forefront of technological developments in naval nuclear propulsion and ensures a commanding edge in warfighting capabilities by advancing new technologies and improvements in naval reactor performance and reliability.

In 2015, Naval Reactors enabled U.S. nuclear powered warships to operate for another year safely and effectively, steaming more than two million miles in support of national security missions. Initial reactor start-up was achieved in the lead reactor plant of pre-commissioning unit (PCU) GERALD R. FORD (CVN 78), the first new design aircraft carrier propulsion plant in 40

years. This historic milestone represents the culmination of almost 20 years of dedicated and sustained effort by Naval Reactors and its field activities, our Department of Energy laboratories, nuclear industrial base suppliers, the Navy design team and the nuclear shipbuilders. This is the first step in fully testing the integrated operations of the propulsion plant, culminating in sea trials this spring. Finally, we continued our reactor plant design and reactor core manufacturing development efforts in support of the new design OHIO-class Replacement reactor plant, including the life-of-ship core.

The Naval Reactors FY 2017 budget request is $1.42 billion, an increase of $45 million, 3.2% above the FY 2016 enacted level. In addition to supporting today's operational fleet, the requested funding will enable Naval Reactors to deliver tomorrow's fleet by funding three national priority projects, and recruiting and retaining a highly skilled work force committed to the Navy and the nation. The projects include (1) continuing design of the new reactor plant for the replacement of the OHIO-class SSBN, which will feature a life-of-ship core and electric drive; (2) refueling a Research and Training Reactor in New York to facilitate OHIO-class Replacement reactor development efforts and provide 20 more years of live reactor based training for fleet operators; and (3) building a new spent fuel handling facility in Idaho that will facilitate long term, reliable processing and packaging of spent nuclear fuel from aircraft carriers and submarines.

Naval Reactors has requested funding in FY 2017 to support these projects, and to fund necessary reactor technology development, equipment, construction, maintenance, and modernization of critical infrastructure and facilities. By employing a small but high-performing technical base, the teams at our four Program sites – the Bettis Atomic Power Laboratory in Pittsburgh, the Knolls Atomic Power Laboratory and Kesselring Site in greater Albany, and our spent nuclear fuel facilities in Idaho – we can perform the research and development, analysis, engineering and testing needed to support today's fleet at sea and develop future nuclear-powered warships. Importantly, our labs perform the technical evaluations that enable Naval Reactors to thoroughly assess emergent issues and deliver timely responses that ensure nuclear safety and maximize operational flexibility. This technical base supports more than 15,000 nuclear-trained Navy sailors, who safely maintain and operate the 98 nuclear propulsion plants in the fleet 24 hours per day, 365 days per year around the globe. It will also facilitate delivery, as directed by Congress, of our conceptual plan for potential naval application of low enriched uranium.

NNSA Federal Salaries and Expenses Appropriation

The NNSA Federal Salaries and Expenses (FSE) FY 2017 budget request is $412.8 million, an increase of $49.1 million, 13.5% above the FY 2016 enacted level. The FY 2017 budget request provides funding for 1,715 full-time equivalents (FTE) and support expenses needed to meet mission requirements. We are actively engaged in hiring to that number in a thoughtful and strategic manner. The FY 2017 budget request will support 1,715 FTEs, an increase of 60 FTEs (25 above the authorized 1,690) above the anticipated number of FTEs in FY 2016, and request an additional 25 for a total of 1,740 FTEs in FY 2018 and the outyears. The exact number of

FTEs will be determined following a detailed staffing review. It also provides for a 1.3% cost of living increase and a 5.5% increase for benefit escalation. In addition, the request provides funding for additional Federal Background Investigations for security clearances and provides additional funding to the Department's Working Capital Fund, primarily for Office of Personnel Management (OPM) credit monitoring and the Department's accounting systems (iMANAGE).

In FY 2017, NNSA will continue its efforts to meet current and future workforce needs by analyzing how evolving missions are affecting job requirements. Reshaping of the workforce over the next several years will be essential, including identifying the right staffing size and skill sets and implementing professional development plans now and in the future. NNSA will also continue to streamline its operations, particularly in travel and support services, to provide a lean and efficient organization.

Management & Performance

To enhance our ability to carry out our mission and execute this budget request, we will continue to focus on improving our project management and cost estimating capabilities. In keeping with the Secretary of Energy's increased focus on Management and Performance, NNSA is committed to managing its operations, contracts and costs in an effective and efficient manner. The NNSA's Office of Acquisition and Project Management (APM) is driving continued improvement in contract and project management practices. APM is leading NNSA's effort to institute rigorous analyses of alternatives, provide clear lines of authority and accountability for federal and contractor program and project management, improve cost and schedule performance, and ensure Federal Project Directors and Contracting Officers with the appropriate skill mix and professional certifications are managing NNSA's work. NNSA participates in the Secretary of Energy's Project Management Risk Committee as a means to institutionalize and share best practices across the Department. NNSA established the Office of Project Assessments, reporting directly to the Principal Deputy Administrator, ensuring senior leadership visibility and accountability throughout the Enterprise for project performance. This office generated $33 million in cost avoidances as a result of their independent project peer reviews.

Since 2011, NNSA has delivered approximately $1.4 billion in projects, a portion of NNSAs total project portfolio, $70 million (or 5%) under original budget. Significant examples in the last year include the Uranium Processing Facility (UPF) Site Readiness Subproject, which delivered $20 million under budget; Y-12's Nuclear Facility Risk Reduction Project, which delivered $6 million under budget and 11 months ahead of schedule; and LANL's Transuranic Waste Facility Project, which is on track to complete $3 million under budget. Using the Department's best practices, the UPF and Chemistry and Metallurgy Research Replacement Facility Projects were restructured into smaller more manageable subprojects, significantly reducing project delivery risk.

NNSA is committed to encouraging competition and increasing the universe of qualified contractors, by streamlining its major acquisition processes. The most significant example was

the competitive award of the Kansas City National Security Campus M&O contract, awarded without protest, saving taxpayers $150 million and increasing the use of small businesses. As an affirmation of the quality of NNSA's acquisition management team, only four out of 103 competitive procurements were protested, with NNSA winning all protests. Finally, NNSA exceeded its small business goal by over 20%, awarding $233 million to small business in FY 2015.

NNSA will continue to focus on delivering timely, best-value acquisition solutions for all of our programs and projects. NNSA will use a tailored approach to contract structures and incentives that is appropriate for the unique missions and risks at each site. Our M&O contractors are responsible for disparate activities, ranging from research and development to industrial production. Accordingly, we will work to develop the right incentives for each circumstance and for each of our contracts.

Cost Estimating and Program Evaluation

The Office of Cost Estimating and Program Evaluation (CEPE) continues to develop its capabilities to provide trusted independent cost and resource analysis of NNSA's programs and projects. As detailed in its implementation plan, the number of CEPE federal staff will grow from a target of 15 in FY 2016 to 18 in FY 2017. CEPE will conduct independent cost estimates on the B61-12 LEP and W88 Alt 370 in FY 2016 and the W80-4 LEP in FY 2017. CEPE is also institutionalizing best practices for analysis of alternatives and leads the corporate process to build the NNSA budget.

Conclusion

The NNSA performs vital activities at home and throughout the world in support of the nuclear security mission. Its success in addressing 21st century challenges hinges upon the technology, capabilities, and infrastructure entrusted to the organization.

Again, thank you for the opportunity to appear before you today.

Lieutenant General Frank G. Klotz, USAF (Ret.)

Lieutenant General Frank G. Klotz, United States Air Force (Ret), was confirmed by the Senate on Tuesday, April 8, 2014, as the Department of Energy's Under Secretary for Nuclear Security and Administrator for the National Nuclear Security Administration (NNSA).

As Under Secretary for Nuclear Security, Lt. Gen. Klotz is responsible for the management and operation of the NNSA, as well as policy matters across the Department of Energy and NNSA enterprise in support of President Obama's nuclear security agenda.

Prior to his Senate confirmation, Lt. Gen. Klotz served in a variety of military and national security positions. As the former Commander of Air Force Global Strike Command, a position he held from 2009 to 2011, he established and then led a brand new 23,000-person organization that merged responsibility for all U.S. nuclear-capable bombers and land-based missiles under a single chain of command. From 2007 to 2009, Lt. Gen. Klotz was the Assistant Vice Chief of Staff and Director of the Air Staff. He served as the Vice Commander of Air Force Space Command from 2005 to 2007 and was the Commander of the Twentieth Air Force from 2003 to 2005.

Lt. Gen. Klotz served at the White House from 2001 to 2003 as the Director for Nuclear Policy and Arms Control on the National Security Council, where he represented the White House in the talks that led to the 2002 Moscow Treaty to reduce strategic nuclear weapons. Earlier in his career, he served as the defense attaché at U.S. Embassy Moscow during a particularly eventful period in U.S.-Russian relations.

A distinguished graduate of the U.S. Air Force Academy, Lt. Gen. Klotz attended Oxford University as a Rhodes Scholar, where he earned an MPhil in international relations and a DPhil in politics. He is also a graduate of the National War College in Washington, DC. Most recently, Lt. Gen. Klotz was a senior fellow for strategic studies and arms control at the Council on Foreign Relations.

BRIGADIER GENERAL STEPHEN L. DAVIS

Brig. Gen. S.L. Davis is the Principal Assistant Deputy Administrator for Military Applications, National Nuclear Security Administration, Department of Energy, Washington, D.C. He assists the Deputy Administrator for Defense Programs to ensure the nation sustains safe, secure, and effective nuclear weapons.

General Davis was commissioned in 1989 after graduation from Officer Training School. He has served in a variety of operational and staff assignments including commanding a Minuteman ICBM wing and the nation's only ICBM flight test squadron. His headquarters staff assignments include duty at Air Force Space Command, the Air Staff, U.S. Strategic Command and the Joint Staff.

EDUCATION
1989 Bachelor of Arts degree in Economics, Wright State University, Fairborn, Ohio
1994 Squadron Officer School, Maxwell AFB, Ala.
1997 Master of Business Administration, Embry-Riddle Aeronautical University, Daytona Beach, Fla.
2002 Masters of Military Studies, Marine Command and Staff College, Marine Corps University, Quantico, Va.
2003 Master of Airpower Art and Science degree, School of Advanced Airpower Studies, Air University, Maxwell AFB, Ala.
2008 National Defense Fellow, The Fletcher School of Law and Diplomacy, Tufts University, Medford, Mass.

ASSIGNMENTS
1.December 1989- March 1990, Student, Undergraduate Missile Training, Vandenberg AFB, Calif.
2.May 1990- November 1994, Minuteman Ill Combat Crew Member, Senior Evaluator Crew Commander, and Chief Standards/Evaluation, 321st Strategic Missile Wing, Grand Forks AFB, N.D.
3. December 1994 - October 1997, ICBM Test Operations Officer, TOP HAND, 576th Flight Test Squadron, Vandenberg AFB, Calif.
4. November 1997- June 1999, Staff Officer, Missile Operations and Future Concepts Division, Directorate of Operations, Headquarters Air Force Space Command, Peterson AFB, Colo.
5. July 1999- October 2000, Executive Officer to the Director of Staff, Headquarters Air Force Space Command, Peterson AFB, Colo.
6. November 2000- June 2001, Flight Commander, 11th Space Warning Squadron, 21st Space Wing, Schriever AFB, Colo.
7. July 2001 -June 2002, Student, Marine Corps Command and Staff College, Quantico, Va.
8. July 2002- June 2003, Student, School of Advanced Airpower Studies, Maxwell AFB, Ala.
9. July 2003-May 2004, Chief of Strategy, Concept Development and Strategy Division, Air and Space Operations, Headquarters U.S. Air Force, Washington, D.C.
10. June 2004-November 2004, Joint Staff Secretary and Deputy Chief of Staff for Personnel (J1), Iraq Survey Group, Multi-National Forces-Iraq, Baghdad, Iraq
11. December 2004 -June 2005, deputy chief, Aerospace Expeditionary Force Policy Division, Air and Space Operations, Headquarters U.S. Air Force, Washington, D.C.
12. June 2005-June 2007, Commander, 576th Flight Test Squadron, Vandenberg AFB, Calif.
13. July 2007-July 2008, National Defense Fellow, Fletcher School of Law and Diplomacy, Tufts University, Medford, Mass.
14. August 2008-June 2009, Chief, NIGHT FIST Division, Global Innovation and Strategy Center, U.S. Strategic Command, Omaha, Neb.
15. July 2009- July 2010, Chief, Operations Plans Division (J35), Global Operations Directorate, and Chief of Staff, U.S. Cyber Command Planning and Implementation Team, U.S. Strategic Command, Omaha, Neb.
16. July 2010- May 2011. Vice Commander, 341st Missile Wing, Malmstrom AFB,Mont.

17. June 2011-June 2012, Commander, 91st Missile Wing, Minot AFB, N.D.
18. June 2012-June 2013, Assistant Deputy Director, Command, Control and Nuclear Operations (J36), The Joint Staff, Washington, D.C.
19. July 2012- August 2014, Assistant Deputy Director, Nuclear, Homeland Defense and Current Operations (J33), The Joint Staff, Washington, D.C.
20. September 2014-present, Principal Assistant Deputy Administrator for Military Applications, National Nuclear Security Administration, Department of Energy, Washington D.C.

SUMMARY OF JOINT ASSIGNMENTS
1. August 2008- June 2009, Chief, NIGHT FIST Division, Global Innovation and Strategy Center, Headquarters, U.S. Strategic Command, Omaha, Neb., as a colonel.
2. July 2009- July 2010, Chief, Operations Plans Division (J35), Global Operations Directorate, and Chief of Staff, U.S. Cyber Command Planning and Implementation Team, U.S. Strategic Command, Omaha, Neb., as a colonel
3. June 2012- August 2014, Assistant Deputy Director, Command, Control and Nuclear Operations (J36) and later Assistant Deputy Director, Nuclear, Homeland Defense and Current Operations (J33),The Joint Staff, Washington, D.C., as a colonel and brigadier general
4. September 2014 - present, Principal Assistant Deputy Administrator for Military Applications, National Nuclear Security Administration, Department of Energy, Washington D.C., as a brigadier general

MAJOR AWARDS AND DECORATIONS
Defense Superior Service Medal
Legion of Merit
Defense Meritorious Service Medal with oak leaf cluster
Meritorious Service Medal with three oak leaf clusters
Joint Service Commendation Medal
Air Force Commendation Medal
Combat Readiness Medal with oak leaf cluster
National Defense Service Medal with bronze star
Iraq Campaign Medal with two campaign stars
Global War on Terrorism Service Medal
Humanitarian Service Medal

EFFECTIVE DATES OF RANK
Second Lieutenant Dec. 22, 1989
First Lieutenant Dec. 22, 1991
Captain Dec. 22, 1993
Major June 1, 2001
Lieutenant Colonel April 1, 2004
Colonel Oct. 1, 2008
Brigadier General Aug. 29, 2014

(Current as of November 2014)

Anne Harrington
Deputy Administrator for Defense Nuclear Nonproliferation
National Nuclear Security Administration

Anne Harrington was sworn in as Deputy Administrator for Defense Nuclear Nonproliferation for the National Nuclear Security Administration in October 2010. Previously, Ms. Harrington was the Director of the U.S. National Academy of Sciences Committee on International Security and Arms Control (CISAC) a position she held from March 2005 to October 2010. While at CISAC, she managed several key studies on a variety of nonproliferation, threat reduction and other nuclear security issues, including: Global Security Engagement: A New Model for Cooperative Threat Reduction (2009); Future of the Nuclear Security Environment in 2015 (2009); Internationalization of the Nuclear Fuel Cycle: Goals, Strategies, and Challenges (2008, joint report with Russian Academy of Sciences); and English-Chinese Chinese-English Nuclear Security Glossary (2008, produced jointly with the Chinese Scientists Group for Arms Control).

