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HEARING
ON
NATIONAL DEFENSE AUTHORIZATION ACT
FOR FISCAL YEAR 2016
AND
OVERSIGHT OF PREVIOUSLY AUTHORIZED
PROGRAMS
BEFORE THE
COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED FOURTEENTH CONGRESS
FIRST SESSION
SUBCOMMITTEE ON STRATEGIC FORCES HEARING
ON
**FISCAL YEAR 2016 BUDGET REQUEST FOR
ATOMIC ENERGY DEFENSE**

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FISCAL YEAR 2016 BUDGET REQUEST FOR ATOMIC ENERGY DEFENSE

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON STRATEGIC FORCES,
Washington, DC, Tuesday, March 24, 2015.

The subcommittee met, pursuant to call, at 3:32 p.m., in room 2118, Rayburn House Office Building, Hon. Mike Rogers (chairman of the subcommittee) presiding.

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

Mr. ROGERS. Good afternoon. The Subcommittee on Strategic Forces will come to order. I want to welcome you to our hearing on the President's fiscal year 2016 budget request for atomic energy defense activities at 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 for putting that time and energy into this endeavor. I want to welcome our guests. We have Lieutenant General Frank Klotz, Administrator of National Security Administration—National Nuclear Security [NNSA], a little difference; Mark Whitney, Principal Deputy Assistant Secretary for Environmental Management [EM], U.S. Department of Energy; and Ms. Jessie Hill Roberson, Vice Chairman, Defense Nuclear Facilities Safety Board [DNFSB].

General Klotz, you have a few very able folks in support of you today and I want to recognize them: Dr. Don Cook, Ms. Anne Harrington, and Admiral John Richardson. If any of our members have questions directly for them later in the hearing, we will ensure that they can step up to the table and answer those as needed.

Before I hand the floor over to the ranking member, let me briefly highlight just a few key issues for today's hearing. First, let's be clear on the Nation's defense priorities. Last November, then-Secretary of Defense Chuck Hagel said this: "Our nuclear deterrent plays a critical role in assuring U.S. national security and it is DOD'S highest priority mission. No other capability we have is more important." This is the correct priority, but we must remember that fulfilling the nuclear deterrence mission is the shared responsibility of both DOD [Department of Defense] and DOE [Department of Energy]. It is the people, programs, and infrastructure at NNSA's nuclear enterprise that provides our Nation with that deterrent.

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. In the fiscal environment we are facing, we must prioritize the core mission of the agency while finding efficiencies that can be directly applied to that mission.

This is a strong budget request for NNSA, but I fear it may have only kicked the hardest choices over to Congress. And we must hear from our witnesses about how devastating sequestration, or Budget Control Act, funding levels would be on DOE's defense programs in both NNSA and Environmental Management. Allowing sequestration to hit us again in fiscal year 2016 would be like designing a nuclear hand grenade—just about the dumbest thing we could do.

Moving to governance and management of DOE and NNSA, we have received a report of the Mies/Augustine Advisory Panel, and I look forward to receiving General Klotz's response to that report. I agree with a lot of what the advisory panel recommended, but not all of it. General, I know there is much you and I agree on in this area as well. I hope to explore your thoughts on where we can work together to fix the longstanding problems related to governance and management. We have to get on top of these problems if the NNSA is going to be successful in the long-term. Leadership and accountability will be the key to this.

Let me end on a bright note. This year, the B61 life extension program continues to execute on time and on budget. General, please tell the whole NNSA team to keep up the good work. This is an important step in rebuilding trust and confidence with Congress and the American people and our allies.

Thank you again to our witnesses. I look forward to the discussion. With that, let me turn it over to my friend and colleague from Tennessee, the ranking member, Mr. Cooper, for any opening statement he may have.

[The prepared statement of Mr. Rogers can be found in the Appendix on page 23.]

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

Mr. COOPER. Thank you so much, Mr. Chairman. I, too, welcome the witnesses, and it is a pleasure to work with you on these issues of vital importance to our national security. As you noted, no weapons are more important or more dangerous than these, and we need to make sure that we are doing the best we possibly can to keep them safe, secure, and reliable. I look forward to the testimony of the witnesses.

Mr. ROGERS. Thank you. With that, we will ask each of our witnesses to make an opening statement, and your full statement will be submitted for the record. I would ask you to summarize it in 3 minutes. And without objection, we will accept those for the record.

The witness order will be first General Klotz, then Mr. Whitney, and then Ms. Roberson. So, General Klotz, you are recognized for 3 minutes to summarize your opening statement.

**STATEMENT OF LT GEN FRANK G. KLOTZ, USAF (RET.), ADMIN-
ISTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRA-
TION**

General KLOTZ. Chairman Rogers, Ranking Member Cooper, and members of the subcommittee, I thank you for the opportunity to present the President's fiscal year 2016 budget request for the Department of Energy's National Nuclear Security Administration. I am pleased to be joined by Mark Whitney and Vice Chairman Jessie Roberson, who you have already introduced.

We value this committee's leadership in national security as well as its robust and abiding support for the mission and the people of the NNSA. On a personal note, I have benefited enormously from the insight and guidance you have so generously and graciously shared over the past 12 months.

Our budget request, which comprises more than 40 percent of DOE's budget, is \$12.6 billion. This is an increase of \$1.2 billion, or 10.2 percent over the fiscal year 2015 enacted level. The funding is extraordinarily important to NNSA's missions to maintain a safe, secure, and effective nuclear weapon 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 protect American and allied interests around the world.

By supporting growth in each of our four appropriations accounts, this budget represents the commitment by the administration to NNSA's vital and enduring missions and to NNSA's role in ensuring a strong national defense. This mission is accomplished through the hard work and innovative spirit of a highly talented workforce committed to public service. To provide them the tools they need to carry out their complex and challenging tasks, 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.

For all of these missions, NNSA will continue to drive improvement in acquisition and project management practices and policies as well as Federal oversight over the enterprise. These missions are just a handful of the critical national security work that this budget funds; however, the looming possibility of sequestration is a major threat to NNSA's missions. In developing the budget, NNSA was directed to request the funds we need to accomplish the missions we have been tasked to do. The fiscal year 2016 budget request reflects this.

Another round of sequestration caps would most certainly have devastating impacts on important programs and projects, to include pushing them further out into the future or canceling them altogether. However you slice it, sequestration would adversely and severely affect our capabilities and our capacity to maintain a safe, secure, and effective nuclear weapons stockpile, and to reduce nuclear dangers both at home and abroad.

Mr. Chairman, Ranking Member Cooper, I look forward to discussing these and other issues with you in more detail during the question and answer.

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

Mr. ROGERS. Thank you, General.

Mr. Whitney, you are recognized for 3 minutes.

STATEMENT OF MARK WHITNEY, PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR ENVIRONMENTAL MANAGEMENT, U.S. DEPARTMENT OF ENERGY

Mr. WHITNEY. 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 positive program achievements to date and what we plan to accomplish under the President's fiscal year 2016 budget request.

Our request for \$5.818 billion will allow the EM program to continue to make safe cleanup of the environmental legacy a priority, a legacy that was brought about from five decades of nuclear weapons development and government-sponsored nuclear energy research. The request includes \$5.055 billion for defense environmental cleanup activities; an additional \$472 million for the defense contribution to the Uranium Enrichment Decontamination and Decommissioning Fund; a total of \$542 million for the Uranium Enrichment Decontamination and Decommissioning Fund cleanup activities; and \$220 million for non-defense environmental cleanup activities.

We continue to make significant cleanup progress. We have produced nearly 4,000 canisters of vitrified high-level waste at Savannah River Site in South Carolina, converting it to a solid glass form suitable for long-term storage or permanent disposal. This is about half the sludge in the Savannah River Site tanks.

At Hanford, we have completed the bulk of the river corridor cleanup project, including more than 500 facilities and 1,000 remediation sites.

The fiscal year 2016 budget request will allow us to continue to make significant progress in our ongoing cleanup priorities of liquid tank waste treatment, and recovery of the Waste Isolation Pilot Plant [WIPP]. For example, the Idaho National Laboratory, the request supports operations of the Integrative Waste Treatment Unit. It also covers and supports cleaning and grouting activities to support closing of the final four tanks there. It also supports high-level waste tank progress at the Savannah River Site, including producing 130 canisters of vitrified waste derived from tanks and processed through the Defense Waste Processing Facility.

The 2016 request will allow us to expedite tank waste treatment at the Office of River Protection in Hanford through the direct-feed low-activity waste approach, and this allows us to continue designing the low-activity waste treatment system, and continuing construction of the low-activity waste facility, the analytical laboratory, and balance of the facilities at the Waste Treatment Plant.

The 2016 request also provides funding in accordance with the Waste Isolation Pilot Plant recovery plan. There are many sites

around the EM complex, of course, that depend on the WIPP facility and that have transuranic waste at its plant for disposal.

So that resumption of operations at WIPP is a priority for us, and we will resume waste emplacement activities in 2016. The request also completes major facility clean-out and demolition projects, including the Plutonium Finishing Plant at Hanford.

In closing, I am honored to be here today representing the Office of Environmental Management. We are committed to achieving our mission, and will continue to apply innovative environmental clean-up strategies to complete work safely and efficiently, thereby demonstrating value to the American taxpayer.

Thank you, and I would be pleased to answer any questions that you may have.

[The prepared statement of Mr. Whitney can be found in the Appendix on page 40.]

Mr. ROGERS. Thank you, Mr. Whitney.

Ms. Roberson, you are recognized for 3 minutes to summarize your opening statement.

**STATEMENT OF JESSIE H. ROBERSON, VICE CHAIRMAN,
DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

Ms. ROBERSON. Thank you, Chairman Rogers and Ranking Member Cooper, and other members of the subcommittee. I am the Vice Chairman of the Defense Nuclear Facility Safety Board, and I would like to acknowledge the other two members sitting directly behind me, Mr. Sullivan and Mr. Santos.

Last year's radioactive release at the Waste Isolation Pilot Plant demonstrated the significant impact likely to result from a radiological incident at any DOE defense nuclear facility. Waste disposal operations have already been shut down for over 13 months. This has impacted cleanup activities across DOE's entire defense nuclear complex, and illustrates that even activities judged to be relatively low risk can still have major safety consequences and large impacts on DOE's ability to accomplish its mission when radioactive materials are involved.

The board is the only agency that provides independent safety oversight of DOE's defense nuclear facilities. The board's budget is devoted to maintaining and supporting an expert staff of engineers and scientists, nearly all of whom have advanced technical degrees, to support us in accomplishing our highly specialized work.

The President's budget request for fiscal year 2016 includes \$29.15 million in new budget authority for the board. It will support a planned staff of 125 personnel. This level of staffing is needed to provide sufficient independent safety oversight of DOE's defense nuclear complex, given the pace and scope of DOE's activities.

The board provides safety oversight of a multitude of operations critical to national defense. These operations include assembly and disassembly of nuclear weapons, fabrication of plutonium pits and weapons components, production and recycling of tritium, nuclear criticality experiments, sub-critical experiments, and a host of activities to address the radioactive legacy resulting from 70 years of nuclear weapons operations.

The board supports and closely oversees DOE and NNSA's efforts to develop new defense nuclear facilities that integrate safety into

their design at the very earliest stages. The delays in NNSA's programs to modernize its uranium and plutonium capabilities require the board to provide continued safety oversight of ongoing defense programs work, and aging nuclear facilities that do not meet modern safety standards.

Given the age and condition of many of DOE's defense nuclear facilities, the board is placing particular emphasis on emergency preparedness and accident response capabilities across the complex.

Let me add in closing that the board and DOE together have built a constructive working relationship. All board members, myself, Mr. Sullivan, and Mr. Santos, understand that a safe nuclear security enterprise is our priority.

That concludes my statement. Thank you.

[The prepared statement of Ms. Roberson can be found in the Appendix on page 50.]

Mr. ROGERS. I thank you. Thank you all for those opening statements. I will start with questioning now. I will recognize myself for the first round of questions.

General Klotz, you have a unique perspective to offer this committee on an issue we focused on for some time: governance and management at DOE and NNSA. As the first commander of the Air Force Global Strike Command, you were one of NNSA's primary customers for nuclear weapons work, and now as Administrator, you are in charge of the NNSA. Given your background and experience, I fear that if you can't fix these problems, nobody can.

And let me be clear. I firmly believe that getting NNSA's governance and management on track for the long-term must be one of your core duties.

You owe us a report right now on your views of the Mies/Augustine Advisory Panel's recommendations. As I said in my opening remarks, I agree with a lot of their recommendations, but certainly not all of them.

So tell me, what are your views that you can share with us today on what that report is going to tell us?

General KLOTZ. I thank you, Chairman. And let me say that I take your charge very seriously that the governance and management of NNSA is, indeed, one of our top priorities, as we move forward.

As far as the Augustine/Mies Panel is concerned, we have stated publicly that we appreciate the hard and long work that the members of the panel put in in giving some very thoughtful consideration to the issues that face NNSA and the entire nuclear security enterprise in terms of its governance and its management, and we appreciate the counsel that they have given in terms of their recommendation.

As we look across the broad 19 overarching recommendations, and 63 sub-recommendations, we find, like you, we are in agreement with most of them. And, in fact, many of the things that they have suggested, for instance, in the area of tightening up program management, instilling more rigor and discipline in project management, in cost estimation, in the relationship between NNSA and the military services and the relationship between NNSA and its laboratories and production plants across the country are things

that under Secretary Moniz's leadership and under the leadership team that is currently now in place at NNSA, we have been working very, very hard on.

So we take that as, to some extent, validation, justification for a number of things that we have already moved out very smartly on and are continuing to develop as we move forward.

So I look forward to finishing off the report. I expect some time in the next 3 to 4 weeks, we will be able to deliver it up here, and I look forward to the opportunity to discussing the specific comments that we have in greater detail with you and other members of the committee.

Mr. ROGERS. Great. Many of the Mies/Augustine recommendations align with similar efforts this committee has undertaken in the past: reducing transactional oversight, clarifying roles and responsibilities, and improving cost estimation and program management. And although we try to help, many of these problems are not fixable by Congress, but Congress can and will continue to provide guidance, direction, and momentum.

So, General, how can this committee help you address those issues?

General KLOTZ. Well, first of all, I think you have taken the first most important step, and that is to express your interest, your concern in the governance and management of the NNSA.

It is so very important for those individuals, those men and women who work within our enterprise, to know that the senior leadership of this government in both the executive branch and the legislative branch understand the importance of the enduring mission which those people perform and care about its safe and successful execution.

So, again, as we come forward with this report, we will have some specific comments on the recommendations in there that we can discuss with you in terms of the way ahead.

Mr. ROGERS. The third area I want to ask about is accountability. As a part of our effort to reform DOE and NNSA, we have spent a lot of time in this committee seeking accountability from major failures, the break-in at Y-12, the stunning failure of design and oversight with the UPF [Uranium Processing Facility] that wasted at least half a billion dollars of taxpayers' money, and the decades of wasted effort with CMRR [Chemistry and Metallurgy Research Replacement facility]. The list is long.

General, these failures were before your time as the Administrator, but are you aware that not a single Federal official was terminated after these disasters? Several retired and were moved to other jobs, but not one was fired.

So, General Klotz, can you assure this committee that you will hold Federal employees and contractors fully accountable for failures of this magnitude? This committee would like to see a message sent.

General KLOTZ. Yes, sir, we will. And I think one of the things that we have worked very hard on is to restore good order and discipline and a rigorous approach to both security and to program and project management in the past several months, and we are beginning to see some of the results of our effort in that way. And we will not shrink from holding either Federal officials or the man-

agement and operating [M&O] contractors accountable for their performance in both—when they do well, to recognize that and to congratulate them, as you already have in your opening statement. By the same token, when they fall short of our standards, to make sure that we communicate to them to that.

I think a review of the most recent cycle of fee determination shows that we will take tough action when what we expect from our people and our M&O contractors do not meet our expectations.

Mr. ROGERS. Great. I thank you. And I will now recognize the ranking member for any questions he may have.

Mr. COOPER. Thank you, Mr. Chairman. Continuing the chairman's theme, let us talk about the WIPP disaster. Hundreds of millions of dollars to remediate, a year or more of delays, ripple throughout the entire nuclear establishment. Who has been held accountable in the WIPP disaster?

Mr. WHITNEY. Thank you, Congressman Cooper. Yes, the—and as the general pointed out, you know, a lot of times the accountability is not as visible, sometimes it is very visible, but we are very focused on holding our folks accountable.

The general pointed out fee determinations. And I think you will see with one of the parties that was responsible for the WIPP incident, they were held accountable in that fee determination area.

We are very focused on recovering the operations and resuming operations of that facility. Sir, as you pointed out, it is critical to the cleanup program. We are making significant progress under fairly difficult circumstances. The team there at WIPP, both the Federal side and the contractors, have done significant amount of work, and we are focused on resuming operations in 2016.

Mr. COOPER. So some time in the calendar year of 2016 we will see a resumption?

Mr. WHITNEY. Yes, sir. We issued a recovery plan in September, September 30 of this past year, and it calls for us to resume operations by the end of the first quarter of calendar year 2016, and that is currently our plan. There are a few things that will be coming out fairly soon, and that is the Technical Assessment Team report on what exactly happened, looking at the drum where we had the incident, as well as the Accident Investigation Board final report. There will be corrective actions that will come out of that.

The Secretary has stated that our goal is the end of March 2016 for resuming operations, but we will only do so when we are confident that it is safe to do so. So we are focused on that, but we still have the end of March 2016 as our goal. Yes, sir.

Mr. COOPER. Well, that is the timeline. How much, though, is it estimated to cost?

Mr. WHITNEY. The cost, we don't know exactly how much the cost will be, because a lot of it will depend on the permanent ventilation system and exhaust shaft. We have begun to request that money, as you know. Right now the range for that project, because of the stage of the project, it is pre-Critical Decision 1, and so we are going through the alternatives analysis. As we further narrow the design down, we will get a better sense of the total cost, but right now, the range for that project is \$77 million to \$309 million. I think later this year we will have a better estimate of the cost of

that, of that project, and that will really be the large portion of WIPP recovery costs.

Mr. COOPER. And this will all be overseen by Ms. Roberson and the Defense Nuclear Safety Board?

Ms. ROBERSON. Yes, sir, Mr. Cooper. We are providing oversight to the project, and we too have looked at—I mean, we are just over 100 people, so we tend to prioritize, but we have placed additional emphasis on our oversight investment for this project.

Mr. COOPER. So back to Mr. Whitney. If the price tag is between \$70 million and \$300 million, how much is the contractor going to be held responsible for?

Mr. WHITNEY. The contractor also has a fee determination very soon, and so we will be looking at this, of course. There have been a couple of actions that we have already taken with respect to the contract and the fee called conditional payment of fee actions, which have reduced the amount that they are able to earn significantly. I believe within the next several weeks, the final fee determination will be made and made public.

Mr. COOPER. So, then, that will be publicly available, that information?

Mr. WHITNEY. Yes, sir.

Mr. COOPER. General Klotz, you seem to be doing a good job running an alphabet soup of an agency. There are many challenges, but as Chairman Rogers said, if anybody can do it, you are supposed to be the man. We appreciate when you bring in projects on time and under budget. That is great. I know you have a lot on your plate, both with life extension programs and with construction projects.