Ms. Harrington served for 15 years in the U.S. Department of State, where she was Acting Director and Deputy Director of the Office of Proliferation Threat Reduction and a senior U.S. government expert on nonproliferation and cooperative threat reduction. She has dedicated much of her government career to developing policy and implementing programs aimed at preventing the proliferation of WMD and missile expertise in Russia and Eurasia, and also launched similar efforts Iraq and Libya.

Her State Department assignments include serving as the U.S. senior coordinator for efforts to redirect former Soviet WMD missile experts 1993-1998. She was based in Moscow from 1991 to 1993, where she was the Senior Advisor to the U.S. Delegation to the International Science and Technology Center (ISTC) Preparatory Committee and Science Analyst at the U.S. Embassy in Moscow. She was instrumental in negotiating the agreements that established the ISTC and the Science and Technology Center in Ukraine (STCU), and the agreement between the United States and Kazakhstan for the secure storage of spent fuel and safe shutdown of the Aktau BN-350 breeder reactor.

She was selected to attend the National Defense University's National War College in 2002-2003, where she was also a research fellow and authored the paper, "Reducing the Threat from Biological Weapons: Perspectives on U.S. Policy." Ms. Harrington has been author or co-author on a number of papers on countering biological threats.

Ms. Harrington graduated with a bachelor's of arts degree from St. Lawrence University, an M.A. from the University of Michigan, and an M.S. from the National Defense University National War College. She has two children, Meredith and Owen Lynch.

Written Statement of Dr. Monica Regalbuto

Assistant Secretary for Environmental Management

United States Department of Energy

Before the

Subcommittee on Strategic Forces

Committee on Armed Services

United States House of Representatives

February 11, 2016

Good morning Chairman Rogers, Ranking Member Cooper, and Members of the Subcommittee. I am pleased to be here today to represent the Department of Energy's (DOE) Office of Environmental Management (EM). I would like to provide you with an overview of the EM program, key accomplishments during the past year and what we plan to accomplish under the President's $6,119,099,000 Fiscal Year (FY) 2017 budget request, which includes $673,749,000 of proposed mandatory funding.

Overview of the EM Mission

EM supports the Department's Strategic Plan to position the DOE to meet the challenges of the 21st century and the Nation's Manhattan Project and Cold War legacy responsibilities. The Department will leverage past experience, applying best practices and lessons learned; identify, develop, and deploy practical technological solutions derived from scientific research; and look for innovative and sustainable practices that make cleanup more efficient.

The EM program was established in 1989 and is responsible for the cleanup of millions of gallons of liquid radioactive waste, thousands of tons of spent nuclear fuel and special nuclear material, disposition of large volumes of transuranic and mixed/low-level waste, huge quantities of contaminated soil and water, and deactivation and decommissioning of thousands of excess facilities. This environmental cleanup responsibility results from five decades of nuclear weapons development and production and Government-sponsored nuclear energy research and development. It involves some of the most dangerous materials known to mankind. EM has completed cleanup activities at 91 sites in 30 states; EM is responsible for the remaining cleanup at 16 sites in 11 states.

Since 1989, the EM footprint has reduced significantly. For example, the Fernald site in Ohio and the Rocky Flats site in Colorado, both of which once housed large industrial complexes, are

now wildlife refuges that are also available for recreational use. At the Idaho National Laboratory, we have decommissioned and demolished more than two million square feet of excess facilities, and removed all EM special nuclear material (e.g., highly enriched uranium) from the state.

There is less than 300 square miles remaining to be cleaned up across the EM complex and progress continues. The remaining cleanup work presents some of the greatest challenges.

EM Cleanup Objectives and Priorities

EM's first priority is worker safety and at our sites across the complex we continue to pursue cleanup objectives with that in mind. Taking many variables into account, such as risk reduction and compliance agreements, EM has generally prioritized its cleanup activities as follows:

- Ensuring that activities are performed safely while providing the necessary security framework;
- Radioactive tank waste stabilization, treatment, and disposal;
- Spent nuclear fuel storage, receipt, and disposition;
- Special nuclear material consolidation, stabilization, and disposition;
- Transuranic and mixed/low-level waste disposition;
- Soil and groundwater remediation; and
- Excess facilities deactivation and decommissioning.

In particular, the FY 2017 budget request will allow EM to:

- Complete activities necessary for resumption of waste emplacement operations at the Waste Isolation Pilot Plant;
- Commence startup testing and commissioning activities at the Salt Waste Processing Facility to support initiation of radioactive operations in 2018; and
- Continue construction on the Waste Treatment and Immobilization Plant to support direct feed of low activity waste by end of 2022.

Most importantly, EM will continue to discharge its responsibilities by conducting cleanup within a "Safe Performance of Work" culture that integrates environmental, safety, and health requirements and controls into all work activities. This ensures protection for the workers, public, and the environment

Key Recent and Near-Term Accomplishments

I would like to take this opportunity to highlight a number of EM's most recent accomplishments. Recently, the 4,000th canister of radioactive glass was poured at the Savannah River Site Defense

Waste Processing Facility. Achieving this milestone, along with other processing activities, enabled the closure of the seventh high-level waste storage tank at Savannah River with closure of the eighth tank in progress. At the Moab Site, half of the estimated 16 million tons of uranium mill tailings has been removed and shipped to an engineered disposal cell. At Hanford, we have completed cleanup of the bulk of the River Corridor cleanup, including more than 500 facilities and 1,000 remediation sites. At Oak Ridge, we are continuing design and critical decision reviews for the Outfall 200 Mercury Treatment Facility. The budget request enables EM to continue progress in completing buried waste exhumation at the Idaho site under the Accelerated Retrieval Project.

Highlights of the FY 2017 Budget Request

The FY 2017 budget request for EM includes $5,382,050,000 for defense environmental cleanup activities. The request will allow EM to maintain a safe and secure posture across the complex, while maximizing our work on compliance activities. The budget request supports the continued construction of two unique and complex tank waste processing plants at the Savannah River Site, South Carolina, and the Office of River Protection, Washington. We are working to ensure these facilities will operate safely and efficiently. These two facilities are projected to treat tens of millions of gallons of radioactive tank waste for disposal.

Among EM's top priorities is the safe re-opening of the Waste Isolation Pilot Plant (WIPP) outside of Carlsbad, New Mexico. EM continues to support recovery from two 2014 incidents at the facility that interrupted the nationwide program for the disposition of transuranic waste resulting from atomic energy activities. Since opening WIPP, EM has sent more than 11,800 shipments of transuranic waste for permanent disposal, safely emplacing nearly 90,000 cubic meters of waste. The FY 2017 budget request will continue corrective actions and safety activities to support WIPP, regulatory and environmental compliance actions, the Central Characterization Project and transportation activities, and the resumption of waste emplacement operations by December 2016.

In FY 2017, cleanup progress will continue to be made across the rest of the complex. At Idaho, the FY 2017 request will support the Integrated Waste Treatment Unit. This facility is planned to treat approximately 900,000 gallons of sodium bearing tank waste. The request also continues exhumations at the Subsurface Disposal Area, treatment of legacy contact-handled and remote-handled transuranic and mixed low-level waste and safe, secure management of spent nuclear fuel.

At the Savannah River Site, the FY 2017 request supports continued production of canisters of vitrified high-level waste, and the construction of an additional on-site disposal unit for saltstone, the separated and treated low-activity fraction component of tank waste. Complete construction to support the planned commissioning and start-up of the Salt Waste Processing Facility in 2018. In addition, the request supports the safe and secure operation of the H Canyon/ HB-Line for the purpose of processing aluminum-clad spent nuclear fuel and down-blending EM-owned plutonium, ensuring the availability of space in K- and L-Areas for the future receipt of materials returned under national security summit agreements.

At the Office of River Protection, the FY 2017 request supports continuing construction of the Low-Activity Waste (LAW) Facility, Balance of Facilities, and outfitting of the Analytical Laboratory of the Waste Treatment and Immobilization Plant (WTP), facilities which are the centerpiece of the Department's plan to begin the direct feed of low activity to the LAW facility (DFLAW) as soon as end of 2022. It will also simultaneously support ongoing efforts to resolve the technical issues associated with the WTP Pretreatment Facility and the WTP High-Level Waste Facility. The FY 2017 request is designed to achieve the immobilization of low activity waste as soon as practicable while resolution of technical issues continues. In support of DFLAW, the request includes funds for engineering scale testing and final design of the Low Activity Waste Pretreatment System, which will remove cesium and solids from the tank waste and provide feed directly to the Low Activity Waste Facility.

Ongoing cleanup efforts continue at Richland. The FY 2017 request supports the completion of the Plutonium Finishing Plant Facility transition and certain disposition activities in order to achieve slab-on-grade and completion of a cap over the site. The FY 2017 request also supports continued remediation of the 618-10 Vertical Pipe Units and planning and technology maturation for the remediation of the 324 hot cell facility located over the 300-296 waste site.

At Oak Ridge, the FY 2017 request will maintain EM facilities in a safe, compliant, and secure manner; and support continuing design and critical decision reviews for the Outfall 200 Mercury Treatment Facility at the Y-12 National Security Complex. The processing of contact-handled and remote-handled transuranic waste debris will continue at the Transuranic Waste Processing Center while technology maturation and planning continues for the Sludge Processing Facility Buildout project. Additionally, the budget request supports continued direct disposition of Consolidated Edison Uranium Solidification Project material from Building 3019.

With the most challenging cleanup sites before EM, we understand the importance of technology development in reducing life cycle costs and enhancing our effectiveness. To help address many of the technical challenges involved with high-risk cleanup activities, the FY 2017 request reflects a total investment in technology development of $33,000,000. The FY 2017 budget supports testing multiple technologies to solidify/stabilize mercury in soil and building materials to minimize the potential of mercury releases to the environment when decontamination and

decommissioning of excess facilities begins at the Oak Ridge site. EM will also invest in characterization of and treatment options for Technetium-99, a key radioactive constituent in tank waste and in soils at sites across the complex; in robotics and semi-autonomous systems required for remote access to nuclear, chemical and other high-hazard facilities that are inaccessible or restricted to human entry; and in the development of test beds for the demonstration of treatment technologies, innovative tooling, and other technical solutions.

Budget Authority and Planned Accomplishments by Site

Office of River Protection, Washington (Dollars in Thousands)

FY 2016 Enacted	FY 2017 Request
$1,414,000	$1,499,965

Key Accomplishments Planned for FY 2017

- Maintain scheduled construction activities for the Low Activity Waste Facility, Analytical Laboratory, and Balance of Facilities to support the Direct Feed Low Activity Waste approach
- Initiate single-shell tank retrievals in AX Tank Farm
- Complete retrieval of AY-102 double-shell tank
- Complete Low Activity Waste Pretreatment System (LAWPS) preliminary design to a design maturity of 90%
- Continue resolution of technical issues of Criticality; Hydrogen Gas Vessels; and Erosion/Corrosion at the Pretreatment Facility

Savannah River Site, South Carolina (Dollars in Thousands)

FY 2016 Current	FY 2017 Request
$1,336,566	$1,448,000

Key Accomplishments Planned for FY 2017

- Package 100 to 110 canisters of vitrified high-level waste at the Defense Waste Processing Facility
- Operate Actinide Removal Process and Modular Caustic Side Solvent Extraction Unit to process 1.7 million gallons of salt waste

- Support planned construction, commissioning, and start-up activities for the Salt Waste Processing Facility
- Complete construction of Saltstone Disposal Unit #6
- Continue to receive foreign research and domestic research reactor spent nuclear fuel for safe storage and disposition
- Disposition spent nuclear fuel in H-Canyon by processing

- Activities to support implementation plan activities for the Defense Nuclear Facilities Safety Board Recommendation 2012-1 to mitigate and remedy safety issues at 235-F

Carlsbad Field Office, New Mexico (Dollars in Thousands)

FY 2016 Enacted	FY 2017 Request
$304,838	$271,000

Key Accomplishments Planned for FY 2017

- Complete activities necessary for resumption of waste emplacement operations at the Waste Isolation Pilot Plant by December 2016
- Continue design and permitting actions for new ventilation shaft and on-site storage projects

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

FY 2016 Enacted	FY 2017 Request
$185,000	$189,000

Key Accomplishments Planned for FY 2017

- Address the nitrate salt bearing transuranic wastes
- Remediation of town site (TA-43) cleanup of solid waste management units from the 1940s and 1950s production sites
- Complete the investigation of hexavalent chromium contamination of the groundwater beneath Mortandad and Sandia Canyons including field and bench-scale testing and plume control interim measures

Idaho National Laboratory, Idaho (Dollars in Thousands)

FY 2016 Enacted	FY 2017 Request
$396,000	$362,088[1]

Key Accomplishments Planned for FY 2017

- Continue treatment of sodium bearing waste in the Integrated Waste Treatment Unit
- Characterize, package, certify, and temporarily store exhumed waste on site pending the resumption of operations at and shipments to the Waste Isolation Pilot Plant
- Complete exhumation of targeted buried waste at the Accelerated Retrieval Project VIII facility
- Continue safe storage of spent (used) nuclear fuel

Oak Ridge Site, Tennessee (Dollars in Thousands)

FY 2016 Current	FY 2017 Request
$250,878	$213,219[2]

Key Accomplishments Planned for FY 2017

- Continue planning design and preparation of regulatory documentation and Critical Decision reviews for the Outfall 200 Mercury Treatment Facility
- Continue processing transuranic waste debris at the Transuranic Waste Processing Center
- Continue offsite disposition of select Oak Ridge waste stream

[1] The amount reflects Defense Environmental Cleanup portion, the total Idaho FY17 Request is $370,088,000.
[2] The amount reflects Defense Environmental Cleanup portion, the total Oak Ridge FY17 Request is $391,407,000.

Richland Operations Office, Washington (Dollars in Thousands)

FY 2016 Current	FY 2017 Request
$988,091	$797,760[3]

Key Accomplishments Planned for FY 2017

- Complete Plutonium Finishing Plant Facility transition and selected disposition activities pursuant to achieving slab-on-grade including completion of a cap over the site
- Begin project planning for dry storage options for the cesium and strontium capsules currently stored at the Waste Storage Encapsulation Facility
- Planning and technology maturity for the remediation of the highly radioactive waste site 300-296 located beneath the 324 Building
- Continue remediation of the 618-10 Vertical Pipe Units

Nevada National Security Site, Nevada (Dollars in Thousands)

FY 2016 Enacted	FY 2017 Request
$62,385	$62,176

Key Accomplishments Planned for FY 2017

- Complete closure activities for 9 soil corrective action sites
- Support safe disposal of approximately 34,000 cubic meters of low-level and mixed low-level radioactive waste

Conclusion

Mr. Chairman, Ranking Member Cooper, and Members of the Subcommittee, I am honored to be here today representing the over 20,000 men and women that carry out our Office of Environmental Management mission. We are committed to achieving our mission and will continue to apply innovative environmental cleanup strategies to complete work safely, and efficiently, thereby demonstrating value to the American taxpayers. All of this work will, first and foremost, be done safely, within a framework of best business practices. I am pleased to answer any questions you may have.

[3] The amount reflects Defense Environmental Cleanup portion, the total Richland FY17 Request is $800,000,000.

Dr. Monica Regalbuto

Dr. Monica Regalbuto was named Assistant Secretary for Environmental Management (EM) in August 2015. In this role, Dr. Regalbuto provides the leadership necessary to continue the safe cleanup of the environmental legacy brought about from five decades of nuclear weapons development and government-sponsored nuclear energy research.

Prior to serving as Assistant Secretary, Dr. Regalbuto served as EM's Associate Principal Deputy Assistant Secretary. In that role, she applied her deep technical expertise to reduce technical risk and uncertainty in EM's cleanup mission across the DOE complex.

Dr. Regalbuto previously served as Deputy Assistant Secretary for Fuel Cycle Technologies in the DOE Office of Nuclear Energy, overseeing the development of the nation's nuclear fuel cycle. In that position, she directed a research and development program comprising 10 national laboratories, 32 universities, over 400 scientists, and 300 professors. Dr. Regalbuto also has experience supporting EM as Senior Program Manager in the former Office of Waste Processing, overseeing technical risk reduction in the cleanup programs.