So we on this committee want to help you with the full range of your responsibilities, including your nonproliferation duties and the management of change that you made to include counterterrorism in that, that you are assured that that will give us better ability to deter anyone who might be thinking of a nuclear incident in this country and better opportunity to not only prevent that from happening, but to identify the wrongdoers and take prompt action to protect the American people.

General KLOTZ. Yes, sir. The change that we made was, in a sense, how we view the problem of dealing with nuclear proliferation and nuclear terrorism, both at home and abroad in a very, very general sense.

You mentioned alphabet soup. Up until we made this change, we had a lot of different programs that were created in the aftermath of the fall of the Soviet Union, and the work that we did there under the Nunn-Lugar initiatives and other Cooperative Threat Reduction activities. And a couple of years ago, Ms. Harrington, who is sitting behind me, started an over-the-horizon look at positioning our efforts in this area for the longer term to deal with an increasingly complex and increasingly dangerous world.

Our thought in approaching this is that we should think of this issue from start to finish, from cradle to grave as a continuum of activities that run from protect against the spread of special nuclear materials that would fall in the hands of would be proliferators and terrorists; and then if that fails, be able to

counter that, and then if that fails, be able to respond to any nuclear radiological incident.

So it is a continuum of activities. In fact, just yesterday we released the first-ever comprehensive report on the full range of activities that fall within this particular mission space. So we see that as a compendium, as a companion volume to the Stockpile Stewardship and Management Plan, which we produced for some number of years now that describes in detail what we do in the area of weapons activities.

Mr. COOPER. May I suggest that your duties in this regard are the single-most important function of government, and the only thing the public will care about if there were to be a nuclear incident. And I think most of the so-called experts predicted that there would be one within 10 years of 9/11, and thank God that hasn't happened, but as the clock ticks, we have to be increasingly vigilant. So we need to make sure that you are doing everything possible, and that we are doing everything possible to make sure this never happens in this country.

If you need anything, anything, call on us. And I know that all of your budget categories are going up, at least if the President's request is adhered to. And I could not agree with you more that we need to get rid of sequestration, but this has got to be job one for the country.

I see that Admiral Richardson is behind you. I don't want to stop my questioning without noting that Naval Reactors over many years seems to have done an exceptional job of keeping up with its duties, so I hope that your fine example will spread. If you do have dirty laundry, at least you have kept it more hid than the other services. I hope it is just a lack of dirty laundry. But, you know, the tradition that Naval Reactors seems to have had is a truly remarkable one, so I hope you can continue that.

I have no more questions at this time, Mr. Chairman.

Mr. ROGERS. Thank the ranking member. Chair now recognizes the gentleman from Oklahoma, Mr. Bridenstine, for 5 minutes.

Mr. BRIDENSTINE. Thank you, Mr. Chairman. And thank you for the distinguished panel being here today and testifying.

General, I think it was last year we got a report from Secretary of Defense Hagel indicating that our requirements for our nuclear capacity was 50 to 80 plutonium pits per year. Is that still the requirement?

General KLOTZ. That is the objective which we are working for as part of a comprehensive plutonium strategy.

Many, many years ago, when we had the facility at Rocky Flats in California, we had the ability to produce thousands of nuclear weapon pits each year. Of course, that was at the height of the Cold War, when our stockpile was much, much larger than it is today. That facility was shut down. We moved—or tried to demonstrate the ability to develop pits, manufacture pits, fabricate pits at Los Alamos National Laboratory in New Mexico. And we are going through a sustained process of recreating the ability to produce a smaller number of pits per year, ultimately up to 50 to 80 per year, in order to support life extension programs that we see coming in the 2020 to 2030 timeframe as we move there.

Mr. BRIDENSTINE. So is the administration's policy 50 to 80 pits?

General KLOTZ. That is what the Department of Defense and the Department of Energy have agreed to, the Nuclear Weapons Council, which passes judgment on these issues.

Mr. BRIDENSTINE. In the fiscal year 2015 NDAA [National Defense Authorization Act] signed by the President, section 3112 included a sense of Congress that “Timelines for creating certain capacities for production of plutonium pits and other nuclear weapons components must be driven by the requirements to hedge against technical and geopolitical risk, and not solely by the needs of life extension programs.”

Do you agree with that?

General KLOTZ. I agree with that.

Mr. BRIDENSTINE. The administration has, since 2010, the 2010 Nuclear Posture Review, articulated a policy that it wants to develop a “responsive nuclear infrastructure.”

Can you share with us what that means?

General KLOTZ. Well, in fact, sir, what we were just talking about is a good example of a responsive infrastructure. If you have the capability to fabricate pits, if you have the capability to fabricate other nuclear and non-nuclear components in a modern, efficient, and agile production system, then you can adjust what your requirements are to deal with any technical challenges that may arise through the aging of a particular warhead, or any significant changes in the political military environment.

Mr. BRIDENSTINE. Do you believe we currently have a responsive nuclear posture?

General KLOTZ. We are pretty agile and we are pretty flexible, but we could be certainly more so.

Mr. BRIDENSTINE. The life extension program for the W80 nuclear warhead for the long-range standoff [LRSO] cruise missile is accelerated by 2 years in this year’s budget request, which is a good thing. It now aligns with NNSA’s program with the statutory requirement in the fiscal year 2015 NDAA that you produce the first warhead in this program by 2025. Where does the W80 warhead and the larger LRSO missile rank in the Nuclear Weapons Council’s priority list?

General KLOTZ. It is right up there. It is one of the life extension programs we are going with. I wouldn’t rank it any higher or any lower. It is a top priority.

Mr. BRIDENSTINE. Will it happen in fiscal year 2015? I guess, will you commit that in fiscal year 2015, fiscal year 2016 we will see movements for the next steps in this program?

General KLOTZ. We have already had some fairly significant movements in the W80, we call it the W80–4 life extension program [LEP], which will be the warhead that the Nuclear Weapons Council agreed would be the one we would field with the Air Force’s long-range standoff capability. We are moving towards—

Dr. Cook. 6.2 on July 1.

General KLOTZ. So later this year we will take the next step in that process. So this is something which we take very, very seriously.

Mr. BRIDENSTINE. What would be the impact if Congress significantly cut this program or canceled it altogether?

General KLOTZ. Well, that is a very good question, and thank you for asking it. I think it goes without saying that any significant cuts to this particular program, or a general sequestration across the board would adversely affect all of our programs in one way or the other.

Now, whether it would—if you had a general cut, we would have to engage in discussions with Department of Defense. As the chairman said in his opening statement, they essentially, you know, are the customers for what we deliver in the way of a warhead, so we would want to make sure that we were synced up with whatever adjustment they had to make for delivery systems. It would not make sense for us to deliver a warhead if there wasn't a delivery system ready for it and vice versa. So that would be something that we would have to work out collaboratively through the Nuclear Weapons Council process.

Mr. BRIDENSTINE. Well, let's hope that doesn't happen.

I will yield back.

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

Mr. GARAMENDI. Thank you, Mr. Chairman. And, gentlemen, thank you for your work.

Just to continue following up on the previous questions, it looks like we are somewhere north of \$17 billion for the W80-4 nuclear warhead LEP program, and the cruise missile that goes with it. You have accelerated this discussion by, I think, an incomplete answer. Why was the 2-year acceleration required?

General KLOTZ. The acceleration, moving it up 2 years from 2027 to 2025 for the first production unit was taken largely at the request of the Department of Defense, U.S. Strategic Command, and the Air Force for an early delivery of the capability which the long-range standoff system represents.

As Admiral Haney, the commander of U.S. Strategic Command, has said in open testimony, basically it reflects two concerns: One is the increasing sophistication of air defenses around the world; and the second is some concerns about the aging of the missile, that is the current air-launched cruise missile.

So they felt it was prudent from a military requirements point of view to move that up. And we support them on that. And, in fact, perhaps more detail than is needed, but it actually fits in very, very nicely with our work schedule and it will allow us to have sort of a smoother approach to how we do the life extension programs over an extended period of time.

Mr. GARAMENDI. Okay. Not okay, but thank you for the information. We were talking about responsive infrastructure before, 50 to 80 pits required. And at what cost? The infrastructure; not for the pits, but for the infrastructure?

General KLOTZ. I would have to get you—I could take that and get you the full cost of the plutonium strategy out through all the years. For the coming year, what we are asking for us in fiscal year 2015, Congress enacted 335—I am sorry, 35.7 for the plutonium strategy and replacement of the chemical, metallurgical laboratory at Los Alamos. That is going up to 1.55 as our budget request for 2016. As we continue to—

Mr. GARAMENDI. With a B?

General KLOTZ. I am sorry?

Mr. GARAMENDI. \$1.55 billion?

General KLOTZ. Million.

Mr. GARAMENDI. Million. Okay. And that is the next investment on, we don't know the—you don't have the total cost of the facility?

General KLOTZ. We do have. We can get you that number. I don't have it.

Mr. GARAMENDI. You don't have it with you.

General KLOTZ. If I could carry numbers around in my head, I would have stayed a math major instead of becoming a poli sci major.

Mr. GARAMENDI. Well, I am pleased that you chose the career you have. The 50 to 80 pits is to actually produce that number of pits?

General KLOTZ. It is to show the capacity to produce that number of pits, is what—as we understand——

Mr. GARAMENDI. The assumption is at some point we would need to produce at least 50 to 80 pits?

General KLOTZ. That is the assumption, yes, sir.

Mr. GARAMENDI. And it is based on what assumption? What is the——

General KLOTZ. The assumption it is based on as we move into a life extension program that would affect the W78, which is a warhead used on the U.S. Air Force's intercontinental ballistic missile and would also be our first interoperable warhead [IW], that we would need to be able to produce pits for that.