From 2003 to 2008, Dr. Regalbuto managed a group of 30 researchers as head of the Process Chemistry and Engineering Department in Argonne National Laboratory's Chemical Sciences and Engineering Division. Argonne — part of DOE's network of national laboratories — was where Dr. Regalbuto began her career in 1988. There, she helped develop technologies for the treatment of high-level waste at DOE plutonium production sites. As a researcher, she made key contributions to nuclear fuel-cycle technology, including the development of the UREX+ processes, a suite of solvent extraction processes for the recovery of actinides and fission products from spent fuel. Dr. Regalbuto also led research directly related to EM's mission, such as the successful demonstration of the Caustic-Side Solvent Extraction process that separates cesium-137 from high-level radioactive waste. Dr. Regalbuto has authored multiple journal articles and reports and holds six patents.

Dr. Regalbuto received her bachelor's degree in chemical engineering from the Mexican Instituto Tecnológico y de Estudios Superiores de Monterrey, and master's and doctorate degrees in chemical engineering from the University of Notre Dame.

TESTIMONY
OF
THE HONORABLE JOYCE CONNERY, CHAIRMAN
DEFENSE NUCLEAR FACILITIES SAFETY BOARD
before the
COMMITTEE ON ARMED SERVICES, SUBCOMMITTEE ON STRATEGIC FORCES
UNITED STATES HOUSE OF REPRESENTATIVES

Review of the President's Fiscal Year 2017 Budget Request
for the Defense Nuclear Facilities Safety Board

February 11, 2016

Washington, D.C.

Chairman Rogers, Ranking Member Cooper, and distinguished Members of the Subcommittee, thank you for the opportunity to testify on the Defense Nuclear Facilities Safety Board's Fiscal Year 2017 budget request and its related work.

The Board is statutorily mandated to provide independent analysis, advice, and recommendations to the Secretary of Energy to inform the Secretary, in the role of the Secretary as operator and regulator of the defense nuclear facilities of the Department of Energy, in providing adequate protection of public health and safety at such defense nuclear facilities. The Atomic Energy Act of 1954, as amended, currently establishes two categories of facilities subject to Board jurisdiction as generally described as: (1) those facilities under the Secretary of Energy's control or jurisdiction, operated for national security purposes that produce or utilize special nuclear materials; and (2) nuclear waste storage facilities under the control or jurisdiction of the Secretary of Energy.

Under its enabling statute, the Board is responsible for independent oversight of all programs and activities impacting public health and safety within DOE's defense nuclear facility complex—a complex that has served to design, manufacture, test, maintain, and decommission nuclear weapons, as well as other national security priorities. The Board is statutorily mandated to review the content and implementation of DOE standards, facility and system designs, and events and practices at DOE defense nuclear facilities that the Board determines have adversely affected, or may adversely affect, public health and safety. Board oversight is centered on nuclear safety at defense nuclear facilities.

The Board performs safety oversight at facilities throughout the DOE defense nuclear complex to ensure operations are conducted safely. Such oversight is the best way the Board may ascertain whether operations are being conducted with the appropriate formality, identify potential safety problems promptly, and advise the Secretary of Energy... Additionally, many DOE facilities are aging and continue to degrade. Transition to new facilities will take decades. For example, the Chemical and Metallurgy Research Facility at

Los Alamos National Laboratory (LANL) and the 9212 Complex at the Y-12 National Security Complex are of particular concern because of their deficient structures and advanced age. In order to keep the Secretary and the Congress informed regarding the hazards posed by aging facilities and DOE's progress in resolving issues in the design of modern replacement facilities, the Board issues two annual summaries as appendices to its annual report to Congress: one appendix summarizes the status of significant safety issues related to aging infrastructure, and the other summarizes significant unresolved safety issues with DOE's design and construction projects.

Key Oversight Activities

The Board's safety oversight activities are prioritized predominantly on the basis of risk to the public and workers, types and quantities of nuclear and hazardous material at hand, and hazards of the operations involved. During the past year, the Board has dedicated significant oversight resources to safety activities throughout the defense nuclear complex, including:

- **Emergency Preparedness and Response**

On September 3, 2014, the Board issued Recommendation 2014-1, *Emergency Preparedness and Response*, to address deficiencies with DOE's promulgation of and oversight of compliance with requirements. The Board focused staff reviews in 2015 on the assessment of implementation of these requirements at defense nuclear facilities. These assessments included site-specific reviews at the Pantex Plant and Savannah River Site as well as observation of drills and exercises at the Y-12 National Security Complex, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Sandia National Laboratories, Pantex Plant, Savannah River Site, and Hanford Site. The review at the Pantex Plant led to the identification of significant issues that warranted near-term resolution. As a result, on November 24, 2015, the Board issued Recommendation 2015-1, *Emergency Preparedness and Response at Pantex*, to address the identified deficiencies.

- **Safety Basis for Transuranic Waste Operations at Los Alamos Area G**

Since 2014, the Los Alamos contractor has declared four Potential Inadequacies of the Safety Analysis (PISA) at Area G, all of which remained unresolved at year's end. These unresolved PISAs included the potential for a release event similar to the one that occurred at the Waste Isolation Pilot Plant (WIPP) on February 14, 2014.

Area G provides Los Alamos National Laboratory's (LANL) current capability for storing and certifying defense-related transuranic (TRU) waste prior to permanent disposal at WIPP. The LANL contractor largely curtailed operations at Area G following initial

indications that a drum of TRU waste generated at LANL was involved in the radiological release event at WIPP. . LANL requires a functioning waste management system to enable programmatic work as well as important risk reduction activities in the Plutonium Facility (PF-4), Chemistry and Metallurgy Research building, and Weapons Engineering Tritium Facility. The WIPP incident has effectively shut down operations at the Area G—WIPP is unable to accept waste, preventing LANL from sending any of the waste from Area G to WIPP.

The Board's staff has reviewed and provided feedback to the Los Alamos contractor and NNSA Field Office personnel on multiple safety basis changes designed to address some of these inadequacies. The Board's staff also observed and provided feedback to NNSA personnel during waste container thermal testing at Sandia National Laboratories (SNL), which will be utilized to support the Area G safety basis. The Board will hold a public hearing to discuss safety issues at Area G in early 2016.

- **Recovery Actions at the Waste Isolation Pilot Plant**

Resumption of waste disposal operations at WIPP is essential to eliminate the risks posed by TRU waste stored across the DOE defense nuclear complex. Completing the extensive recovery actions needed to enable resuming operations at WIPP in a timely manner while adequately protecting workers and the public is a challenging task. The Board and its staff have increased safety oversight of WIPP commensurate with its importance and challenge.

DOE released its final investigation report on the vehicle fire on March 7, 2014, and its final investigation report on the release event on April 15, 2015. The investigations identified more than 200 corrective actions required to ensure future WIPP operations can be safely performed. The Board held a public hearing and meeting in Carlsbad, New Mexico on April 29, 2015, to assess progress at WIPP. Members of the Board's staff regularly traveled to WIPP to closely monitor DOE's recovery actions throughout 2015 and prioritized oversight of DOE's efforts to revise the safety basis for waste disposal operations at WIPP to ensure that workers and the public are adequately protected both during recovery operations and once DOE resumes waste disposal operations.

- **Criticality Safety at the Los Alamos Plutonium Facility**

In 2015, LANL achieved substantial progress in resuming operations at PF-4 following corrective actions to address long-standing criticality safety program deficiencies. In 2016, the Board's staff will closely follow LANL's efforts to resume the most complex, highest risk operations.

Since 2005, NNSA has recognized that LANL's nuclear criticality safety program does not fully comply with applicable requirements. In 2013, a severe staffing shortage in LANL's nuclear criticality safety group inhibited progress in correcting the deficiencies in this program. On June 27, 2013, the Laboratory Director paused all programmatic activities at PF-4. The Board played a key role identifying new deficiencies and bringing the state of LANL's nuclear criticality safety program to the attention of the laboratory contractor's management and the Secretary of Energy.

NNSA has executed a number of corrective actions, resumed PF-4 operations that pose a lower criticality safety risk, and completed readiness assessments for four of eight higher-risk operations at PF-4. NNSA plans to conduct the remaining PF-4 readiness assessments in 2016. The Board's staff observed the majority of the contractor and federal readiness assessments for these higher-risk operations and found them to be appropriately rigorous. The Board's staff also reviewed the implementation of corrective actions to ensure that they effectively addressed the deficiencies identified in nuclear criticality safety and conduct of operations. The Board's staff will evaluate the adequacy of the readiness assessments scheduled in 2016 for the remaining higher-risk operations at PF-4.

- **Earthquake Hazard at the Los Alamos National Laboratory**

The risk posed by an earthquake at LANL remains a significant safety concern. NNSA has completed several structural upgrades to the Los Alamos Plutonium Facility in recent years and plans further upgrades.

In 2009, the Board found that the safety documentation for PF-4 approved by NNSA in December 2008 indicated that the radiation dose consequence to the public following an earthquake and resulting fire could exceed DOE's allowed levels by several orders of magnitude. As a result, on October 26, 2009, the Board issued Recommendation 2009-2, *Los Alamos National Laboratory Plutonium Facility Seismic Safety*, regarding the need to address the danger posed by an earthquake and subsequent fire at PF-4. In response, NNSA took action to strengthen the structure of the building and to reduce the likelihood and severity of a post-seismic fire. However, additional structural analyses performed using an updated probabilistic seismic hazard analysis found that the facility could collapse following a design basis earthquake.

For resolution of these questions, the Deputy Secretary of Energy directed NNSA in September 2012 to evaluate the seismic vulnerability of PF-4 using a new alternate modeling approach that would enable NNSA to determine the likelihood of facility collapse and the extent of upgrades needed. The engineering firm conducting this alternate analysis completed the first phase in 2014; however, NNSA paused further work and chartered a Seismic Expert Panel to review the results of the first phase of the alternate analysis as well

as a previously completed contractor analysis. The Seismic Expert Panel published its report on March 31, 2015, and subsequently briefed senior NNSA personnel to discuss potential paths forward. The Board and its staff also interacted with senior NNSA management to provide feedback on the report and these potential approaches. NNSA is currently preparing a request for proposal to identify contractors capable of completing the alternate seismic analysis.

Also in 2015, the Board issued a Technical Report entitled *Opportunities for Risk Reduction at the Los Alamos National Laboratory Plutonium Facility through the Minimization of Material-at-Risk* to encourage NNSA to take near-term action to improve the safety posture at PF-4. This report provided a number of actions for NNSA to consider, including the use of robust, certified storage containers for nuclear materials; disposition of materials with no defined use, and effective use of the PF-4 vault and other hardened storage locations. The Board will continue to place a high priority on the seismic vulnerability of PF-4 in 2016, and its staff will continue to follow the design and installation of upgrades at this facility, initiatives to reduce material-at-risk, and the timely completion of the alternate seismic analysis.

- **Early Integration of Safety in Design**

The Board supports DOE's efforts to integrate safety concepts at an early stage in design and construction projects. For example, the Board uses "project letters" to provide timely notification of safety issues to DOE at major project milestones (known as "Critical Decisions"). This process ensures that DOE is aware of unresolved safety issues and assists DOE in evaluating a project's readiness to move forward. During 2015, the Board completed five project letters as summarized below.

- *Hanford Site, WTP High-Level Waste Facility, May 8, 2015*—The Board's letter to DOE described open safety issues that require DOE senior management attention to achieve resolution and produce a defensible safety basis for the facility.

- *Savannah River Site, Waste Solidification Building, May 13, 2015*—The Board's letter to NNSA did not identify any unresolved safety issues, but noted that certain activities required for project completion were deferred because the facility was entering cold standby.

- *Hanford Site, Low Activity Waste Pretreatment System (LAWPS), May 14, 2015* — The Board's letter to DOE concluded that no significant safety issues existed at the completion of conceptual design which would preclude the project from advancing. The Board identified three concerns that the LAWPS project plans to address during the preliminary design phase.

- *Savannah River Site, K-Area Complex Purification Area Vault*—In a June 22, 2015, letter to DOE, the Board did not identify any issues that would question DOE's declaration of project completion. However, in the letter, the Board noted potential vulnerabilities in the facility's safety posture, and that DOE and the project contractor had already identified opportunities to resolve several of the issues.

- *Y-12 National Security Complex, Electrorefining Project*—In an October 29, 2015, letter to NNSA, the Board concluded that, at the conceptual design phase, the project had appropriately identified structures, systems, and components (SSCs) necessary to confine and control hazardous material, but did not fully analyze some of these SSCs to determine whether they can perform their credited safety functions.

In a letter to the Secretary of Energy dated April 21, 2015, the Board proposed a joint effort to review the processes by which the Board interacts with DOE to identify potential safety issues in the design and construction of new facilities. In the letter, the Board stated that after eight years of experience with the process, both organizations might benefit from a joint review to identify any lessons learned or potential improvements. DOE agreed in a response letter dated June 12, 2015, that performing a joint review would be beneficial to both organizations and identified NNSA and DOE Office of Environmental Management points of contact for this review. The Board and DOE are planning to conduct a workshop as a key piece of this effort.

Review of the FY17 Budget Request

In order to continue execution of its oversight mission to ensure adequate protection of public health and safety at DOE's defense nuclear facilities and commensurate with the workload generated by DOE in FY 2017, the Board is requesting a total of $31,000,000 in new budget authority and 120 FTEs. The Board is the only government agency that provides independent scientific and technical safety oversight of DOE's defense nuclear facilities.

Continued, effective, oversight of the conduct of operations at DOE's defense nuclear facilities is the only way the Board may ascertain whether operations are being conducted with the appropriate formality, identify potential safety problems promptly, and advise the Secretary of Energy in order to ensure adequate protection of public and worker safety at DOE defense nuclear facilities. This oversight is achieved utilizing the Board's greatest asset - our people.

Nearly 70 percent ($22.5M) of the FY17 budget request is dedicated to people - salaries and benefits - for staff and Board members. With this cadre of technical experts at

headquarters and on-site at five DOE defense nuclear facilities, the Board performs its required oversight mission at 10 DOE defense nuclear facilities. In FY17 and beyond, the Board's safety focus at these sites will be on the following:

- **Pantex Plant in Texas.** Stewardship and maintenance of the nuclear weapons stockpile, including assembly and disassembly, surveillance, maintenance, and dismantlement of nuclear weapons and the storage of special nuclear material, particularly plutonium pits;

- **Oak Ridge National Laboratory/Y-12 National Security Complex (Y-12) in Tennessee.** Stewardship and maintenance of the nuclear weapons stockpile, including assembly and disassembly, evaluation, maintenance, and dismantlement of nuclear weapon components; fabrication of nuclear weapon components, including secondaries; processing of highly-enriched uranium; and storage of nuclear materials, including uranium from weapon components. This also includes design and construction of the Uranium Processing Facility**;**

- **Savannah River Site in South Carolina.** Tritium operations, storage of special nuclear material, stabilization of high-level waste and residual nuclear materials from previous defense nuclear operations, and disposition of excess plutonium. (Note: the Board does not provide oversight of the Mixed Oxide (MOX) Fuel Fabrication Facility. MOX is under the jurisdiction of the Nuclear Regulatory Commission);

- **Los Alamos National Laboratory in New Mexico.** Management and stewardship of the nuclear weapons stockpile, including research and enhanced surveillance of weapons, processing of nuclear materials, pit production, and packaging of radioactive wastes;

- **Lawrence Livermore National Laboratory in California.** Management and stewardship of the nuclear weapons stockpile, including research and enhanced surveillance of weapons, and processing of nuclear materials;

- **Nevada National Security Site.** Stewardship of the nuclear weapons stockpile, including subcritical experiments and criticality experiments, packaging and disposal of radioactive waste, potential nuclear weapon assembly and disassembly operations, and potential operations with damaged nuclear weapons and improvised nuclear devices;

- **Sandia National Laboratories in New Mexico and California.** Management and stewardship of the nuclear weapons stockpile, including research, enhanced surveillance of weapon components, operation of the Annular Core Research Reactor, and packaging of radioactive wastes;

- **Hanford Site in Washington.** Storage and stabilization of high-level waste, stabilization of residual sludge from corroded spent nuclear fuel, stabilization of other residual nuclear material from previous operations, and dismantling and disposition of excess defense nuclear facilities. This also includes design and construction of the Waste Treatment and Immobilization Plant as well as the supporting infrastructure in the Hanford Tank Farms necessary to feed high-level waste to the plant when operational;.