Mr. GARAMENDI. What do you mean "interoperable"?

General KLOTZ. Perhaps maybe I will let Dr. Cook describe this since he came here and we have an open mike for him.

Mr. COOK. Happy to do that. By "interoperable," which is part of the three-plus-two strategy, it is an agreed Nuclear Weapon Council strategy to move eventually to three interoperable ballistic missile systems. That brings down, in the long haul, some of the technical hedge that we carry to provide a backup against technical failure for what we have, and more importantly, as weapons age. Specifically, it means the ability to have a common nuclear explosive package fit into each of the large air shells, one for the Air Force, which is the Mark 21; one for the Navy, which is the Mark 5, to do the adjustment and all of the balancing required for flight characteristics with the non-nuclear components. And we pursued this year after year. It is well beyond the stage of conceptual.

Within the last 12 months, we believe that we have proven, to the best extent on paper that this is possible, and now we will begin maturing the technologies in order to resume the schedule. As the Administrator said, there was a 5-year delay in IW-1, in other testimony, and some money is shown in the fiscal 2020 year budget to resume that work.

Mr. GARAMENDI. I am out of time, Mr. Chairman, but I want to get into that in much more detail.

Mr. ROGERS. Okay. We will have another round.

Mr. GARAMENDI. And I will come back. Thank you.

Mr. FRELINGHUYSEN. Chair now recognizes the gentleman from Colorado, Mr. Lamborn, for 5 minutes.

Mr. LAMBORN. Thank you, Mr. Chairman. Thank all for being here. Thank you for your service to our country. And I am just going to jump right in, General Klotz. You have talked about the responsive infrastructure and you have been asked about that. Isn't that lacking, because there is a key uranium facility and a key plutonium facility that need to be planned and built, and we are not doing that?

General KLOTZ. We could take—we are working on both of those, and we can take them separately. On the plutonium side, as I indicated earlier in an earlier response, we had the capability at one time at Rocky Flats in Colorado to produce literally thousands of pits per year for a much larger stockpile than we now have. We no longer have that kind of capacity, and we foresee a need in the future for being able to produce a greater number of pits than we can do on basically a handful a year now at Los Alamos. So we are building up that capability.

What has changed from the past is, at one time we were looking at constructing one large facility to replace an aging facility where we did analytical chemistry and material characterization related to plutonium at Los Alamos, and now we have adopted a more modular approach, re-purposing some existing facilities, moving equipment around, and beginning the process of design for some external modules, which will allow us to increase the capacity of space that we have. So that is underway. We have got money in the budget, we have an ask and a request for that.

Mr. LAMBORN. How far away is that from being done?

General KLOTZ. What is the expectation?

Mr. COOK. You are looking at—the expectation for the plutonium is to have most of the capabilities in for the first part of the strategy by 2020, and for the second part by about 2025. We will execute a buildup, in a rational way for capability at 10, 20, and 30 pits per annum and 24, 25, and 26. We will achieve the capability with plutonium and demonstrate at the 50 to 80 level in 2030 that capability.

Mr. LAMBORN. Well, I am very concerned, because this and the uranium facility were part of what was promised by the administration to get the Senate to ratify the New START [Strategic Arms Reduction] Treaty. And when I see that elements of this are 15 years away, up to 15 years away, I am just really concerned that the administration hasn't been keeping its end of the bargain. That is, frankly, what my concern is.

General KLOTZ. If I could shift to uranium, since you asked about that, our principal facility for doing that is the Y-12 facility in Oak Ridge, Tennessee, and there we do have the capacity to conduct uranium operations. Our concern, however, is if much of the work is done in a facility, we call it 9212, which is decades old, is really showing signs of wear and tear, and we are concerned obviously about the safety not only of our operations there, but more importantly, the people, the employees.

Mr. LAMBORN. And how far away is that from being—

General KLOTZ. Again, we have changed our approach from doing a big-box approach where you put everything into one box, and, therefore, every square foot costs as much as the most expensive requirement driven by security and safety, to having a distributed,

segregated approach where we segregate activities by hazard and security category.

Mr. LAMBORN. Okay. Lastly, I want to address Admiral Richardson. If you could come up to the empty mike, that would be great. And by the way, I know the chairman recently led a congressional delegation [CODEL] to Idaho, and you were there and hosted us at the Naval Reactors. General Klotz, you were there, and I really appreciate that. I think we all got a lot out of that.

And since that visit, I have gone to a local firm in my district, Cogitic. A couple of brothers are getting a business. It is amazingly capable in producing parts for nuclear submarines, like the valves, the ball valves and things like that. So it is just amazing all that goes into the nuclear enterprise from start to finish. But real quick—oh, gosh. I have run out of time.

Mr. ROGERS. Go ahead.

Mr. LAMBORN. Okay. I will just ask this question. And thank you, Mr. Chairman, I have to run to the floor on what they are discussing right now, but my question is this: On low-enriched uranium, there are some who talk about, well, that can be used as a substitute for highly enriched uranium. Is there really any promising future to a military capability for low-enriched uranium?

Admiral RICHARDSON. Sir, thank you very much for your kind words and thank you for the question. We do produce a report to Congress about the feasibility of using low-enriched uranium. I have a copy of that report here which I submitted in January of 2014. And with the current state of technology right now, if we were to substitute low-enriched uranium, it would only be even technically considered for an aircraft carrier application.

And, because of the reduced energy in the low-enriched uranium, with the current technology, we would introduce another refueling event in the life of that carrier. That refueling event would come at a cost of about a billion dollars and would remove that carrier from being at sea while it comes into the shipyard to do that refueling operation as well.

We have done some recent exploratory work, and, you know, the potential exists that we could develop an advanced fuel system that might increase uranium loading and make low-enriched uranium possible while still meeting, you know, some very rigorous performance requirements for naval reactors on nuclear-powered warships. By no means is success assured by that.

Mr. LAMBORN. Admiral, I am going to have to run, but—

Admiral RICHARDSON. All right.

Mr. LAMBORN [continuing]. Do you see a current military benefit to using low-enriched uranium today?

Admiral RICHARDSON. From a pure military standpoint, no, sir.

Mr. LAMBORN. Okay. Thank you very much. Thank you all for being here and for your service.

Mr. ROGERS. I thank the gentleman.

Now let's talk about NNSA on deferred maintenance. I and several other members of this subcommittee have had the opportunity to visit Y-12, the labs, the Naval Reactors facility in Idaho with you, General Klotz and Admiral Richardson, and other parts of the NNSA enterprise.

At each stop, I ask for the ugly tour to see some of the massive backlog of deferred maintenance at all of these decrepit facilities, and we saw a lot of ugly. I am putting some slides up on the monitors of the recent roof collapse at the lithium facility at Y-12. A huge chunk of concrete fell into an operational work area. We are lucky no one was hurt or killed. We have also got some pictures from Pantex, which has many areas in equally as bad shape.

Because all of these places are inside secure facilities, I don't think the American people are aware of just how bad these buildings have gotten. We have got weeds growing up out the floors of work areas at Pantex; \$14 million diagnostic equipment covered with tarps because of the lab roof leaks; duct tape, which I like duct tape, don't get me wrong, duct tape and plastic around pipes carrying radioactive solutions.

General, you and Secretary Moniz have sought to arrest the growth of the deferred maintenance backlog at NNSA. That is laudable, and I know you will have this committee's full support, but you haven't requested enough money to actually reduce the backlog. What more could you be doing if provided additional funding?

General KLOTZ. Well, thank you, Mr. Chairman. And thank you for you and the committee's leadership on this issue. You are absolutely right. We face a tremendous challenge. More than 40 percent of NNSA's facilities—more than half of NNSA's facilities are over 40 years old. Thirty percent of them date back to the Manhattan Project, that's World War II. And our deferred maintenance figures have risen to nearly \$3.7 billion, and without arresting that, would continue to grow.

You rightly pointed out that Secretary Moniz has declared that we will arrest the rise of deferred maintenance across the entire DOE enterprise, not just at NNSA.

We do have some success stories in the past couple of years. This past year, 2014, we moved into a brand-new facility at Kansas City, moving out of a World War II-era factory, aircraft engine factory, into a brand-new state-of-the-art facility, which we attained through a lease with the General Services Administration, GSA, with a private developer. In the process, we have reduced our footprint from roughly 3 million square feet to half that, and reduced our operating costs by \$100 million a year.

And in Pantex, we have completed construction, along with the help of U.S. Army Corps of Engineers, of a High Explosives Pressing Facility and begun the process of certifying. So we are making inroads.

But what I have observed, both in the NNSA and in my previous career in the Air Force, is, when dollars are constrained, the first dollar goes to the pointy edge of the spear, or goes to the mission program; the next dollar goes for the next mission of priority. And it is only after you have been able to expense those particular requirements do we pay attention to the infrastructure.

Well, quite frankly, we have deferred that too long and the bill has come due, and we need to take some extraordinary measures: One, to fund these, but also to think of new and creative ways in which we can deliver facilities for our people to work in.

Mr. ROGERS. Do you, offhand, have a total number it would take to remedy these deferred maintenance issues?

General KLOTZ. Well, right now our backlog right now is \$3.7 billion to do maintenance. Now, we continue to chip away at that, and I think we are getting smarter, or at least more analytical in our approach. We have adopted two processes recently, which the Department of Defense uses to grade the condition of its facilities and to set the priorities, and I think that rigor and discipline will help us refine those numbers even more so.

Mr. ROGERS. Great. All right, General. You owe us a plan for two or more public-private partnerships you wish to pursue to get workers out of old, dilapidated buildings and into modern facilities. Do you see these kind of alternative finance agreements as beneficial to your efforts to get out of these old facilities faster?

General KLOTZ. We do. And as I said, we have had several successes. Two facilities, at Y-12, at Oak Ridge were built in that way. The Kansas City plant has been built in that way. And we will be bringing some additional ideas to you of ways in which we can get people out of facilities, particularly the one at Pantex, into modern, more efficient buildings.

This is important not only for conduct of operations, it is also extraordinarily important, in my view, for the recruitment and retention of the highest caliber people out of our technical schools and out of our graduate schools, because given the opportunity to go work in a facility which would use their scientific, technical, and engineering skills that is brand-new and modern, like many high tech firms are able to offer, or something that is, as you described it, dilapidated, it is a tough sell for recruiting and retaining people into this enterprise.

Mr. ROGERS. Yeah. I have been to those facilities, and I have shared this with you and I will share with the panel and the guests here. These people that we have working are very well-educated. They have options. And, first of all, I am amazed that we are able to—and it says a lot about their patriotism, and their belief in how important their work is that they suffer these intolerable conditions. When you see somebody with these educational credentials working in some of the circumstances we just put up on the board, it is just—it is indefensible.

Ms. Roberson, I will talk to you about deferred maintenance.

Ms. ROBERSON. Yes, sir.

Mr. ROGERS. What are the safety impacts of NNSA's deteriorating infrastructure and the \$3.6 billion backlog of deterred maintenance you just heard General Klotz reference? And is all of this decrepit infrastructure becoming a safety hazard?

Ms. ROBERSON. Mr. Chairman, the consequences are, as I stated in my opening statement, the questionable reliability of safety controls and the health of your safety management programs. So we have really been focusing our oversight, both for NNSA and EM, because EM also has aging facilities too, really focusing on the reliability of their safety controls, the health of their safety management programs, criticality safety, radiological safety, fire protection, and also on emergency management, which, at the end of the day, must really be healthy to ensure you can respond to anything before it becomes something more than a small incident.

Mr. ROGERS. What is your view of NNSA's plan to remain in these facilities for decades to come?

Ms. ROBERSON. Well, we think that newer facilities that meet modern safety standards would be important, I think the board's been consistent in saying that in the recent years. We also think that Environmental Management should continue to get out of facilities that are decrepit, you know, undo them before they undo themselves. And so I think the board has been consistent in staying supportive of NNSA's efforts to, you know, establish, whether it is big box or modular, whatever they choose, but to establish infrastructure for the workers and to ensure protection of the public that meet modern safety standards.

Mr. ROGERS. Has DNSFB provided NNSA with a prioritized list of the safety concerns that you have about these facilities?

Ms. ROBERSON. I don't know if we have provided them a prioritized list. We certainly give them lists. We have the opportunity to discuss the things that we are seeing that we think are a high priority from a safety perspective on a routine basis.

Mr. ROGERS. Great. Thank you.

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

Mr. COOPER. Thank you, Mr. Chairman. I will just withhold until the classified session.

Mr. ROGERS. Okay. With that, we have just got a couple of items we need to discuss for the record in classified, secure session with General Klotz. So with that, we will recess this for about 5 minutes to walk to the SCIF [Sensitive Compartmented Information Facility], and then we will reconvene.

[Whereupon, at 4:32 p.m., the committee proceeded in closed session.]

A P P E N D I X

MARCH 24, 2015

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MARCH 24, 2015

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

Hearing on the “Fiscal Year 2016 Budget Request for Atomic Energy Defense”

March 24, 2015

Good afternoon. The subcommittee will come to order.

Welcome to our hearing on the President’s Fiscal Year 2016 budget request for Atomic Energy Defense Activities at the Department of Energy.

I want to thank our witnesses for being here today. Our distinguished witnesses are:

- **Lieutenant General Frank Klotz (USAF, ret.)**
Administrator
National Nuclear Security Administration
- **Mr. Mark Whitney**
Principal Deputy Assistant Secretary for Environmental Management
Department of Energy
- **Ms. Jessie Hill Roberson**
Vice Chairman
Defense Nuclear Facilities Safety Board

General Klotz, you have a few very able folks in support of you today that I also want to recognize: Dr. Don Cook, Ms. Anne Harrington, and Admiral John Richardson. If any of our Members have questions directly for them later in the hearing, we’ll ensure they can step up to the table to answer as needed.

I appreciate you all taking the time to prepare for this hearing, we greatly appreciate it.

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

First, let’s be clear on our nation’s defense priorities. Last November, then-Secretary of Defense Chuck Hagel said:

“Our nuclear deterrent plays a critical role in assuring U.S. national security, and it is DOD’s highest priority mission. No other capability we have is more important.”

This is the correct priority, but we must remember that fulfilling the nuclear deterrence mission is the shared responsibility of both DOD and DOE. It is the people, programs, and infrastructure in NNSA’s nuclear enterprise that provides our nation with that deterrent. 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.

In the fiscal environment we are facing, we must prioritize the core mission of this agency while finding efficiencies that can be directly applied to the mission. This is a strong budget request for NNSA, but I fear it may have only kicked the hardest choices over to Congress.

And we must hear from our witnesses about how devastating sequestration or Budget Control Act funding levels would be on DOE's defense programs in both NNSA and Environmental Management. Allowing sequestration to hit us again in FY16 would be like designing a nuclear hand grenade—just about the dumbest thing we could do.

Moving to governance and management at DOE and NNSA: we have received the report of the Mies-Augustine advisory panel and look forward to receiving General Klotz's response to it. I agree with a lot of what the advisory panel recommended—but not all of it. General, I think there is much you and I agree on in this area as well. I hope to explore your thoughts on where we can work together to fix the longstanding problems related to governance and management.

We have to get on top of these problems if NNSA is going to be successful in the long term. Leadership and accountability will be the keys to this.

Let me end on a bright note again this year: the B61 Life Extension Program continues to execute on time and on budget. General, please tell the whole NNSA team to keep up the good work. This is an important first step in rebuilding trust and confidence with Congress, the American people, and our allies.

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.

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Statement of Lt. Gen. Frank G. Klotz, USAF (Ret)
Administrator
National Nuclear Security Administration
U.S. Department of Energy
on the
Fiscal Year 2016 President's Budget Request
Before the
Subcommittee on Strategic Forces
House Committee on Armed Services

March 24, 2015

Chairman Rogers, Ranking Member Cooper, and Members of the Subcommittee, thank you for the opportunity to present the President's Fiscal Year (FY) 2016 Budget Request for the Department of Energy's (DOE) National Nuclear Security Administration (NNSA). We value this Committee's leadership in national security, as well as its strong and abiding support for the mission and people of the NNSA.

The President's FY 2016 Budget Request for NNSA, which comprises more than 40% of the DOE's budget, is \$12.6 billion, up \$1.2 billion or 10.2% over the FY 2015 enacted level. The NNSA has a unique and special responsibility for maintaining a safe, secure, and effective nuclear weapons stockpile for as long as nuclear weapons exist; preventing, countering and responding to evolving and emerging threats of nuclear proliferation and terrorism; and, supporting the capability of our nuclear-powered Navy to project power and protect American and Allied interests around the world. By supporting growth in each of our four appropriations accounts, this budget request represents a strong endorsement of NNSA's vital and enduring mission, and is indicative of the Administration's unwavering commitment to a strong national defense.

The NNSA's mission is accomplished through the hard work and innovative spirit of a highly talented workforce committed to public service. To provide them 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 NNSA took several significant steps toward this objective during the past year.

NNSA's FY 2016 Budget Request reflects the close working partnership between NNSA and the Department of Defense (DoD) in providing for our Nation's nuclear deterrence capabilities and modernizing the nuclear security enterprise. As in last year's Budget, DoD is carrying a separate account in its FY 2016 Budget Request for the out years, FY 2017 and beyond, which identifies funds for NNSA's Weapons Activities and Naval Reactors. We urge this Subcommittee's support for alignment of its appropriations process and national defense or "050" allocations, including

the subcommittee 302(b) allocations, with the President's Budget. The requested allocation supports NNSA and DoD priorities.

Tough decisions and trades in FY 2016 have been made to meet military commitments and nuclear security priorities. If the request is not fully supported, modernization of our nuclear enterprise and implementation of our long-term stockpile sustainment strategy could be put at risk. The program we have proposed is highly integrated and interdependent across the stockpile management, science and infrastructure accounts.

Apart from the need for national defense allocation alignment, the looming possibility of sequestration is a major threat to all NNSA missions. The NNSA FY 2016 Budget Request exceeds the caps set on national security spending in the Budget Control Act (BCA); but is necessary to meet our national security commitments. Reduced funding levels will place these commitments at risk. We have made some tough resource decisions across the NNSA, but the Secretary of Energy and I believe that our enduring missions are too vital to the Nation's security to be further constrained by the current BCA spending caps.

Details of the FY 2016 President's Budget Request for the NNSA follow:

Weapons Activities Appropriation

The FY 2016 Budget Request for the Weapons Activities account is \$8.8 billion, an increase of \$666.6 million or 8.1% over FY 2015 enacted levels. It is comprised not only of the Defense Programs portfolio, which is responsible for all aspects of stockpile stewardship and management; but also the enterprise-wide infrastructure sustainment activities managed by our Office of Safety, Infrastructure and Operations, as well as our physical and cybersecurity activities. It should be noted that in this budget request we have moved NNSA's on-going emergency response and counterterrorism and counterproliferation capabilities out of the Weapons Activities account and into the Defense Nuclear Nonproliferation account. This action aligns activities for preventing, countering and responding to global nuclear threats into a single account.