- **Idaho National Laboratory in Idaho.** Storage and stabilization of high-level waste, storage of spent nuclear fuel, packaging and disposition of radioactive waste, and dismantling and disposition of excess defense nuclear facilities;

- **Waste Isolation Pilot Plant in New Mexico.** Receipt, handling, and permanent deep geological disposal of transuranic wastes.

The Board has ten full-time site representatives stationed at: 1) Pantex Plant to oversee nuclear weapons activities, including the weapons stockpile stewardship and weapons disassembly programs; 2) Hanford Site to monitor waste characterization and stabilization and facility deactivation; 3) Savannah River Site to monitor DOE's efforts to deactivate facilities, stabilize waste materials, and store and process tritium; 4) Oak Ridge National Laboratory and Y-12 National Security Complex to monitor nuclear operations supporting the weapons stockpile at Y-12 and cleanup activities at the site's defense nuclear facilities; and 5) Los Alamos National Laboratory to oversee work at its defense nuclear facilities supporting stockpile management and stewardship, including processing of nuclear materials, pit production, and packaging of radioactive wastes.

Finally, the Board is obligated by law to conduct in-depth reviews of new defense nuclear facilities during design and construction to ensure the safety of the public and workers is addressed at a timely stage in the design process. DOE has more than a dozen major design and construction projects currently underway or planned for the near future. The Board will continue to expend considerable resources to review the ongoing design effort and construction activities at new DOE defense nuclear facilities, concentrating its oversight attention on the projects with high risk, significance, and complexity.

Mr. Chairman, in preparing our FY17 funding requirements the Board reviewed its current resources and capabilities and measured it against projected workload. That workload is derived from Congressional direction, current DOE programs and projects, and new DOE programs and projects. The Board believes this request meets the scientific and technical requirements needed to oversee the modernization of the weapons complex and safety of the DOE clean-up program.

Again, thank you for the opportunity to provide this testimony on the Defense Nuclear Facilities Safety Board. I look forward to answering any questions you may have.

Joyce L. Connery

Ms. Joyce L. Connery, a native of Massachusetts, was appointed to the Board and designated Chair by President Obama in August 2015, following confirmation by Congress as a member of the Board for a term expiring October 18, 2019. Ms. Connery has had an extensive career in the fields of nuclear security, safety, nonproliferation and energy policy. Ms. Connery began her career at the national laboratories, first serving in Kazakhstan working on the shutdown of the BN-350 fast breeder reactor and then returning to Washington D.C. to work in the Office of International Safety in the National Nuclear Security Administration (NNSA). She has served in several capacities at the Department of Energy, including as the senior policy advisor for the Deputy Secretary. She also served two tours in the National Security Council from February 2008 through May 2010 in the area of nonproliferation and nuclear security and then again from January 2012 through July 2015 as Director for Nuclear Energy Policy within the Office of International Economics. Ms. Connery received a B.A. and (after a two year stint with the Peace Corps in Turkmenistan) an M.A. from Tufts University.

DOCUMENTS SUBMITTED FOR THE RECORD

FEBRUARY 11, 2016

Statement of Admiral James F. Caldwell
Deputy Administrator for Naval Reactors
National Nuclear Security Administration
U.S. Department of Energy
on the
Fiscal Year 2017 President's Budget Request
Before the
House Committee on Armed Services
Subcommittee on Strategic Forces

February 11, 2016

A strong Navy is crucial to the security of the United States. Navy warships are deployed around the world every hour of every day to provide a credible "forward presence." With over 45 percent of the Navy's major combatants being nuclear powered, including 10 aircraft carriers, 14 ballistic missile submarines, 55 attack submarines, and 4 guided missile submarines – it is vital that these ships are ready when and where our Nation needs them. In addition to supporting these nuclear powered combatants, Naval Reactors has also safely maintained and operated two nuclear powered land-based prototypes – both over 38 years old – to conduct research and development and two Moored Training Ships – both over 51 years old – the oldest operating pressurized water reactors (PWRs) in the world. These land-based prototypes, Moored Training Ships, and Naval Nuclear Power Training Command train over 3000 sailors per year to operate our naval nuclear propulsion plants.

Our ballistic missile submarine force remains on patrol, marking over 60 years of peacekeeping capability through strategic deterrence. The Navy had 34 submarine deployments and 26 strategic deterrent patrols during 2015. In addition, at any given time, there were always at least 56 of 71 submarines deployed or on stand-by to deploy within a few days. Our carriers, USS CARL VINSON (CVN 70) and USS THEODORE ROOSEVELT (CVN 71) completed successful deployments to the Central Command area of responsibility, and the USS RONALD REAGAN (CVN 76) turned over with the USS GEORGE WASHINGTON (CVN 73) to serve as the forward-deployed carrier in Japan.

This past year, we also saw the christening of the attack submarine PCU ILLINOIS (SSN 786) and keel laying for the PCU COLORADO (SSN 788) and PCU INDIANA (SSN 789), our fifteenth and sixteenth VIRGINIA-class submarines. We've also added another attack submarine to our force by commissioning USS JOHN WARNER (SSN 785), and began a program that delivers two VIRGINIA-class submarines annually. In 2015, we laid the keel for the second FORD-Class CVN, PCU JOHN F. KENNEDY (CVN 79). We currently have 12 submarines and one next generation aircraft carrier in various phases of construction at our shipyards. Initial reactor start-up was achieved in the lead reactor plant of PCU GERALD R. FORD (CVN 78), the first new design aircraft carrier propulsion plant in 40 years. This historic milestone represents the culmination of almost 20 years of dedicated and sustained effort by Naval Reactors and its field activities, our Department of Energy laboratories, nuclear industrial base suppliers, the Navy design team and the nuclear shipbuilders. This is the first step in fully

testing the integrated operations of the propulsion plant, culminating in sea trials this spring. Finally, we continued our reactor plant design and reactor core manufacturing development efforts to support of the new design OHIO-class Replacement reactor plant, including the life-of-ship core.

The firm support of this subcommittee last year enabled safe operation of the fleet, Naval Reactors mandatory oversight, and continued progress on key projects. Naval Reactors' budget request for Fiscal Year (FY) 2017 will continue this work. The funding request is for $1.420 billion, an increase of $45 million (3 percent) over the FY 2016 enacted funding level. In addition to supporting today's operational fleet, the requested funding will enable Naval Reactors to deliver tomorrow's fleet by funding three national priority projects and recruiting and retaining a highly skilled work force committed to the Navy and the nation. The projects are:

- Continuing to design the new reactor plant for the replacement of the OHIO-class ballistic missile submarine, which will feature a life-of-ship core and electric drive;
- Refueling a Research and Training Reactor in New York, to facilitate OHIO-class Replacement reactor development efforts and provide 20 more years of live reactor based training for the fleet operators; and
- Building a new spent fuel handling facility in Idaho that will facilitate long term, reliable processing and packaging of spent nuclear fuel from aircraft carriers and submarines.

Naval Reactors has requested funding in FY 2017 to support these projects, and to fund necessary reactor technology development, equipment, construction, maintenance, and modernization of critical infrastructure and facilities. By employing a small but high-performing technical base, the teams at our four Program sites – the Bettis Atomic Power Laboratory in Pittsburgh, the Knolls Atomic Power Laboratory and Kesselring Site in greater Albany, and our spent nuclear fuel facilities in Idaho – we can perform the research and development, analysis, engineering and testing needed to support today's fleet at sea and develop future nuclear-powered warships. Importantly, our labs perform the technical evaluations that enable Naval Reactors to thoroughly assess emergent issues and deliver timely responses that ensure nuclear safety and maximize operational flexibility. This technical base supports more than 15,000 nuclear-trained Navy sailors, who safely maintain and operate the 97 nuclear propulsion plants in the fleet 24 hours per day, 365 days per year around the globe. It will also facilitate delivery, as directed by Congress, of our conceptual plan for potential naval application of low enriched uranium.

The requested increase in funding is also required to support the planned ramp up of design efforts for the new reactor plant for the OHIO-class SSBN Replacement – the Navy's number one acquisition priority. Providing unparalleled stealth, endurance, and mobility, our ballistic missile submarine force has delivered more than 60 years of continuous at-sea deterrence, and continues to be the most survivable leg of the nuclear triad. OHIO-class Replacement SSBN activity this year includes reactor plant design and component development to support procurement of long lead components starting in FY 2019. Progress in these areas in FY 2017 maintains schedule alignment with the Navy as the program moves forward to construction start in FY 2021 while retiring technical risk and targeting cost reduction.

Related to OHIO-class Replacement and the Program's training needs, the FY 2017 budget request will support the land-based prototype refueling overhaul at the Kesselring Site in upstate New York. In FY 2017, Naval Reactors will continue the core manufacturing work needed for the refueling overhaul, which will also enable timely construction of the life-of-ship core for OHIO-class Replacement. Further, plant service-life engineering design will be completed in FY 2017 to ensure that the land-based prototype overhaul, performed concurrently with refueling, supports 20 additional years of research, development and training.

The Naval Reactors FY 2017 budget request also contains funds to continue the Spent Fuel Handling Recapitalization Project. After many years of funding reductions, Naval Reactors greatly appreciates Congressional support for this much needed project in FY 2016, where we received the full request of $86M. Congressional support in 2016 enabled progress, design, and planning for site preparations and long lead material procurements in FY 2017. We will use the $100M requested in FY 2017 to finalize key facility and equipment requirements and advance facility design to support establishing the Performance Baseline in FY 2018 and the start of construction in FY 2019. Continued Congressional support will help ensure that the facility in Idaho is ready to receive spent nuclear fuel from the fleet in FY 2025. Because the new facility's capabilities are required to support aircraft carrier refuelings and defuelings, any delay to the project schedule would require procurement of additional shipping containers to temporarily store naval spent nuclear fuel at a cost of approximately $150M for each year the project is delayed.

At the requested funding level, Naval Reactors can safely maintain and oversee the nuclear-powered fleet. Naval Reactors can also continue to advance the OHIO-class Replacement and Land-based Prototype Refueling Overhaul, continue progress on the Spent Fuel Handling Recapitalization Project, and meet our environmental responsibilities.

Naval Reactors is committed to executing our projects on time and on budget, and continuing the search for the safest and most cost effective way to support the nuclear fleet. I respectfully urge your support for aligning funding allocations with the FY 2017 budget request.

Admiral James F. Caldwell, Jr.
Director, Naval Nuclear Propulsion Program

Admiral James Caldwell received his commission graduating with distinction from the United States Naval Academy in 1981 with a Bachelor of Science in Marine Engineering. He also holds a Master of Science in Operations Research from the Naval Postgraduate School.

Caldwell commanded USS Jacksonville (SSN 699) homeported in Norfolk, Virginia; Submarine Development Squadron (DEVRON) 12 in New London, Connecticut; Submarine Group 9 in Bangor, Washington; and the Submarine Force, U.S. Pacific Fleet, Hawaii. His sea tours include service in both the Atlantic and Pacific Fleets. His operational assignments include duty as a division officer on USS Boston (SSN 703), engineering officer on USS Alabama (SSBN 731) (GOLD), and executive officer on USS Buffalo (SSN 715).

Ashore, Caldwell served on the Pacific Fleet Nuclear Propulsion Examining Board and later as Undersea Warfare (USW) Requirements officer on the staff of Commander in Chief, U.S. Pacific Fleet. He also served as senior member of the Naval Submarine Force's Tactical Readiness Evaluation Team; on the Joint Staff as deputy director for Politico-Military Affairs for Europe, the North Atlantic Treaty Organization, Russia and Africa; and deputy commander for U.S. Strategic Command's Joint Functional Component Command for Global Strike in Omaha, Nebraska and as Naval Inspector General, Washington Navy Yard, D.C. His most recent tour was on the (Office of Naval Operations) OPNAV Staff as the Director, Navy Staff.

He assumed his duties as the Director, Naval Nuclear Propulsion Program in August 2015.

Caldwell's awards include the Distinguished Service Medal, Defense Superior Service Medal, Legion of Merit, Meritorious Service Medal Navy Commendation Medal, Navy and Marine Corps Achievement Medal and the Naval Submarine League's Charles A. Lockwood Award for Submarine Professional Excellence.

Updated: 24 August 2015

SENSITIVE BUT UNCLASSIFIED (SBU)

The Secretary of Energy
Washington, DC 20585

November 20, 2015

MEMORANDUM FOR THE PRESIDENT

FROM: Ernest J. Moniz

SUBJECT: Message to the President

DOE is working on several high-priority "hot potato" issues for the end of the Congressional session and COP 21:

[redacted]

2. MOX: We are working with our appropriators and other stakeholders to shift our plutonium disposition strategy from MOX power reactor fuel to dilution and underground disposal. This is much faster and cheaper. While the Senate appropriators agree with us, the House appropriators are concerned about alienating the South Carolina delegation. Even if we do not succeed in the upcoming appropriators' conference, I believe the groundwork has been laid for FY17. However, we will need to continue talking with the Russians about the change of disposition approach and I discussed this with John Kerry and Susan Rice. DOE's partner in this, Rosatom and Kiriyenko, are amenable to discussion. So far, we have no read on MFA response. This issue will need further interagency work in the context of overall, complicated US-Russia relations.

3. Mission Innovation: The news here continues to be very good. Chile agreed to participate at the end of last week, Brazil joined in on Tuesday, and the Saudi Arabian Deputy Crown Prince affirmed participation last night. Following discussions with Norway and Brazil on the margins of the biannual IEA Ministerial, both countries committed to join Mission Innovation. We now have nine confirmed countries and very likely will end up with a dozen or more for the November 30 launch announcement at COP 21. Bill Gates has also done a terrific job in organizing an international "double bottom line" investor group.

SEC. 3119. DISPOSITION OF WEAPONS-USABLE PLUTONIUM.

(a) MIXED-OXIDE FUEL FABRICATION FACILITY.—

(1) IN GENERAL.—Using funds described in paragraph (3), the Secretary of Energy shall carry out construction and project support activities relating to the MOX facility.

(2) EXCEPTION.—Notwithstanding paragraph (1), not more than $5,000,000 of the funds described in paragraph (3) may be obligated or expended to conduct an analysis of alternative options for carrying out the plutonium disposition program.

(3) FUNDS DESCRIBED.—The funds described in this paragraph are the following:

(A) Funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2016 for the National Nuclear Security Administration for the MOX facility for construction and project support activities.

(B) Funds authorized to be appropriated for a fiscal year prior to fiscal year 2016 for the National Nuclear Security Administration for the MOX facility for construction and project support activities that are unobligated as of the date of the enactment of this Act.

(b) UPDATED PERFORMANCE BASELINE.—The Secretary shall include in the budget justification materials submitted to Congress in support of the Department of Energy budget (as submitted with the budget of the President under section 1105(a) of title 31, United States Code) for fiscal year 2017 an updated performance baseline for construction and project support activities relating to the MOX facility conducted in accordance with Department of Energy Order 413.3B (relating to program and project management for the acquisition of capital assets).

(c) DEFINITIONS.—In this section:

(1) MOX FACILITY.—The term ''MOX facility'' means the mixed-oxide fuel fabrication facility at the Savannah River Site, Aiken, South Carolina.

(2) PROJECT SUPPORT ACTIVITIES.—The term ''project support activities'' means activities that support the design, longlead equipment procurement, and site preparation of the MOX facility.