Maintaining the Stockpile

Last year, we again successfully used science-based stockpile stewardship to certify to the President that the American nuclear weapons stockpile remains safe, secure, and effective--without the need for underground nuclear testing. It is important to periodically remind ourselves that we have been able to do this every year largely due to the investments we have made and continue to make in state-of-the-art diagnostic tools, high performance computing platforms, and modern facilities staffed by extraordinarily talented scientists, engineers and technicians.

For Directed Stockpile Work (DSW), the FY 2016 request is \$3.2 billion, a \$494.7 million increase over FY 2015 enacted levels, or about 18.4%. Approximately \$133 million of this increase

reflects a restructuring of the accounts when compared to the FY 2015 budget request. These changes are discussed below.

With respect to the major life extension programs (LEP), we have now passed the halfway mark in the production phase of the W76-1 LEP. This LEP, which directly supports the Navy, is now on track and on budget. Our FY 2016 Request of \$244.0 million will keep us on track to complete production in FY 2019.

We are also making significant progress in the engineering development phase of the B61-12 LEP. The B61 is a gravity bomb associated with Air Force long-range nuclear-capable bombers, as well as dual-capable fighter aircraft. Working with the Air Force, we successfully completed environmental flight tests on the F-15, F-16, and B-2 aircraft on or ahead of schedule. The B61-12 LEP will enter Phase 6.4 Production Engineering in 2016; and, with the \$643.3 million requested, we will remain on track to deliver the First Production Unit (FPU) in FY 2020.

Based on results from the ongoing surveillance of the nuclear weapons stockpile performed by NNSA's laboratories and plants, the Nuclear Weapons Council decided that it was prudent to expand the planned W88 Alteration (ALT) 370 to now include replacement of the conventional high explosive in the warhead. The budget request reflects this decision and includes \$220.2 million to support the FPU in FY 2020.

The budget request also includes \$195.0 million to support the Nuclear Weapons Council decision to accelerate by two years an LEP of the W80 to serve as the warhead for the Air Force's Long Range Stand-Off system (LRSO). FPU is now slated for 2025.

This budget request also supports our goal of dismantling all weapons retired prior to FY 2009 by FY 2022. In fact, we have already dismantled more than 42% of these weapons in 38% of the time allotted. This funding will ensure that we stay on track to meet our dismantlement commitment.

Within DSW, the budget request also includes \$415.0 million for a new "Nuclear Materials Commodities" subprogram to support the investment needed in nuclear materials to maintain the viability of the enduring stockpile. Included in this subprogram are Uranium Sustainment, Plutonium Sustainment, and Tritium Sustainment which are all crucial to sustain our stockpile, even as we move to lower levels in our nuclear stockpile. Since last year, we have created and empowered new program manager positions to oversee each of these nuclear materials programs. Also included within DSW, is a subprogram for Domestic Uranium Enrichment. Ensuring we have a domestic uranium enrichment capability for national security needs is particularly important in maintaining a domestic source of LEU to produce tritium and for research reactor conversion program and eventually to produce HEU for Naval Reactors fuel.

Consistent with the Consolidated and Further Continuing Appropriations Act for Fiscal Year 2015, activities formerly carried out under Campaigns are now included under Research, Development, Test, and Evaluation (RDT&E). The funding request for RDT&E is about

\$1.8 billion, essentially the same as the FY 2015 enacted level. This includes \$623.0 million for the Advanced Simulation and Computing (ASC) Program, an increase of \$25.0 million for the Advanced Technology Development and Mitigation (ATDM) subprogram that supports high performance computing; \$130.1 million for Advanced Manufacturing Development, an increase of \$22.9 million. This funding will support work related to electronics-based arming, fusing, and firing, as well as other technologies that require significant technical effort to ensure production readiness for manufacturing technologies needed to replace sunset technologies. We continue to develop and mature additive manufacturing technologies that can provide significant cost avoidance by reducing costs to prototype and manufacture tooling and certain weapons components. These increases are largely offset by relatively small decreases in the Science (-\$22.5 million for a total request of \$389.6 million), Inertial Confinement Fusion Ignition and High Yield Program (-\$10.4 million for a total request of \$502.5 million), and Engineering (-\$4.6 million for a total request of \$131.4 million) Programs.

The Inertial Confinement Fusion Ignition and High Yield program has spearheaded ongoing improvements in both 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). As a result of these improvements, LLNL has been able to increase the shot rate at NIF. NNSA recently completed a 10-year HED Science Strategic Plan to guide work in this important field.

Partnering with the DOE Office of Science, NNSA continues to make much needed investments in exascale computing. NNSA's ASC Program provides leading edge, high-end modeling and simulation capabilities to sustain and modernize the stockpile today and into the future. The FY 2016 Request includes \$64 million for the ASC's Advanced Technology Development and Mitigation subprogram to pursue long-term simulation and computing goals relevant to the exascale computing needed to support the broad national security missions of the NNSA. Both the NNSA and DOE's Office of Science continue to collaborate with the Office of Science providing \$209 million towards the development of capable exascale systems.

Defense Programs also supports the vitality of the broader National Security Enterprise. An important aspect of this is investing in Laboratory-, Site- and Plant-Directed Research and Development (LDRD). Independent reviews have consistently affirmed the importance of the program to the long-term vitality of the labs. LDRD provides basic research funding to foster innovation and to attract and retain young scientific and technical talent. Congressional support is essential to sustaining this essential national capability.

Finally, another important accomplishment within Weapons Activities in 2014 was the renewal of the Mutual Defense Agreement with the United Kingdom. Since 1958, this enduring agreement has enabled mutually beneficial exchange of nuclear expertise between the United States and UK, contributing to a long and proud history of defense cooperation between our two nations. In this case, the Administration and the Congress worked closely together to achieve a shared goal. We are truly grateful for your support.

Improving Safety, Operations and Infrastructure

In order to support all of these critical programmatic activities, we are making important strides in recapitalizing our aging infrastructure throughout the enterprise. In August 2014, DOE and NNSA formally dedicated the new National Security Campus (NSC) in Kansas City, Missouri. The former Kansas City Plant was relocated from the Bannister Federal Complex, a 70-year-old facility, to the NSC with half the footprint and a modern operating environment. The move was safely and securely completed one month ahead of schedule and \$10 million under budget. The NSC manufactures or purchases 85% of the non-nuclear components that make up our nuclear weapons, and thus plays a major role in keeping the Nation's nuclear stockpile safe, secure and effective.

The FY 2016 request restructures many of the activities formerly conducted under the Readiness in Technical Base and Facilities (RTBF) into the Infrastructure and Safety program. This new program will maintain, operate and modernize the NNSA general purpose infrastructure in a safe, secure, and cost-effective manner. Infrastructure and Safety efforts are organized around five elements – Operations of Facilities; Safety Operations; Maintenance; Recapitalization; and, Line Item Construction. Together, these elements provide a comprehensive approach to arresting the declining state of NNSA infrastructure. The FY 2016 request for Infrastructure and Safety is \$1.5 billion and reflects an increase of \$79.4 million for comparable activities from the FY 2015 enacted level. This funding will allow NNSA to modernize and upgrade aging infrastructure and address safety and programmatic risks.

We are developing a 10-year strategic plan that identifies the activities NNSA is undertaking to arrest the declining state of NNSA infrastructure, reduce Deferred Maintenance (DM), and dispose of excess facilities. The major elements of the plan include improving infrastructure decision-making with implementation of new, risk-informed analytical methods to better evaluate the ability of an asset to support program core capabilities; improving program management tools through implementation of standardized and automated processes and systems for scope, cost, and schedule management; accelerating recapitalization and construction efforts to revitalize infrastructure and make better use of the resources by strategically procuring common systems and components used across the enterprise; and shrinking the NNSA footprint by deactivating and disposing of excess facilities, with increased focus on timely deactivation and on repurposing and reuse as a strategy to avoid new construction. Within this 10-year plan, the transferring of the old Kansas City Bannister Road facility to a private developer to repurpose the site for local community use will eliminate \$250 million in DM. We recognize that these goals will not be met quickly, and that arresting the declining state of NNSA infrastructure will require steady commitment at all levels of the organization over many years. We believe that the tools and processes we are developing and implementing, along with sustained investment in our infrastructure, will set NNSA on the right path to ensuring a viable, safe, and effective nuclear security enterprise well into the future.

The Infrastructure and Safety program addresses the needs of program specific infrastructure, primarily the Uranium Processing Facility (UPF) and the Chemistry and Metallurgy Research

Replacement (CMRR) project. RTBF provides a defined level of readiness and capability through infrastructure investments and strategy development that are dedicated to special nuclear material processing and inventory management. The RTBF program accomplishes this mission by modernizing stockpile stewardship and management infrastructure through capability investments, strategic development, and line-item construction projects for the sustainment or enhancement of capabilities. The FY 2016 request is \$1.1 billion, with a reduction of \$1.4 billion, due to the transfer of select activities to Infrastructure and Safety. For comparability purposes, the FY 2016 request for RTBF is increased more than 50% to support a new source of high-purity depleted uranium, to realign recapitalization of Defense Programs capabilities through the Capabilities Based Investments (CBI), and to increase funding for the UPF at Y-12 to \$430.0 million and the CMRR Project at the Los Alamos National Laboratory (LANL) to \$156.0 million.

Last year, NNSA successfully executed one of the largest and most complex contract transitions in the history of the Department with the award of a contract to Consolidated Nuclear Security to operate and manage both the Pantex Plant and the Y-12 National Security Complex. The consolidated contract was written to require efficiencies and improved operations as a requirement for continued performance beyond the initial five-year base period. This is a departure from other management and operating contracts where efficiencies and effectiveness are considered but are not mandatory.

Our Office of Secure Transportation (OST) provides safe, secure movement of nuclear weapons, special nuclear material, and weapon components to meet projected DOE, DoD, and other customer requirements. It continues to modernize assets by extending the life of the Safeguards Transporter and is currently looking at options for the next generation transporter, the Mobile Guardian Transporter. To meet an increasing workload, OST is planning a small increase in the number of federal agents.

The primary mission of NNSA's Office of Defense Nuclear Security (DNS) and the Chief Security Officer is to develop and implement sound security programs to protect Special Nuclear Material (SNM), people, information, and facilities throughout the nuclear security enterprise. The NNSA's Defense Nuclear Security FY 2016 request is \$632.9 million. The request manages risk among important competing needs even as NNSA continues to face the challenges associated with an aging physical security infrastructure that must be effectively addressed in the coming years. The request includes \$13 million to initiate installation of Argus at the Device Assembly Facility at the Nevada National Security Site. Argus is the enterprise security system for Category 1 SNM facilities that integrates access control, intrusion detection, and video assessment of alarms to protect and control high-consequence assets. DNS also has a prioritized list of smaller infrastructure upgrade projects it will execute as General Plant Projects within available O&M funding, for example, lighting systems supporting perimeter camera assessment, replacement and upgrades to Argus Field Processors, replacement of ported coax cables and buried cable electronics that will extend lifecycles and delay total system replacements. DNS initiated an Enterprise Vulnerability Assessment process across the

enterprise with a focus on standardizing how vulnerability assessments are conducted and site protection strategies are formulated.

The Information Technology and Cybersecurity FY2016 request is \$157.6 million, a decrease of \$22.1 million or about 12.3% from FY 2015 enacted levels. The difference is attributed to a one-time investment in FY 2015 in the Infrastructure Program to implement a more secure classified computing environment. All activities related to the one-time increase were completed. Information Technology and Cybersecurity supports the nuclear security enterprise. This work includes continuous monitoring and enterprise wireless and security technologies (i.e., identity, credential, and access management) to help meet security challenges. In FY 2016, NNSA plans to complete 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 and coordinate all Committee on National Security Systems and Public Key Infrastructure capabilities. In addition, we will leverage the NNSA Network Vision framework to increase the efficiency and cost-effectiveness of NNSA Information Technology (IT) services.

Defense Nuclear Nonproliferation Appropriation

In FY 2016, we have realigned the NNSA programs that continue to support the President's Prague Agenda to address the threat of nuclear proliferation and terrorism into the Defense Nuclear Nonproliferation (DNN) appropriation. NNSA's activities work across the spectrum to prevent, counter and respond to the threat of nuclear and radiological proliferation and terrorism. We work to prevent the acquisition of nuclear or radiological materials, technology, and expertise; we actively counter efforts to develop the materials and scientific knowledge needed to construct a nuclear threat device; and we are poised to respond to terrorist acts by searching for and rendering safe any such devices.

The Defense Nuclear Nonproliferation (DNN) account request is \$1.9 billion, an increase of \$325 million or about 20.1% from FY 2015 enacted levels. At first glance, this figure looks like a very big increase but the number actually reflects a reorganization of our budget to include the Nuclear Counterterrorism Incident Response (NCTIR) and the Counterterrorism and Counterproliferation (CTCP) Programs from the Weapons Activities account. For comparability purposes, the DNN account increase is \$101.0 million or over 5% above FY 2015 enacted levels. Additionally, we have combined the NCTIR and CTCP programs into a single budget program line to eliminate confusion about NNSA nuclear counterterrorism programs and activities. We also changed the NCTIR name to Nuclear Counterterrorism *and* Incident Response Program, reflecting this realignment. The DNN Appropriation will now support two enduring mission areas: 1) The Defense Nuclear Nonproliferation Program and 2) The Nuclear Counterterrorism and Incident Response Program. The Nuclear Nonproliferation Program is also restructuring to place more emphasis on capabilities as opposed to specific programs. This organizational restructuring is reflected in the DNN budget restructuring.

To achieve all of these mission objectives, NNSA has restructured the budget request under the Defense Nuclear Nonproliferation account as follows:

- Material Management and Minimization
- Global Material Security
- Nonproliferation and Arms Control
- Defense Nuclear Nonproliferation R&D
- Nonproliferation Construction
- Nuclear Counterterrorism *and* Incident Response Program.

Together, this restructuring aligns funding for preventing, countering, and responding to global nuclear dangers in one appropriation.

Nonproliferation Efforts

The FY 2016 request for the DNN Program, excluding NCTIR and Legacy Contractor Pensions, is \$1.6 billion, an increase of \$67.9 million or about 4.4% above FY 2015 enacted levels. This past year was a big year for our nonproliferation efforts. Our Defense Nuclear Nonproliferation organization was responsible for many of the significant deliverables at the third Nuclear Security Summit held in The Hague last spring. Of particular note, Japan announced at the Summit that it would work with us to remove and dispose of all highly-enriched uranium (HEU) and separated plutonium from its Fast Critical Assembly. NNSA is currently working with its counterparts in Japan to resolve technical and logistical issues to complete this effort in a timely manner.

Also during the Summit, the United States joined 22 countries in signing up to a “Gift Basket” to secure all Category 1 radioactive sealed sources by 2016. In the United States, there are approximately 465 buildings with Category 1 devices. Of these, NNSA has completed security enhancements at 300 and is currently involved in a targeted outreach campaign to engage the remaining 165 buildings by the end of spring 2015.

And finally, NNSA partnered with five countries to remove 190 kg of HEU and plutonium from civilian facilities; which brings our cumulative total at the end of FY2014 to an impressive 5,207 kg; this is more than enough material for 200 nuclear weapons. While relations with Russia are severely strained, we anticipate that we will continue to cooperate in efforts to repatriate Russian-origin weapons-usable HEU material to Russia.

The Material Management and Minimization (M³) program presents an integrated approach to addressing the persistent threat posed by nuclear materials through a full cycle of materials management and minimization efforts. Consistent with the priorities articulated in the National Security Strategy of the United States and the Nuclear Posture Review, 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. This program includes elements of the former Global Threat Reduction Initiative (GTRI) and Fissile Materials Disposition Programs. The FY 2016 request for this program is \$311.6 million. For comparability

purposes, the request reflects an increase of \$38.7 million or about a 14.2% increase above the FY 2015 enacted levels. The funding increases are primarily for the removal of HEU from miniature neutron source reactors in Africa as well as preparatory activities for future shipments from Europe and Japan, which will proceed with appropriate cost-sharing.

The Global Material Security (GMS) program supports the President's nuclear and radiological security agenda and the Secretary's goal of enhancing nuclear security through nonproliferation. We work with partner countries to increase the security of vulnerable stockpiles of nuclear weapons, weapons-usable nuclear materials, and radiological materials, and to improve partner countries' abilities to deter, detect, and interdict illicit trafficking. Elements of the former GTRI program, International Material Protection and Cooperation (IMPC) program, and Nonproliferation and International Security (NIS) program are being combined in GMS, in order to better integrate capabilities required to support DNN's enduring mission. The FY 2016 request for this program is \$426.8 million. For comparability purposes the request reflects a slight increase of \$2.5 million above the FY 2015 enacted levels. This increase will accelerate the protection of International Atomic Energy Agency Category 1 radiological sources in order to meet the 2014 Nuclear Security Summit commitment to secure these sources by 2016.

The Nonproliferation and Arms Control (NPAC) program supports the President's nonproliferation agenda and NNSA efforts to prevent the proliferation or use of weapons of mass destruction by state and non-state actors. To carry out the goals of this program, we work with the International Atomic Energy Agency (IAEA) and foreign partners to build global capacity to safeguard nuclear materials and prevent illicit transfers of dual-use materials, equipment, technology and expertise. We also work with our partners and the IAEA to develop technologies and approaches to verify and monitor current and future arms control treaties and agreements. This funding also supports statutorily mandated activities such as technical reviews of export licenses and interdiction cases, and technical support for the negotiation and implementation of civil nuclear cooperation agreements (123 Agreements), as well as international export control outreach activities, and activities to support and improve the execution of the NPAC 10 CFR Part 810 application process. The FY 2016 request for this program is \$126.7 million, and reflects a slight increase of \$0.8 million above the FY 2015 enacted level.

The Defense Nuclear Nonproliferation 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 the Department of Energy, academia, and industry to perform research, including counterterrorism-related R&D. DNN R&D conducts technology demonstrations, and develops prototypes for integration into operational systems. The FY 2016 request for this program is \$419.3 million, a \$25.9 million increase or about 6.6% above FY 2015 levels. Increased funding is requested for nuclear and energetic materials characterization experiments and development of advanced diagnostic

equipment capabilities, for long-range nuclear detonation detection, and technical forensics research. This increase over FY 2015 levels is partially offset by a return to baseline funding for the Proliferation Detection subprogram after a one-time Congressional increase in FY 2015 for test bed development and field experiments.

Nonproliferation Construction consolidates construction costs for DNN projects previously contained within each program budget. Currently, the MOX Fuel Fabrication Facility (MFFF) is the only project in this program. The FY 2016 request for MFFF is \$345 million which is the same as the FY 2015 enacted level. The National Defense Authorization Act for Fiscal Year 2015 and the Consolidated and Further Continuing Appropriations Act for Fiscal Year 2015 directed the Department to conduct additional analyses of the MFFF construction project. These analyses will include independent cost and schedule estimates, and examination of alternative approaches for disposition of the 34 metric tons of weapon- grade plutonium and their relationship to the Plutonium Management Disposition Agreement (PMDA). The Department has requested Aerospace Corporation, a federally funded research and development center, to perform these analyses. They will be completed during FY 2015, and will inform a final decision on the path forward. The FY 2016 request emphasizes that while the Department continues to evaluate disposition paths (including the MFFF) to determine the most responsible path forward, any viable alternative will require a significant amount of funds to implement.