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

FEBRUARY 11, 2016

RESPONSE TO QUESTION SUBMITTED BY MR. BISHOP

General KLOTZ. The President's FY 2017 budget proposes to terminate the MOX project. The Department will request the MOX prime contractor to determine activities required to place the facility and project in a safe and secure state, winding down construction, design, support, and procurement efforts as quickly as possible so that termination can be done efficiently and cost effectively. DOE will issue contract direction to MOX Services as early as practicable to halt construction activities for 90 days while the discussion and development of a termination plan take place. [See page 18.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

FEBRUARY 11, 2016

QUESTIONS SUBMITTED BY MR. ROGERS

Mr. ROGERS. General Klotz, the Stockpile Responsiveness Program is only a few months old because of the veto silliness on the FY16 NDAA, but tell me: What is NNSA doing to implement it this year and in FY17? How is NNSA going to adjust and refocus its RDT&E and stockpile activities to meet the intent of the Stockpile Responsiveness Program?

General KLOTZ. NNSA recognizes the nuclear security enterprise's need to maintain the complete set of skills and expertise to respond to future stockpile challenges. The enterprise need includes exercising all capabilities required to ensure that the nuclear deterrent remains safe, secure, effective, reliable, and responsive as required by the fiscal year (FY) 2016 National Defense Authorization Act (NDAA).

Several activities within the current Stockpile Stewardship Program that meet the direction of Section 3112 of the FY 2016 NDAA have already been implemented. Relevant activities include:

- Planning for an increased rate of hydrodynamic and subcritical experiments (at Nevada National Security Site, U1a facility) to test and exercise designers, engineers, and experimentalists.
- "Certification Readiness Exercises" (research and development studies and experiments) for our technical experts to identify and reduce technical risks to the life extension programs early in the process.
- Significant acceleration of the shot rate at the National Ignition Facility to exercise designers, experimentalists and diagnosticians.
- Collaboration with the United Kingdom on the Joint Technology Demonstrator, which exercises the workforce throughout the design, develop, manufacture, and prototype lifecycle.
- The Defense Programs "Capabilities for Nuclear Intelligence" (CNI) portfolio with the Research Development Test & Evaluation portfolio provides training and development activities for designers, engineers, and experimentalists on non-US nuclear weapons concepts, providing great benefit to the stockpile stewardship program.
- 120-day studies on interoperable warhead concepts, conducted in 2012, which also tested the capabilities of technical experts.
- Additionally, in early FY 2015, NNSA's Defense Programs Advisory Committee began analyzing how well current stockpile stewardship activities exercise and challenge the workforce throughout the entire nuclear weapons life cycle. The committee expects to deliver a report to NNSA in 2016, providing their recommendations relevant to the Stockpile Responsiveness Program. This report will provide a basis to establish the scope required to ensure stockpile responsiveness in the future. The FY 2018 Stockpile Stewardship and Management Plan will more fully address NNSA's plan for the Stockpile Responsiveness Program based on these results and further analysis.

Mr. ROGERS. General Klotz, unlike the newly born Stockpile Responsiveness Program, the PNWIE program has been statutorily required for three years. Just a few weeks ago—and almost a year late—the committee received the NNSA lab directors' plan for how to carry out this program. But the cover letter states that DOE "is not advocating for implementation of the plan." Meanwhile the law explicitly says "the Secretary of Energy, in coordination with the directors, shall carry out the plan," but gives him the authority to adjust how it is implemented. General, I know we share the same goals here. We want to set NNSA up for the future and we want our lab scientists and engineers to do this work. What are you doing to implement this program? When will you begin executing an initial PNWIE effort?

General KLOTZ. There was no funding authorized or appropriated specifically for the Prototype Nuclear Weapons for Intelligence Estimates (PNWIE) program in fiscal year (FY) 2016. However, DOE/NNSA is already executing activities that exercise the continuum of integrated lifecycle activities, including design, development, prototype building, and experimental testing. These activities include intelligence-informed efforts conducted by Defense Program's Capabilities for Nuclear Intelligence (CNI) program, which is coordinated with the Foreign Nuclear Weapons In-

telligence Initiative (FNWII). The CNI effort includes a training and development practicum as well as activities that range from materials characterization to modeling to sub-system level testing. Of note, NNSA is also allocating additional funding to the Joint Technology Demonstrator (JTD) program that we recently initiated with the United Kingdom. The JTD program will sustain core capabilities in the design, manufacture, testing, fabrication and assembly of flight-ready hardware. Finally, we are developing a stockpile responsiveness framework to summarize and examine the FNWII, JTD and all ongoing stockpile activities that are responsive to the goals of section 3111 of the FY 2015 NDAA.

Mr. ROGERS. General Klotz, what more could NNSA be doing on deferred maintenance if provided additional funding? We need to start bending this curve down and Congress needs to step up. Can you please provide a list of high-priority projects that you aren't funding in the request?

General KLOTZ. Over the past three years, NNSA has been successful in slowing the annual growth of deferred maintenance from $250M/year to $100M/year. The Consolidated Appropriations Act for FY 2016 allows us to stop the growth of deferred maintenance. Our FY 2017 request allows us to begin reducing deferred maintenance and arresting the decline of NNSA infrastructure by:

- Increasing funds for recapitalization and maintenance efforts
- Disposing of excess facilities
- Increasing buying power via strategic procurement of common building systems across the enterprise (e.g., roofs, HVAC)
- Improving project management capabilities to make risk-informed investment decisions

However, additional strategic investments in infrastructure could be made to accelerate NNSA's progress in arresting the declining state of infrastructure and reducing deferred maintenance. As requested, a list of prioritized infrastructure investments is provided below. Note that neither I nor the Secretary endorse any of these additional priorities given the spending limits created by the Bipartisan Budget Act of 2015 (BBA). We have made extensive efforts to thoroughly assess, prioritize, and balance the program to achieve the major requirements in the FY 2017 budget request. Any extra funding inserted into our Recapitalization program will come at the expense of other programs we deem more important to the effectiveness of the nuclear enterprise as a whole.

National Nuclear Security Administration
Infrastructure and Safety
Unfunded FY 2017 Recapitalization Projects—As of February 2016

Rank	Site	Project Name	Total Project Cost ($K)
1	LLNL	Site 300 Electric Utility Display System Upgrade	$ 7,000
2	LANL	LANSCE Sector A Tunnel Fire Suppression System Installation	$ 3,000
3	LLNL	B132N HVAC System Variable Air Control Replacement	$ 5,000
4	Y–12	Bldg 9204–2E Wet Pipe Systems 1&2 50 Year Sprinkler Head Replacement	$ 5,500
5	Y–12	Bldg 9995 Air Handling Unit (AHU) 2000 Replacement	$ 6,000
6	Y–12	Area 5 15 kV Underground Cable Replacement	$ 5,000
7	KCP	Kirtland Ops NC–135 Site Disposition	$ 4,900
8	LLNL	Bldg 175 Characterization	$ 1,500
9	Y–12	Bldg 9204–2 Ceiling Concrete Replacement (additional scope)	$ 6,000
10	PX	Bldg 12–84E Generator Replacement	$ 2,000
11	KCP	Bldg 2 Specialty Welding Applications Capital Equipment Replacement and Upgrade	$ 1,200
12	LANL	PF–4 Vault Storage Renovation	$ 7,500
13	LLNL	Utility Safety Upgrades to Plating Shop, B322	$ 2,500

National Nuclear Security Administration—Continued
Infrastructure and Safety
Unfunded FY 2017 Recapitalization Projects—As of February 2016

Rank	Site	Project Name	Total Project Cost ($K)
14	SNL	C914 Seismic Upgrades to Achieve Code Compliance	$ 9,720
15	LLNL	Bldg 292 Characterization	$ 2,000
16	LLNL	Site 200 and 300 Transition and Disposition of 48 Trailers	$ 2,500
17	SNL	SNL—Hawaii Mt. Haleakala Disposition of 3 Facilities	$ 934
18	LLNL	Site-Wide Low Conductivity Water System Station/Cooling Tower Replacement	$ 6,000
19	LLNL	Main Campus—Failing Underground Utility Valves and Water Distribution Piping Replacement	$ 5,000
20	PX	Building 12–84E Generator Replacement	$ 2,000
21	SNL	C912 Major Building Renovation, Phase 3	$ 5,000
22	LLNL	B131 Engineering's Cornerstone Office Building Upgrade	$ 7,500
23	KCP	Product Testing Area Capital Equipment Replacement	$ 2,490
24	SNL	Substation 5 Loop Upgrade, Redundant Feeder Installation	$ 5,000
25	Y–12	9204–04 Deinventory	$ 8,000
26	PX	Bldg 12–24E Chiller Replacement	$ 2,000
27	LANL	Small Improvement Project in 3 Facilities (53–003,22–0005, 03–0039)	$ 1,300
28	LLNL	B805 Classified Machine Shop Infrastructure Renovation	$ 3,500
29	LANL	CMR Initial Facility Closure (additional scope)	$ 1,500
30	LLNL	B327 Non-Destructive Evaluation Laboratory Renovation	$ 2,500
31	LLNL	B391 HVAC Water Temperature Control Upgrade	$ 3,000
32	Y–12	Re-line Failing Sections of Sitewide Potable Water Distribution Piping	$ 8,000
33	LANL	TA–03–0102 Component Manufacturing Virtual Vault Type Room Installation	$ 1,599
34	KCP	Production Area Renovations for Floor Space Optimization	$ 2,143
35	LLNL	Disposition of Buildings B326, B221, & B221 Retention Tanks	$ 2,000
36	SNL	C911 Renovation to Convert Office to Lab Space	$ 5,000
37	PX	Bldgs 12–85 and 12–96 UPS Replacements	$ 2,250
38	PX	Bldg 12–44 UPS Replacement & Equipment Room Reconfiguration	$ 3,000
39	PX	Bldg 11–51 Generator and UPS Replacement	$ 2,250
40	PX	Bldgs 12–98E1 and E2 UPS and Generator Replacement	$ 3,000
41	LANL	Weapons Engineering Tritium Facility Glovebox and Systems Renovation	$ 8,250
		Total	**$ 164,536**

Mr. ROGERS. General Klotz, you submitted a plan last September on three projects where NNSA was considering using public-private partnerships to build new, modern buildings and get out of some of these ancient facilities. What's the status of these projects? Why can't we get these going as public-private partnerships?

General KLOTZ. As stated in our Public-Private Partnerships Report to Congress, we are required to perform an Analysis of Alternatives (AoA) to determine best

value to the government. When completed, our analysis must be reviewed by the Office of Management and Budget (OMB) as consistent with the A–94 and A–11 guidelines agreed to by OMB, the Congressional Budget Office, and the Congressional Budget Committees.

Pantex Administrative Support Complex (ASC):

DOE's AoA for the Pantex ASC revealed that a public-private partnership would satisfy the mission need at the best value to the government.

High Performance Computing Innovation Center (HPCIC)/Collaboration in Research and Engineering for Advanced Technology & Education (CREATE):

NNSA is completing business cases for each of these projects, but has not yet submitted them to OMB review.

NNSA Albuquerque Complex Project (NACP):

NNSA included the NACP as a line item in the FY 2017 President's Budget Request.

Mr. ROGERS. General Klotz, I want to revisit with you my theme of setting NNSA up for the future. You'll recall an editorial "Mr. Moniz's Nuclear Warning" by the Wall Street Journal, published January 12th, that is based on a remarkable letter from your boss, Secretary Moniz, to the Director of OMB. The letter points to the problem we discussed—decaying NNSA infrastructure—as well as many other problems that require significant funding to address. The letter concludes by requesting that in the FY17 budget request OMB provide NNSA "an upwards adjustment of $5.2 billion over FY18–FY21 to fund the Administration's goals and priorities" related to the nuclear enterprise. It goes on: "Failure to address these requirements in the near term will put the NNSA budget in an untenable position beginning in FY18, will not provide an appropriate statement of the Obama Administration legacy, and will provide a misleading marker to the next Administration as to the resource needs of the nuclear security enterprise."

So General Klotz, we're talking about the future. And the budget request before us—while okay in the immediate year—the Secretary of Energy is saying it is short a billion dollars a year over the next 5 years. And we've heard GAO say that there is a major gap between NNSA's programmed activities and its out-year budget profile.

You have a duty to be clear with Congress and the American people: What are the no kidding budget requirements for the 5-year program at NNSA? Does the budget request and 5-year plan before us fix the issue the Secretary wrote about in his letter to OMB?

General KLOTZ. I am confident that the FY 2017 President's Budget for NNSA meets all of our national nuclear security requirements.

We will be able to do so because the President and Congress reached an agreement last fall to raise the FY 2017 sequester cap in the Bipartisan Budget Act. This provided us the necessary flexibility to put together a responsible FY 2017 budget.

The budget projections for future years, FY 2018–FY 2021, remain subject to the sequester caps set in the Budget Control Act of 2011. Adjustments to the Congressional sequester caps are needed so the next Administration can continue the progress we have made in our nuclear security programs.

Mr. ROGERS. General Klotz, will NNSA submit a rebaseline on the MOX project, as required by the FY16 NDAA?

General KLOTZ. Yes. The Department is in the process of updating the performance baseline.

Mr. ROGERS. General Klotz, we see that the budget request includes a substantial decrease in the amount that was expected to be requested for the life extension program for the W80–4 warhead that will arm the LRSO cruise missile in the late-2020s. Last year you projected you would request $312 million for this program in 2017, but now we see you are only requesting $220 million. This is a 30% reduction and it's occurring very, very early in the program. I'm worried this shows a lack of commitment to this incredibly important program. Our military and DOD officials have spoken repeatedly about the critical nature of getting LRSO in the field. So, to be clear, is the Obama Administration 100% committed to the 2025 date for a first production unit for this warhead? Is this commitment iron clad and will this budget request support that? Can we say we have your word on this?

General KLOTZ. Yes, the Administration is committed to the 2025 date for a first production unit (FPU) of the W80–4. NNSA balances priorities among the near-term and long-term needs of managing the stockpile to include life extension programs; necessary sustainment and recapitalization of infrastructure; essential investment in research, development, test, and evaluation; and activities to maintain the expertise of the highly-skilled workforce to ensure a responsive capability. The W80–4 Life Extension Program (LEP) remains a high priority. The reduction was caused

by the delay in budget execution as a result of the 2016 continuing resolutions. This delay slowed technology maturation activities in Phase 6.2 (Feasibility Study and Design Options) and has resulted in a projected carry-over of roughly $50 million that will be used to address program requirements in FY 2017.

Mr. ROGERS. General Klotz, the B61–12 and W76–1 life extension programs are both well underway at this point. Please give us a status update on these programs. Are you confident they will finish on time and on budget? What are the major risks to the successful execution of these programs? Are they technical? Or are they in getting the funding needed to execute?

General KLOTZ. The FY 2016 enacted budget for the B61–12 Life Extension Program (LEP) is $643.3 million and the FY 2017 budget request is $616.1 million with $2.9 billion planned for FY 2018–2021. That funding profile reflects the transition from Development Engineering (Phase 6.3) to Production Engineering (Phase 6.4), which occurred in June 2016, as component activities begin pilot production and production qualification activities. The final cost and schedule baseline for the B61–12 LEP will be completed in August 2016 as part of the Baseline Cost Report.

As with each major modernization program budget, the FY 2016 budget for the B61–12 included an amount of management reserve to address emerging risks and has been used to offset shortfalls in leveraged science and engineering programs that are supporting technology or production readiness. The B61–12 LEP expects to carryover a portion of the risk based funds into FY 2017 giving it the ability to support the W88 ALT 370 reprogramming proposed in FY 2016. While there are potential concerns with reducing the B61–12 risk funds, there is a greater impact if the W88 ALT 370 is not fully funded in FY2016. Currently, the B61–12 LEP shares $250 million in common electronics development costs with the W88 ALT 370. If these activities were delayed, it would impact B61–12 common scope and/or increase B61–12 costs. On balance, it is a manageable risk to fund $5 million of the W88 Alt 370 reprogramming. That is not to say that the reprogramming carries no risk to the B61–12 LEP, but this option does offer the least risk to the overall Defense Programs mission.

The most significant risks to the B61–12 LEP are inconsistent funding, significantly reduced funding, and continuing resolutions of significant duration. If the program does not receive the funding requested through the Future Years Nuclear Security Program (FYNSP), the program may not be able to complete the work load that has been planned for each year, address risks that are realized in future years, or maintain the current schedule. Additionally, a year-long continuing resolution in FY 2018, for example, could hold the program to the FY 2017 funding level—a reduction of more than $110 million from what is planned in the FYNSP for FY 2018. Those unplanned and dramatic funding reductions are the most serious risk to the program.

The W76–1 LEP is on schedule and within budget. The program is in its eighth year of full-scale production. By the end of FY 2015, NNSA had delivered almost 60 percent of the total required W76–1 warheads to the United States Navy. The last production unit will be produced no later than the end of FY 2019.

Mr. ROGERS. General Klotz, counterintelligence and cybersecurity threats to NNSA and its facilities are increasing in quantity and sophistication. Can you assure us NNSA can defend against all of these threats and prevent the escape of sensitive information? The DOE–IG recently reported on a host of problems NNSA is having implementing its "2NV" cloud computing solution. What did the IG find and do you agree with them? How are you fixing this?

General KLOTZ. The NNSA is doing everything it can to assure that it is protecting the information and information assets with the funds appropriated and the resources available. Cybersecurity is one of the greatest challenges the U.S. Government faces. NNSA is always working to stay ahead of our adversaries to protect our networks and databases. We take this task very seriously as our program is responsible for safeguarding our Nation's most sensitive nuclear security information. We are modernizing our sensors and defenses, conducting independent performance evaluations, and have employed a strong central control construct to reduce our risk and the probability of data exfiltration.

However, there are no guarantees in cybersecurity, the adversaries are continually evolving using more advanced technology and there are always opportunities to improve our security posture.

With regard to the NNSA's challenges with 2NV, the DOE IG identified three basic points of failure: lack of project management, lack of oversight, and ineffective communication mechanisms between project teams and NNSA leadership. NNSA concurs with the IG's assessment of the project and through reforms that have been implemented since the initial launch of the 2NV project, NNSA is confident that we

have put in place the administrative infrastructure needed to ensure effective implementation of 2NV and our other IT projects.

NNSA has carefully reassessed project requirements and realigned the deliverables to mission and business functions. NNSA has also implemented numerous project management improvements. Most notably, we have issued and implemented the requirements of NNSA Supplemental Directive 415.1, Project Oversight for Information Technology, and established the Office of Policy and Governance to provide ongoing, independent oversight for our projects to ensure the principles of the new directive are consistently applied.

Mr. ROGERS. General Klotz, when will NNSA submit data in compliance with subsection (f)(4) of 50 U.S.C. 2441a, regarding the number of contractor employees who have been employed under a service support contract to NNSA for a period of greater than two years? This information is critical to understanding whether NNSA is illegally employing personal service contractors. Please submit the data by to the committee by the end of March.

General KLOTZ. NNSA does not have any personal service contracts, as we do not have statutory authority to enter into such contracts. NNSA submitted data in compliance with subsection (f)(4) of 50 U.S.C. 2441a regarding support service contracts with the President's FY 2017 Budget. A copy of the appropriate section from the President's FY 2017 Budget is attached (please see attached graphic).

Support Service Contracts

SEC. 3138. ANNUAL REPORT ON NUMBER OF FULL-TIME EQUIVALENT EMPLOYEES AND CONTRACTOR EMPLOYEES.

Section 3241A of the National Nuclear Security Administration Act (S0 U.S.C. 2441a) is amended by adding at the end the following new subsection:

"(f) ANNUAL REPORT.-The Administrator shall include in the budget justification materials submitted to Congress in support of the budget of the Administration for each fiscal year (as submitted with the budget of the President under section llOS(a) of title 31,United States Code) a report containing the following information as of the date of the report:

"(1) The number of full-time equivalent employees of the Office of the Administrator, as counted under subsection (a).

"(2) The number of service support contracts of the Administration and whether such contracts are funded using program or program direction funds.

"(3) The number of full-time equivalent contractor employees working under each contract identified under paragraph (2).

"(4) The number of full-time equivalent contractor employees described in paragraph (3) that have been employed under such a contract for a period greater than two years.".

The following table provides information required in paragraphs (f)(2) and (f)(3). NNSA does not have information to address paragraph (f)(4),it is the responsibility of individual contractors/employers to determine how to address contract requirements and who will perform the work. The FSE chapter of the budget provides information for (f)(l).

For this report Service Support Contracts were determined using definitions in the OMB Memorandum November 2011 "Management Support Services",the DOE Annual Service Contract Inventory: SpecialInterest Functions FY 2014,the DOE Acquisition Guide,and expanded to include any other services not otherwise captured that are funded with "Federal Salaries and Expenses." The following services: Management and Operating contracts,contracts for housekeeping, custodial,physical security,and facilities maintenance.

Vendor Name	FTEs	Funding Source
ACTIONET,INC	5.0	Program
ALLEGHENY SCIENCE & TECHNOLOGY CORPORATION	5.0	Program
ALUTIIQ COMMERCIAL ENTERPRISES LLC	10.7	Program Direction
BANDA GROUP INTERNATIONAL,LLC	8.0	Both
CE2 CORPORATION INC	40.1	Program Direction
CENTRAL RESEARCH INC	8.0	Program Direction
CHENEGA GOVERNMENT CONSULTING,LLC	55.5	Program
CONFERENCE OF RADIATION CONTROL PROGRAM DIRECTORS INC	0.3	Program
CORPORATE ALLOCATION SERVICES,INC	20.5	Program
COUNTY OF NYE	4.0	Program
CRITERION SYSTEMS,INC.	50.0	Both
DELTA RESEARCH ASSOCIATES INC	1.0	Program
EXELIS INC	1.5	Program
GENQUEST INC	22.0	Both
GLENN JR,MELTON SAMUEL	0.5	Program
HW&WINC	3.0	Program Direction
HENRY LSTIMSON CENTER	2.0	Program
INTERNATIONAL SERVICES AND ADVISORS INC	4.0	Program
JDG ASSOCIATES,INC.	3.5	Program Direction
JG MANAGEMENT SYSTEMS INC	8.0	Both
LINK TECHNOLOGIES INC	9.5	Program
LONGENECKER AND ASSOCIATES,INC	37.5	Both
LTD GLOBAL,LLC	0.5	Program
MELE ASSOCIATES INC	58.0	Program
NAVARRO RESEARCH AND ENGINEERING,INC	29.0	Program
ONPOINT CONSULTING INC	66.0	Program
PARSONS GOVERNMENT SERVICES INC	43.0	Both
PMTECH,INC	8.5	Program
PROJECT ENHANCEMENT CORPORATION	7.3	Both
RANDOLPH CONSTRUCTION SERVICES INC	28.0	Program
REEVES CONSULTINGUC	2.0	Program
SALMON GROUP,INC.	12.4	Both
SES-TECH GLOBAL SOLUTIONS	22.0	Program
SIGMA SCIENCE INC	2.0	Program
SYNERGY SOLUTIONS INCORPORATED	53.0	Both
TECHSOURCE INC	103.0	Both
TETRA TECH INC	0.5	Program
TIME SOLUTIONS LLC	3.1	Program Direction
VECTOR RESOURCE INC	16.0	Both
Grand Total	**753.7**	

Mr. ROGERS. General Klotz, please elaborate on why NNSA proposes such significant cuts to technology maturation efforts within Defense Programs. What are the long-term effects of such cuts?

General KLOTZ. In the FY 2017 President's Budget Request, technology maturation (early development) funding was reduced in order to fund higher priority needs within the weapons program. NNSA is balancing near and long-term risks in a fiscally constrained environment, incrementally prioritizing long-term technologies for planned insertion opportunities in future stockpile modernization programs.

Mr. ROGERS. General Klotz, NNSA's staffing analysis shows that Defense Programs and Defense Nuclear Nonproliferation program have the same number of federal employees. But Defense Programs has four times the funding and most of the safety, security, and liability issues. Why is there such a huge imbalance in staffing?

General KLOTZ. Both Defense Programs (DP) and Defense Nuclear Nonproliferation (DNN) require an appropriate amount of staffing to ensure their respective mission requirements are achieved.

Since FY 2012, the DNN full-time equivalent (FTE) count has decreased from 260 to its FY 2017 projected level of 187 (28% decrease).

The DNN business model includes managing twelve major programs to a global customer base supporting over 100 countries, international and USG interagency partners. DNN also exercises nuclear export control regulatory responsibilities which has significant federal manpower responsibilities.

As DNN's mission evolves in response to future Presidential policy guidance related to global nuclear security threat reduction, the program will continue to analyze how the future mission requirements will impact future manpower and staffing needs. In FY 2017, DNN will continue its efforts to meet current and future workforce needs by analyzing how evolving missions are affecting job requirements.

NNSA, like other technically inclined agencies, faces increasing attrition numbers on an annual basis, due to the difficulty of attracting and retaining skilled, trained, and educated individuals to fill (and backfill) critical roles within the nuclear security enterprise. NNSA has embarked on a workforce and human capital strategy which leverages all the management tools and flexibilities at our disposal to ensure that we recruit, hire and retain the best workforce to execute our mission. Reshaping of the entire NNSA workforce, including DNN and DP, over the next several years will be essential to effectively executing our mission. This includes identifying and developing the appropriate skill sets as well as examining the size of the overall and programmatic work forces.

Mr. ROGERS. Ms. Regalbuto, you served on the technical team for the Waste Treatment Plant (WTP) under Secretary Chu and now you lead DOE's Environmental Management program. Just this past year, DOE asked the court to amend the consent decree to provide the Department another two full decades before being required to start processing tank waste at the Hanford Site in Washington State. Do you believe you can get the entire WTP system, including WTP's pre-treatment facility, operational by 2039? Will you have to build more double shell tanks at Hanford and at what cost? What will be the total lifecycle cost for WTP for design, construction, operation, and eventual demolition?

Secretary REGALBUTO. The Department of Energy (DOE) had proposed milestones, together with conditions that could require those milestones to be modified as additional information is obtained, based in part, on the need to resolve the remaining technical issues at the Waste Treatment Plant's Pretreatment and to a lesser degree, High-Level Waste facilities. The milestones proposed by DOE were also based on the uncertain amount of redesign activities that may be needed once technical issue resolution is completed. DOE informed the court that it will voluntarily initiate direct feed low-activity waste operations as soon as 2022, allowing vitrification to begin for the much larger low-activity portion of the tank waste prior to achievement of initial plant operations for the overall WTP complex. After the date of this hearing, the Court in the case of Washington v. Moniz, NO: 2:08–CV–5085–RMP, issued its third order regarding the parties' proposals to modify the Consent Decree. DOE is currently undertaking a detailed examination of the Court's decision. The tank cleanup mission at Hanford is both massive and complex. DOE remains committed to the successful completion and operation of the Waste Treatment Plant as a method for processing waste stored in underground tanks at Hanford as soon as practicable.

DOE does not expect to have a need to build more double-shell tanks. If, however, the construction of new double-shell tanks becomes necessary, DOE estimates it would cost $85 million to $150 million to build a new, one-million gallon double-shell tank.

A credible estimate of total lifecycle cost for the WTP design, construction, operation, and eventual demolition is not available at this time due to a number of uncertainties and technical and programmatic issues associated with the WTP Project. Key issues include: resolution of technical issues with the Pretreatment and High-Level Waste facilities; on-going efforts to re-baseline the Low-Activity Waste Facility, Analytical Laboratory, and Balance of Facility portions of the project; and assessment of the on-going litigation with the State of Washington. All of these factors will likely result in changes to the Total Project Cost for the WTP project and the costs associated with operations and eventual demolition.

Mr. ROGERS. Ms. Connery, what are the safety impacts of NNSA's deteriorating infrastructure and $3.7 billion backlog of deferred maintenance? Is all of this decrepit infrastructure becoming a safety hazard? Has your Board held any hearings on this issue, or sent any letters to DOE or NNSA? Does DNFSB support efforts to buy-down NNSA's backlog of deferred maintenance?

Ms. CONNERY. The complex's aging facilities and resultant backlog of maintenance are continuing safety concerns. Delays to NNSA's efforts to modernize its infrastructure have exacerbated safety related issues and have necessitated that ongoing programmatic work be performed in degrading defense nuclear facilities that do not meet modern safety standards. The Board supports DOE and NNSA's efforts to de-

velop new defense nuclear facilities and will continue to work closely with them to integrate safety into their designs at the earliest stages.

The Board agrees that infrastructure risk can become safety risk. It should be noted, however, that the overall NNSA deferred maintenance backlog of $3.7 billion includes nondefense nuclear facilities and infrastructure that have little or no bearing on the safety of defense nuclear operations. Many of the items in NNSA's deferred maintenance database are roofs, office air conditioning systems, shop utilities, and the like. At some sites these types of deferred maintenance vastly exceed corrective maintenance backlogs or deferred preventive maintenance on nuclear safety-related structures, systems, and components (SSC) and processing equipment. Nevertheless, infrastructure risk in a nondefense nuclear facility can pose a nuclear safety risk under some circumstances.

The number and severity of risks increases when the amount of deferred preventive maintenance and corrective maintenance backlog rises. Each nuclear facility has a Documented Safety Analysis (DSA) and accompanying Technical Safety Requirements which set forth the preventive maintenance and surveillance requirements for the safety class and safety significant SSCs credited in the DSA to prevent or mitigate hazardous accident scenarios. The implementation of these maintenance and surveillance requirements is key to ensuring the SSCs will reliably perform their credited safety functions.

The Board has made maintenance of safety systems and management of aging infrastructure continuing areas of emphasis in recent years. In the past three years, this effort has included on-site reviews of maintenance programs at five NNSA facilities by our staff, multiple visits by Board Members to evaluate maintenance programs and aging infrastructure at the Y–12 National Security Complex and Pantex, public hearings at Pantex and Y–12 which addressed these topics, letters to NNSA on maintenance programs at Pantex (November 12, 2015) and Sandia National Laboratories (May 12, 2014), and a letter to NNSA on the structural integrity of aging production facilities at Y–12 (February 4, 2015). In addition, the Board annually receives a written report and briefing from NNSA on maintaining safety of aging facilities at Y–12 in response to a prior reporting requirement issued by the Board.

Furthermore, the Board has also increased its focus on emergency preparedness and response capabilities, the last line of defense for this aging infrastructure. Hosting both public meetings and hearings, the Board subsequently made several recommendations complex wide and site specific on emergency preparedness and response capability. In September 2014, the Board issued Recommendation 2014–1, Emergency Preparedness and Response, to address deficiencies with DOE's promulgation of and oversight of compliance with requirements. The Board focused staff reviews in 2015 on the assessment of implementation of these requirements at defense nuclear facilities. These assessments included site-specific reviews at the Pantex Plant and Savannah River Site as well as observation of drills and exercises at the Y–12 National Security Complex, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Sandia National Laboratories, Pantex Plant, Savannah River Site, and Hanford Site. The review at the Pantex Plant led to the identification of significant issues that warranted near-term resolution. As a result, on November 24, 2015, the Board issued Recommendation 2015–1, Emergency Preparedness and Response at Pantex, to address the identified deficiencies.

Mr. ROGERS. Ms. Connery, do you believe DNFSB's enabling statute requires all Board Members to be provided full access to all Board information, including information on all Board employees and personnel? Congress has legislated on this matter twice and that was the clear intention. Do you agree?

Ms. CONNERY. The Atomic Energy Act, as amended, provides that each Board Member shall have full access to all information relating to the performance of the Board's functions, powers, and mission. I fully support individual Board Members' access to information as interpreted by the Department of Justice in the memo previously provided to this Committee. I agree to be bound by the opinion from the Department of Justice to allow sharing of all information, including information on all Board employees and personnel, necessary for the Board to fulfill its policy making function and its oversight function over the Department of Energy. I further agree with the Atomic Energy Act language that I will not withhold from Board Members, information that is made available to me that relates to the Board's policy and oversight functions. In the sharing of information, I seek the advice of the General Counsel to ensure that the Board complies with the Atomic Energy Act and all other statutory and legal requirements for the protection of information such as the Privacy Act and the protection of classified information.

Mr. ROGERS. Ms. Connery, what steps are you taking to address the concerns expressed by DNFSB employees in recent OPM employee surveys?

Ms. CONNERY. DNFSB took a number of actions in FY 2015 to address employee concerns expressed in the 2014 Federal Employee Viewpoint Survey (FEVS) survey results. Examples include: establishment of a working group to adopt agency core values; use of an executive coach on an ongoing basis to develop better communication techniques; regular agency-wide and office staff meetings to provide increased opportunities for employee feedback and participation; and expanded leadership training for its executives. In 2015 DNFSB's FEVS results indicate the agency made notable progress in multiple areas. DNFSB achieved a response rate of 84% (34% higher than the government-wide average) and experienced increases in almost all scores (96%), with 59% of the scores improving by double-digits. I believe this shows the agency is moving in the right direction to address employee concerns, and we will continue to build on these efforts to influence positive change.

Mr. ROGERS. Admiral Caldwell, you're putting together a report to Congress on the potential of using low-enriched uranium fuel in navy reactors. Your predecessor (who is now your boss) told us last year that there are no military benefits provided by switching to low-enriched fuel in Navy reactors. Do you agree?

Admiral CALDWELL. US Navy warship requirements determine naval fuel system design features including use of highly enriched uranium (HEU) fuel. Substituting low-enriched uranium (LEU) fuel for the HEU in current naval fuel systems would decrease reactor energy and lead to more frequent reactor refueling. LEU fuel would fundamentally decrease the available energy in a naval reactor, thereby reducing a naval warship's availability and longevity. The impact of LEU may be mitigated in aircraft carriers by developing an advanced naval fuel that could increase uranium loading beyond what is practical today and meet the rigorous performance requirements for naval reactors. An advanced fuel system might enable either higher performance with HEU fuel or use of LEU fuel in aircraft carriers. Advanced fuel development is estimated to take about $1 billion, 10–15 years to develop, and would have to begin well in advance of any ship application. Successful development of an advanced fuel system is not assured.

Switching to LEU fuel in naval reactors would be beneficial in allowing the U.S. to take a leadership role in non-proliferation by reducing the need to produce new HEU. Although an LEU development program would likely not produce a more militarily desirable reactor design, the knowledge gained during the research and development work would be beneficial to advance the state-of-the-art in U.S. naval reactor design and manufacturing. Fuel development work would also help sustain and build the cadre of highly specialized naval fuel experts and unique fuel irradiation and post irradiation examination infrastructure.

Mr. ROGERS. Admiral Caldwell, what are your top priorities for FY17? Is your budget aligned with that of the larger Navy? What happens if your program gets out of alignment with Navy programs like the OHIO-class Replacement program?

Admiral CALDWELL. Naval Reactors' entire budget supports the safe and effective operation of the nuclear-powered Fleet, today and tomorrow. Naval Reactors' funding requests can be directly linked to this single, over-arching priority of supporting the safe and effective operation of the nuclear-powered fleet. In FY 2017, this entails effective oversight of the operation and maintenance of 97 reactors in 73 submarines, 10 aircraft carriers, and 4 training and research reactors. This priority will be met in the most effective and judicious way possible.

The main budget components that support today's operating fleet are Naval Reactors Operations and Infrastructure (NOI), Naval Reactors Development (NRD), Program Direction and Construction. The remainder of the budget, primarily OHIO-Class Replacement Reactor Systems Development, S8G Prototype Refueling and the Spent Fuel Handling Recapitalization Project, supports tomorrow's fleet. In FY 2017, the OHIO-Class Replacement project will continue life of the ship reactor core manufacturing development activities and detailed design of reactor plant heavy equipment to support FY 2019 GFE procurement. The S8G Prototype Refueling project will complete construction of the Radiological Work and Storage Building and commence refueling equipment checkout and training at the shipyards. The Spent Fuel Handling Recapitalization Project will finalize key facility and equipment requirements and advance facility design to support establishing the Performance Baseline in FY 2018 and the start of construction in FY 2019.

Our budget is aligned with the larger Navy. We work closely every day with our partners in the Navy to ensure that our budget is aligned with the mission, performance requirements and schedules.

Specifically, for the OHIO-Class Replacement program, the Department of Energy and Navy efforts are directed at supporting this schedule, including development of the propulsion plant design to support procurement of long-lead components in FY 2019 to support a construction start in FY 2021 and ship delivery in FY 2028. After completing ship operational testing, the first OHIO-Class Replacement must be on

strategic patrol by 2031 to meet STRATCOM force level requirements. Given that the first OHIO-Class Replacement submarine, a ship twice the size of the VIRGINIA-Class submarine, is planned to be constructed within the same span of time; this schedule is aggressive and requires close coupling of Department of Energy and Department of Navy activities to ensure on time ship delivery.

The design and construction of OHIO-Class Replacement is a complex effort that requires extensive coordination between not only Naval Reactors and the Navy's Shipbuilders, but also the Navy's Strategic Systems Programs that are responsible for the missile systems and the British Navy, who will use the Common Missile Compartment design in their upcoming SSBNs. Because they each depend so heavily on each other, these four design efforts must be synchronized, in close collaboration to retire risk early and minimize estimated construction costs.

Given the criticality of Naval Reactors' Department of Energy activities to Navy priorities and mission, funding cuts to Naval Reactors' DOE budget can adversely impact strategic objectives and plans, especially ship design and construction and nuclear operator training.

QUESTIONS SUBMITTED BY MR. COOPER

Mr. COOPER. A recent NAS report recommended a clean-slate approach to building new nuclear weapons and building prototypes in order to exercise design and production skills. Do you agree and do you believe NNSA and the labs should focus on building prototypes? What would the cost be and how would it compare with NNSA priorities?

General KLOTZ. NNSA recognizes the need to ensure that the nuclear security enterprise maintains the complete set of skills and expertise to respond to future challenges, exercise capabilities required to ensure that the nuclear deterrent remains safe, secure, effective, reliable, and responsive as required by the FY 2016 National Defense Authorization Act (NDAA). For this reason, NNSA's current Stockpile Stewardship and Stockpile Management portfolios address many of these necessary capabilities. In particular, our current portfolio includes a spectrum of strategically aimed efforts in prototyping from small-scale validation experiments to well-diagnosed hydro tests up to larger demonstration experiments. At the component level, we are prototyping new technologies for improving safety and for limited-life components that will make the stockpile easier to maintain. We are also building weapon prototypes at the system level and using our world-class science facilities—the National Ignition Facility (NIF) at LLNL and the Dual Axis Radiographic Hydrodynamic Test (DARHT) facility at LANL—to study how these prototypes perform under extreme conditions found in nuclear weapons. Lastly, NNSA has an effort to study how new technologies, in particular advanced manufacturing, can be used to accelerate the prototyping process

In early FY 2015, NNSA charged the Defense Programs Advisory Committee with analyzing how well current stockpile stewardship activities exercise and challenge the workforce throughout the entire nuclear weapons lifecycle to ensure critical skills were not being neglected. When finished, the Committee's report will be used to inform adjustments to future activities to include building prototypes.

Mr. COOPER. Following up on a previous question—a recent article revealed that classified information, including information related to uranium operations was dumped in the regular garbage at Y12 for 20 years. Is NNSA doing a damage assessment?

General KLOTZ. In conjunction with the recent issuance of the Preliminary Notice of Violation (PNOV), the Program Office (NA–10) is working with the Y–12 Field Office to review the need to conduct a damage assessment, taking into consideration all relevant information, to include the current circumstances of the material being maintained at a DOE controlled burial location. A document review is underway, and a fact-finding trip to Y–12 is planned, to speak with knowledgeable individuals first hand.

Mr. COOPER. What dismantlement work is planned in FY17 and why is this funding necessary?

General KLOTZ. The funding requested in the FY 2017 budget for dismantlements supports the President's goal to accelerate the dismantlement rate of previously retired weapons by 20 percent. NNSA will hire and train additional technical staff in FY 2017 to be ready to increase dismantlement rates starting in FY 2018. This will allow NNSA to dismantle the weapons retired prior to 2009 by the year 2021, rather than the original goal of 2022.

Mr. COOPER. What are the next steps and challenges on nonproliferation that NNSA is addressing? Are we laying the proper foundation to be ready to meet new

proliferation threats such as the expansion of nuclear know-how about the nuclear fuel cycle if nuclear energy spreads, or such as 3D printing?

General KLOTZ. The work of NNSA's Office of Defense Nuclear Nonproliferation (DNN)—supporting the "Nuclear Threat Reduction" pillar described in the NNSA Enterprise Strategic Vision—is carried out within the context of a dynamic global security environment, which is described in NNSA's annual report entitled Prevent, Counter, and Respond—A Strategic Plan to Reduce Global Nuclear Threats. This environment is characterized by the persistent vulnerability of nuclear and radiological materials (particularly in regions of conflict); the pressure on arms control and nonproliferation regimes from enduring interest in nuclear weapons capabilities by state- and non-state actors; the global expansion of nuclear power and possible spread of fuel cycle technology; the increasing opportunities for illicit nuclear material trafficking due to expanding global trade volumes and increasingly sophisticated procurement networks; and the rapid advance of technology (including cyber) that may shorten nuclear weapon development pathways and directly affect nuclear safeguards and security missions.

Of the many developments in the global nuclear security environment relevant to DNN's work, one of the most important is the possible proliferation risk associated with the expansion of civil nuclear energy. Ensuring that "nuclear newcomers" (i.e., states that do not currently have civil nuclear power programs and generally have little experience with managing nuclear technologies) are able to develop safety, security, safeguards, export controls, and emergency response systems to support their emerging nuclear energy programs will continue to be an important challenge.

DNN is helping to address this challenge through various efforts, including the development of assured fuel supply and spent fuel take-back strategies to discourage newcomer states from developing indigenous fuel-cycle capabilities. DNN is also engaging partners from day one to help them build the safety, security, safeguards, and export control capacity and infrastructure necessary to ensure safe and secure nuclear programs. Finally, DNN is launching an "over-the-horizon" strategic study focused specifically on the implications to DNN programs of future trends in the global nuclear fuel cycle, including the expansion of nuclear energy. The results of this study will help inform future programmatic activities.

Emerging technologies such as additive manufacturing represent another important development in the global security environment. On a regular basis, new technologies emerge that can significantly benefit our nuclear security enterprise but that also pose proliferation risks. NNSA is working within the Department and with other U.S. Government agencies to establish a systematic, coordinated approach to ensuring that the U.S. Government can reap the benefits of emerging technologies while mitigating associated proliferation risks.

Last year, NNSA established an Emerging Technologies Working Group (ETWG) as a formal mechanism to proactively identify, analyze, and respond to emerging technologies of concern. The group is co-chaired by DNN and the Office of Defense Programs, and includes participation from various offices Department-wide and the DOE complex. The ETWG began its work by considering the proliferation risks associated with additive manufacturing. As an immediate measure, the ETWG is developing classification guidance to help control this particular technology. The ETWG also is considering whether other policy guidance or export control regulations would be feasible and appropriate to apply as the technology develops.

In accordance with the requirement in Section 3139 of the FY 2016 National Defense Authorization Act, NNSA is also working with the U.S. interagency to develop the President's strategy to address additive manufacturing nonproliferation risks while balancing national security needs. NNSA will be briefing various congressional committees on the status of that strategy in the near future.

Mr. COOPER. Is NNSA considering the sterilization option (which might be a simpler option that would dispose of the pits at Pantex, and which the Red Team report chaired by Dr. Thomas Mason referenced), in addition to the dilute and disposal option for disposing of excess weapons-grade plutonium?

General KLOTZ. NNSA has announced that it will pursue the dilute and dispose option as it is a proven, demonstrated technology. Other options may be further evaluated as part of the NEPA process or the project management critical decision process, as deemed reasonable.

Mr. COOPER. Are you confident of the contents of the drums that will be going to the site? Are you confident that either drums that are at WIPP, either currently above ground or below ground would not cause the same accident?

Secretary REGALBUTO. The Office of Environmental Management is confident of the safety and the content of the transuranic (TRU) waste containers currently stored above-ground at the Waste Isolation Pilot Plant (WIPP). All waste emplaced at WIPP has been isolated in the disposal rooms, and separated from the environ-

ment and workers by steel bulkheads, in accordance with all applicable requirements.

Regarding future shipments to WIPP, including containers at the TRU waste generator sites awaiting shipment and TRU waste containers that will be shipped to WIPP in the future, our TRU waste program efforts will ensure there is no threat of a thermal reaction similar to the breached drum containing nitrate salt-bearing waste from the Los Alamos National Laboratory (LANL).

This confidence is based on rigorous changes made at WIPP which include: completion of corrective actions identified in response to the WIPP Accident Investigation Reports; enhancements to the WIPP safety envelope, the WIPP Safety Management Programs and safety basis; improvements to the oversight and assessments of the TRU waste program by WIPP management and operations contractor, the Carlsbad Field Office and DOE Headquarters; rigorous new requirements for the characterization of waste, chemical compatibility and waste container constituents; and improvements to the WIPP waste acceptance criteria. The inventory of LANL wastes remaining from the waste stream involved in the WIPP incident will be treated to ensure any risk is fully mitigated prior to shipment to WIPP.

Mr. COOPER. Why is the DNFSB important for nuclear safety and the nuclear enterprise?

Ms. CONNERY. The Board is the only agency that provides independent safety oversight of the Department of Energy's defense nuclear facilities, ensuring safe operations for the workforce and the public. These facilities and their operations are essential to our Nation's defense, performing work that includes: the assembly, disassembly, and surveillance of nuclear weapons; fabrication of plutonium pits and other weapon components; production and recycling of tritium; nuclear criticality experiments; subcritical experiments; and a host of activities that address the radioactive legacy resulting from 70 years of nuclear weapons operations. In operating the facilities that accomplish these missions, the Department of Energy functions predominantly as a self-regulating entity, responsible for managing cost and schedule as well as safety. The Board was established to provide a needed counterbalance to budgetary and schedule pressures and to serve as an extraordinarily expert technical advisor on matters of safety. The Board has assembled a technical staff of unparalleled capability that consistently identifies safety issues that eluded the Department of Energy and its contractors, enabling the Board to press DOE to correct problems and provide adequate protection to the workers and the public. Recent examples of the Board's contributions to safety include the Board's identification of the following major safety issues:

- Systemic problems in DOE's readiness to respond to emergencies at its sites which had persisted unaddressed despite the wakeup call of Fukushima Daiichi—The Secretary of Energy accepted the Board's recommendation and issued an implementation plan that commits to corrective actions including a complex-wide assessment of problems and a rewrite of DOE's governing directive, DOE Order 151.1C, Comprehensive Emergency Management System.
- Dysfunction of Los Alamos National Laboratory's criticality safety program, including the exodus of the laboratory's criticality safety staff—In response, the Laboratory Director paused all work involving fissile materials at the Los Alamos Plutonium Facility and initiated corrective actions including rebuilding the lab's criticality safety expertise, reevaluating the criticality safety evaluations for fissile material operations, and gradually reestablishing the lab's ability to safely perform fissile material operations through a comprehensive series of readiness assessments.
- DOE's failure to manage the upkeep of the software code RADCALC, which is used to determine the type of packaging needed for safe shipment of various radioactive materials—In response, DOE alerted users to suspend use of the noncompliant software, audited the responsible vendor and issued a stop work order based on the audit's results, and initiated an extent of condition review for similar software.
- Improper analysis and control of flammable gas hazards in the Defense Waste Processing Facility, which converts high-level radioactive wastes into glass in a high-temperature melter—In response, DOE instituted compensatory measures to place the facility in a safe condition, formed a dedicated team to resolve the safety issues, and began the development of a new flowsheet for the facility to address the hazard.
- Failure of the design strategy for Hanford's Waste Treatment Plant to properly prevent erosion and plugging of process piping that DOE plans to rely on for transfers of highly radioactive slurries for decades without maintenance—DOE plans to address this issue through systematic evaluation of hazards, reas-

sessing the pipeline design strategy, performing additional erosion testing, and establishing appropriate waste acceptance criteria for the facilities.

In addition to identifying safety issues of such magnitude, the Board also assists DOE in characterizing safety concerns and developing avenues for improvement. In the past year, for example, the Board provided an informational report to DOE that systematically evaluated the structures of aging facilities at the Y–12 National Security Complex, to assist DOE in making informed decisions regarding the potential to use those facilities for programmatic work for several more decades. Likewise, the Board provided a major report to DOE on opportunities to reduce the quantity of radioactive material-at-risk in the Los Alamos Plutonium Facility, to reduce the hazard posed by this facility to workers and the surrounding communities.

Without the expertise and needed external perspective provided by the Board, the Department of Energy would have a significantly reduced capacity to identify and resolve safety issues at its defense nuclear facilities.

QUESTIONS SUBMITTED BY MR. LARSEN

Mr. LARSEN. Do you expect a bow-wave in terms of costs for funding the life extension programs? How is NNSA preparing to handle 4–5 concurrent life-extension programs?

General KLOTZ. FY 2017 Future Years Nuclear Security Program (FYNSP) funding for life extension programs (LEPs) increases from $1.340 billion in FY 2017 to $1.919 billion in FY 2021, with significant increases occurring in FY 2018 (+$266 million) and FY 2021 (+$281 million). Beyond the FYNSP, the nominal cost of the LEPs, as reflected in Figure 4–33 of the FY 2017 Stockpile Stewardship and Management Plan (SSMP), plateaus, varying between $1.8 billion and $2 billion per year. Effectively, we will have climbed the "bow wave" during the FY 2017 FYNSP. However, it is important to note that only the W76–1 and B61–12 LEPs currently are baselined, and the W88 Alt 370, while baselined for its original scope, is being re-baselined to reflect the addition of the conventional high explosive refresh. The estimates for all other LEPs being performed over the next 25 years (W80–4, IW–1, IW–2, IW–3, and B61–13) are based on planning estimates as described in the FY 2017 SSMP, and their cost should be viewed as a cost range. These estimates are done in advance of the Phase 6.2/2A studies that will establish the specific scope for each LEP, so they are subject to change once those studies are completed. For the period FY 2022–2041 this cost range varies by about +/−$300 million per year around the nominal values described above. Regarding how NNSA is preparing to handle four to five concurrent life extension programs, the best preparation is advance planning for their execution. That's one of the reasons the SSMP is a 25-year plan that lays out our entire scope of activities and current plans for the LEPs. It should also be noted that while multiple LEPs may be ongoing at any particular point in time, some will be in Engineering Development where the preponderance of activities fall on the labs, while others will be in production which falls more heavily on the plants. We are already successfully executing three LEPs simultaneously.

Mr. LARSEN. What are the opportunities to expand R&D into technology to detect and better understand current and future proliferation threats?

General KLOTZ. The DNN R&D program makes strategic contributions to DOE's goal to reduce nuclear security threats through the innovation of unilateral and multi-lateral technical capabilities to detect and better understand: 1) foreign nuclear weapons program activities; 2) illicit diversion of special nuclear materials; and 3) global nuclear detonations. The program is emphasizing R&D that supports low-yield or evasive nuclear test monitoring, Big Data (such as data analytics and computation), and evaluation of emerging technologies (such as microfluidics and additive manufacturing) that have multiple commercial applications as well as proliferation threat potential in nuclear material production applications.

Mr. LARSEN. The FY16 NDAA mandated transferring certain NNSA facilities that qualified for transfer to the Department of Energy Environmental Management program within 3 years. What additional funding would the DOE need and can the EM program execute?

Secretary REGALBUTO. The Joint Explanatory Statement to the Consolidated Appropriations Act, 2016 (P.L. 114–113) states that "The Office of Environmental Management shall not accept ownership or responsibility for cleanup of any National Nuclear Security Administration facilities or sites without funding specifically designated for that purpose. The Department of Energy (DOE) is directed to identify all requests for transfers of facilities or projects from other DOE offices in its budget request justifications in future years." The Fiscal Year (FY) 2016 National Defense

Authorization Act (P.L. 114–92) requires that the Department develop a plan for the activities relating to the deactivation and decommissioning of nonoperational defense nuclear facilities.

DOE had already begun an effort to address excess contaminated facilities. In January 2015, the Secretary directed the establishment of an Excess Contaminated Facilities Working Group within the Department. The Working Group developed and executed an enterprise-wide data collection effort to obtain updated cost and risk assessments to deactivate, decontaminate, decommission, and demolish excess facilities. The Working Group is updating and validating data as a part of its efforts to develop policies to institutionalize a corporate approach to address issues associated with the transfer of National Nuclear Security Administration (NNSA) facilities to the Office of Environmental Management (EM). The Working Group also will be finalizing and issuing a report in 2016 as required by section 3133 of the FY 2016 NDAA.

Mr. LARSEN. Can you explain the decrease in funding in the FY17 President's Budget relative to the FY 16 enacted level and FY 16 PB level for Richland operations at Hanford?

Secretary REGALBUTO. EM establishes its cleanup priorities considering risk, compliance milestones and life-cycle cost considerations across the EM complex. The FY 2017 budget request reflects the progress in risk reduction at Richland and positions the Department to continue significant cleanup activities, which include the Plutonium Finishing Plant closure; a sustainable path toward addressing the contamination beneath the 324 Building; groundwater remediation; and K West Basin sludge removal.

Mr. LARSEN. The FY 16 NDAA required a report on the feasibility of using LEU in naval reactors. This research was supported with $5 million in the omnibus. Can you provide an update on the status of this study?

Admiral CALDWELL. The report on the feasibility of using LEU in naval reactors is currently in interagency review. Upon completion of the interagency review, Naval Reactors will formally sign out the report and provide it to the congressional defense committees.

QUESTIONS SUBMITTED BY MR. GARAMENDI

Mr. GARAMENDI. Does the dilute and dispose option entail any concern over criticality as the MOX contractor is arguing? And now that the Department of Energy has terminated the program, is it still worth doing a new funding baseline for MOX?

General KLOTZ. Sandia National Laboratory has reviewed the recent assertions of the risk of criticality issues at WIPP and concluded they are unfounded. According to Sandia, while burial at WIPP would increase the amount of weapon-grade plutonium several fold, criticality of down-blended and packaged Pu-239 cannot result. The assertion that Criticality Control Overpacks (CCO) would become crushed resulting in criticality is simplistic and not credible. The salt formation would squeeze the disposal rooms and waste, but this process cannot separate the Pu from the diluting materials to form an undiluted critical mass.

The FY 2016 NDAA requires the Department to submit a revised Performance Baseline. Therefore, the Department is in the process of updating the performance baseline.

Mr. GARAMENDI. How much work are you doing in FY17 or how much capability are you retaining specifically to support the Interoperable Warhead (IW1), which was deferred at least 5 years in 2015 into 2020 or beyond?

General KLOTZ. NNSA plans to restart the IW–1 Phase 6.2, Feasibility Study and Design Options, in FY 2020 to support an FY 2030 first production unit. NNSA is continually developing technologies to support a variety of options for future nuclear weapon alterations (Alts), modifications (Mods) and life extension programs (LEPs), including IW–1. As those technologies mature, individual weapon programs assume funding responsibilities to further develop those technologies to full maturity for program-specific applications. As the B61–12 LEP and W88 Alt 370 move to full scale production, NNSA will transition staff and other resources from those programs to the IW–1 program.

Mr. GARAMENDI. Does NNSA need to produce any pits to support the current and planned life extension programs?

General KLOTZ. There is no requirement to produce pits for the current life extension programs (W76–1, B61–12 and W80–4). NNSA may need to produce pits to support the first interoperable warhead (IW–1). NNSA remains committed to meeting the NWC requirements for plutonium pits and we are making progress on the fabrication of a development pit using existing materials. This will help exercise our

plutonium capabilities and critical skills and is a major step toward reaching pit manufacturing goals.

Mr. GARAMENDI. In terms of the funding profile, when does NNSA start seeing a bow-wave for funding the life extension programs?

General KLOTZ. Current funding in the FY 2017 Future Years Nuclear Security Program (FYNSP), specifically for life extension programs (LEPs), increases from $1.340 billion in FY 2017 to $1.919 billion in FY 2021, with significant increases occurring in FY 2018 (+$266 million) and FY 2021 (+$281 million). Beyond the FYNSP, the nominal cost of the LEPs, as reflected in Figure 4–33 of the FY 2017 SSMP, plateaus, varying between $1.8 billion and $2 billion per year. Effectively, we will have climbed the "bow wave" during the FY 2017 FYNSP.

It is important to note, however, that only the W76–1 and B61–12 LEPs currently are baselined, and the W88 Alt 370, while baselined for its original scope, is being re-baselined to reflect the addition of the conventional high explosive refresh. The estimates for all other LEPs being performed over the next 25 years (W80–4, IW–1, IW–2, IW–3, and B61–13) are based on planning estimates, as described in the FY 2017 SSMP, whose cost should be viewed as a cost range. These estimates are done in advance of the 6.2/2A studies that will establish the specific scope for each LEP and are subject to change once those studies are completed. For the period FY 2022–2041, this cost range varies by about +/−$300 million per year around the nominal values described above.

QUESTIONS SUBMITTED BY MR. BISHOP

Mr. BISHOP. This committee acted through the NDAA to ensure that it is better informed about the authorization for export of critical nuclear technologies. The February 25 deadline for the administration to notify to Congress a list of those technologies is almost upon us. Will the administration be in compliance?

General KLOTZ. The Department of Energy has prepared, in consultation with the Departments of State, Commerce, and Defense, the Nuclear Regulatory Commission, and the Director of National Intelligence, a list of technologies that should be protected from diversion to a military program in those countries that are considered a "covered foreign country" in Section 3136 of the FY 2016 NDAA.

In order to develop this list of technologies, the Department and the consulting agencies considered what possible contribution would be made to a nuclear weapon or naval propulsion program if such technology or assistance was diverted from a peaceful intent to a military program. The Department is finalizing this list and its submission to Congress and will be prepared to brief Congress on the results of our consultations.

The Department is also working to revise its 10 CFR Part 810 application review process to ensure that for any application that comes forward for a listed technology to a "covered foreign country," the appropriate notifications are made to Congress in accordance with the NDAA. Finally, the Department also is developing a process to ensure that the list of technologies remains up to date and addresses technological developments within the nuclear industry and the nuclear weapon and naval propulsion capabilities of the "covered foreign countries."

Mr. BISHOP. Maximizing U.S. influence on global nuclear safety, security and nonproliferation is a concern of this Committee, and we cannot achieve this goal without an effective and efficient nuclear export authorization process. What is the status of the DOE's Process Improvement Program for nuclear technology exports under Part 810?

General KLOTZ. In February 2015, the Department concluded a three-year comprehensive revision of its regulations at 10 CFR Part 810 (Part 810), governing the transfer of nuclear technology and assistance abroad and to foreign persons. The revised Part 810 regulation clarifies and streamlines the authorization process to reflect the pace of nuclear commerce, while continuing to address proliferation risks associated with nuclear technology transfer. DOE's National Nuclear Security Administration (NNSA) currently is implementing a Part 810 Process Improvement Plan (PIP) and e810 online authorization system to further improve and modernize the Part 810 application and U.S. interagency review process.

As a part of the PIP, NNSA has committed to make the Part 810 program compliant with ISO 9001, which includes a continuous improvement program. NNSA already has implemented a number of actions intended to improve and expedite the review process, including: a new docketing procedure; issuing specific authorizations conditional on subsequent receipt of foreign assurances; and developing a procedure to use Atomic Energy Act (AEA) Section 57b.1 for foreign assurances for China. This action will eliminate the need to secure government-to-government assurances for

specific transfers authorized under the U.S.-China 123 Agreement; instead, those transfers will be covered by the assurances of the 123 Agreement. This not only eliminates the most time-consuming element of securing a specific authorization, but places those technology transfers under the stronger nonproliferation assurances of the 123 Agreement. Other areas identified in the PIP that the Department continues to work on and will implement over the next weeks and months include: improving process and data management; reforming and publishing in the Federal Register a new U.S. interagency process for 810 reviews; revising internal DOE review procedures to reduce time in process; improving assistance to exporters with more on-line guidance and technical resources; more enforcement and compliance monitoring of Part 810 reporting by U.S. persons; and considering implementing a risk-based application review approach.

QUESTIONS SUBMITTED BY MR. WILSON

Mr. WILSON. In a memo dated November 20, 2015 from Secretary Moniz to the President, the Secretary says—in regards to the shifting of the disposition strategy—"So far, we have no read on MFA response. This issue will need further interagency work in the context of overall, complicated U.S.-Russia relations." Can you explain the current status of talks with the Russians of shifting our plutonium disposition strategy?

General KLOTZ. Consistent with the PMDA, the United States has been in contact with the Russian Government since 2013 to keep it apprised of the U.S. reviews of disposition methods. During July 2014 consultations in Moscow in PMDA channels, the Russian side advised that the two sides should re-engage in consultations after the United States had made a decision. In January of this year, a team apprised Russia of the Administration's decision to pursue another disposition method and, at an appropriate date, to pursue consultations as provided for in the PMDA.

Mr. WILSON. We have already spent $4.5 Billion on the MOX project. What is the Department's plan if Russia were to ask for concessions that the United States can not make in order to support a change in our disposition strategy?

General KLOTZ. The PMDA (paragraph 1 of Article III) clearly provides a path for the Parties to agree on methods of disposition that do not entail irradiation as fuel in reactors ("any other methods that may be agreed by the Parties in writing"). We will not speculate on what may or may not be Russian views in these consultations or on what legal form an agreement might take.

Mr. WILSON. What would the overall cost be to resurrect the MOX project if Russia is ultimately unwilling to allow a change in our disposition strategy?

General KLOTZ. While it is difficult to provide a definitive estimate, we expect it would take at least 1–2 years to ramp the project staff back up, which would add approximately $600–900 million to the total cost of the project. The projected $600–900 million increase to restart would be in addition to the overall lifecycle cost of the MOX approach estimated to be $30–50 billion.

Mr. WILSON. WIPP received less funding in the request for FY17 than it received in FY16. The Department of Energy has stressed its commitment to open the facility as quickly as possible, but how long after WIPP reopens will it be fully operational?

Secretary REGALBUTO. FY 2017 budget request provides funding to resume waste emplacement operations in December 2016, so long as it is safe to do so. The WIPP Recovery Plan identified that a replacement permanent ventilation system is required to support an increased rate of waste emplacement operations at WIPP. This will require two capital asset projects that are being implemented consistent with the Department's project management requirements. The design of these projects is not sufficiently mature to allow estimating when WIPP will achieve this increased rate of waste emplacement operations.

Mr. WILSON. In the budget request for 2017, the traditional "Savannah River Risk Management Operations" control point was separated into two new control points, "Environmental Cleanup" and "Nuclear Material Management"—causing considerable confusion. Can you explain the Department's rationale for this and were the site contractors notified of this change?

Secretary REGALBUTO. As a result of the interdependency of nuclear materials management and disposition activities at the Savannah River Site across multiple Department of Energy (DOE) missions, a new control point entitled "Nuclear Material Management" is being proposed for Fiscal Year (FY) 2017. Under this control point, planned work activities under the PBS 12, Spent Nuclear Fuel Stabilization and Disposition Program would be merged with PBS 11, Nuclear Material Stabilization and Disposition Program.

Accordingly, the scope and funding for the surveillance and maintenance of non-operating nuclear facilities (F-Area Complex Facilities as well as the Receiving Basin for Off-Site Fuels Facility), disposition of source term holdup within the F-Area Materials Storage Facility (235–F), and future deactivation of nuclear facilities currently operating at the Savannah River Site, which were previously included in PBS 11, would be placed into a new PBS entitled "Surveillance, Maintenance, and Deactivation." This new PBS would be placed under the "Environmental Cleanup" control point along with the Solid Waste Stabilization and Disposition and Soil and Water Remediation PBSs. Site contractors were notified of these proposed modifications when the FY 2017 President's Budget Request was released.