Nuclear Counterterrorism and Emergency Response

The FY 2016 Request consolidates counterterrorism and emergency response funding into a single Nuclear Counterterrorism and Incident Response line in the amount of \$234.4 million.

Within NCTIR, the Nuclear Counterterrorism Assessment program represents the primary scientific program to assess the threat of nuclear terrorism and develop technical countermeasures against it. The knowledge generated under this program ensures that NNSA's technical expertise on nuclear threat devices informs DoD and FBI emergency response capabilities. We have taken steps to address funding reductions to the nuclear counterterrorism activities. Over the last two years these activities, formerly known as Counterterrorism and Counterproliferation within the Weapons Activities appropriation, have been funded at a level significantly below the requested amount—70% of the Request in FY 2014 and 60% in FY 2015. The FY 2016 request would dedicate \$57.8M to Nuclear Counterterrorism Assessment in support of improvised nuclear device analysis. Additionally, the request includes funds within Defense Nuclear Nonproliferation R&D for materials characterization experiments and other research, which supports nuclear counterterrorism and incident response missions. Full funding of both lines will make it possible to continue NNSA's vital counterterrorism work at the national laboratories.

NCTIR continues to work domestically and around the world to improve preparedness and emergency response capabilities. Its expert scientific teams and equipment provide a technically trained, rapid response to nuclear or radiological incidents worldwide. NCTIR assesses nuclear or radiological threats and leverages that knowledge to provide contingency planning and training to support national and international counterterrorism and incident

response capabilities. In 2014, NNSA's emergency response teams deployed more than 100 times in support of law enforcement and for major public events, such as the Super Bowl, and conducted five large-scale field exercises with partners from the FBI, DoD, and FEMA. In addition, they deployed over 70 times in support of DHS Domestic Nuclear Detection Office support to state and local first responders. Internationally, NNSA conducted 16 training courses to improve its foreign partners' emergency management capabilities and continued to work bilaterally with Israel, Vietnam, Cambodia, Thailand, Chile, China, Mexico, Argentina, Brazil, Taiwan, Canada, France, Jordan, the Nordic countries, Armenia and Kazakhstan. New programs were also started with Romania, Belarus and the Philippines. These initiatives represent our effort to create a truly global defense against the threat of nuclear terrorism.

NCTIR will also continue the initiative to equip cities with stabilization equipment and training, to ensure a prompt and effective response to nuclear terror threats.

NCTIR also executes the DOE's Emergency Management and Operations Support program that manages the Emergency Operations Centers, Emergency Communications Network, and Continuity Programs for all of DOE, including NNSA.

Naval Reactors Appropriation

Advancing Naval Nuclear Propulsion

During the past year, NNSA helped celebrate the 60th Anniversary of the USS NAUTILUS first getting underway on nuclear propulsion. The Naval Nuclear Propulsion program pioneered advances in nuclear reactor and warship design -- such as improving reactor lifetimes, increasing submarine stealth, and reducing propulsion plant crewing. An example is the technology being developed by Naval Reactors that will enable the Ohio-Class Replacement submarine to be designed for a 40-plus year operational life without refueling, resulting in significant savings.

During 2014, Naval Reactors continued its record of operational excellence by providing the technical expertise required to resolve emergent issues in the Nation's nuclear-powered Fleet, enabling the Fleet to steam more 2 million miles. Through the work of its laboratory and highly skilled personnel, Naval Reactors also advanced the Ohio-Class Replacement and the S8G Prototype Refueling projects as well as initiating integrated testing of the lead A1B reactor plant for the next generation FORD-class aircraft carrier.

It is generally not well-known that if anything goes wrong with a reactor on one of the Navy's nuclear carriers or submarines while they are at sea, Naval Reactors' cadre of experts provide around-the-clock technical support, and can often resolve the problem and prevent the ship from having to return to port to be checked out and repaired-- which would be quite costly and disruptive to the Navy's deployment schedules.

The budget request for Naval Reactors is \$1.4 billion, an increase of \$141.6 million, about 11.5% from the FY 2015 enacted level. The request includes the base funding required to safely

maintain, operate and oversee the Navy's 83 nuclear-powered warships, constituting over 45% of the Navy's major combatants. The increase supports three high priority activities: \$186.8 million to continue development of the advanced *Ohio*-Class Replacement reactor; \$133 million to continue preparations for the refueling and overhaul of the Land-Based Prototype reactor plant; and \$86 million to continue the design work of the Spent Fuel Handling Recapitalization Project started in FY 2015. To this end, we would like to thank the Subcommittee's support for appropriating \$70 million for Spent Fuel Handling Recapitalization Project in the FY 2015 enacted budget. These activities are essential to maintaining a credible sea-based strategic deterrent, to maintain the research and training capabilities of the Land-based Prototype, and to maintain the capability to safely inspect, store and package naval spent nuclear fuel.

NNSA Federal Salaries and Expenses Appropriation

NNSA Federal Salaries and Expenses (FSE) Request is \$402.7 million, essentially equal to the rate of operations in FY 2015, but 8.9% above the FY 2015 enacted level. The Request provides funding for 1,690 full-time equivalents (FTEs) and support expenses needed to meet mission requirements. We are actively engaged in hiring to that number in a thoughtful and strategic manner. I would note that the Request represents an increase of only \$1.5 million from the FY 2015 planned execution level of \$401.2 million. This is due to the fact that the FY 2015 enacted level was significantly below the request and we will need to use over \$30 million of planned carryover to sustain the currently projected operations of the NNSA federal workforce. We built up that reserve through prudent planning and execution to enable us to pay for large one-time costs, such as the movement of much of our federal workforce in Albuquerque into newer leased space. The increase includes a 1.3 percent cost of living adjustment and benefits escalation, additional support to stand up the Office of Cost Estimation and Program Evaluation (CEPE) office in accordance with Section 3112 of the FY 2014 National Defense Authorization Act (NDAA), and funding to improve financial systems integration within the nuclear security enterprise in accordance with Section 3128 of the FY 2014 NDAA.

In FY 2016, NNSA will continue its on-going efforts to plan strategically 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 obtaining both the right staffing size and skill sets. NNSA will also continue to identify efficiencies, particularly in travel and support services, to provide a lean and efficient organization and to support the President's Executive Order "*Promoting Efficient Spending*".

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, the NNSA is committed to manage 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 the NNSA's effort

to deliver results by instituting rigorous analyses of alternatives, providing clear lines of authority and accountability for federal and contractor program and project management, and improving cost and schedule performance. NNSA participates in the Secretary's Project Management Risk Committee as a means to institutionalize and share best practices across the Department.

We have used strategic partnerships with the National Laboratories to rethink some of our most challenging projects. As a result of the Red Team review of the UPF at the Y-12 National Security Complex, led by the director of the Oak Ridge National Laboratory, and a similar approach to the Chemistry and Metallurgy Research Replacement (CMRR) Facility capability at Los Alamos National Laboratory, we are developing a disciplined, modular approach for both sites that will remove risks early in the process, and establish a well-defined cost and schedule, both of which were lacking in earlier efforts. This process will be an important and recurring project management theme at the NNSA and across the Department of Energy.

The CEPE was established in September 2014 pursuant to the FY 2014 National Defense Authorization Act. This legislation recognized the effort to improve cost estimating that the NNSA had already started. The CEPE office is a prime example of actions taken to improve our cost estimation efforts. Forging a strong partnership with the Department of Defense (DoD) Office of Cost Assessment and Program Evaluation (CAPE), including joint training activities with CAPE, we have made good progress in establishing CEPE as an independent office. CEPE will provide independent cost estimating leadership, rigorous program analysis, and prudent fiscal guidance. Getting CEPE fully functional is a high priority for NNSA, and we will closely monitor its progress as it grows into its full potential over the next few years.

Conclusion

The NNSA executes vital missions to ensure nuclear security at home and abroad. We do this by delivering the technology, capabilities and infrastructure essential to a 21st century national security organization. Our workforce continues to rise to the challenge and deliver mission effective and cost efficient nuclear security solutions critical for the NNSA to succeed in today's fiscal climate.

In closing, I would also like to mention that the President's Budget Request is just the first in a series of documents slated for release this spring. The most important of those yet to be released is the NNSA Strategic Plan, last updated in May 2011. The goal of this document is to provide a single integrated guidepost for NNSA's leaders, our partners at the labs and plants, and Congress and our external stakeholders. The new strategic plan will articulate a clear direction and mission to everyone – no matter their rank or position. Also to be released is the Congressionally-mandated Stockpile Stewardship Management Plan (SSMP) which details NNSA's multi-year plan for delivering a safe, secure and effective nuclear stockpile. And for the first time, we plan to release a companion plan to the SSMP, tentatively titled, "Prevent, Counter and Respond" to address our plans for nonproliferation, counterterrorism and emergency response programs. Finally, a report is being prepared for Congress in response to

the Final Report from the Congressional Advisory Panel on the Governance of the Nuclear Security Enterprise, co-chaired by Norm Augustine and Admiral Rich Mies.

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

Lieutenant General Frank G. Klotz, USAF (Ret)
Under Secretary for Nuclear Security and NNSA Administrator

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. Acting Administrator Held will return to his position as Associate Deputy Secretary.

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.

Written Statement of Mark Whitney

**Acting 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

March 24, 2015

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 \$5,818,024,000 Fiscal Year (FY) 2016 budget request.

Overview of the EM Mission

The Office of Environmental Management (EM) supports the Department's Strategic Plan to position the Department of Energy 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 (used) 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 program results from five decades of nuclear weapons development and production and Government-sponsored nuclear energy research. It involves some of the most dangerous materials known to humankind. 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, EM has completed almost \$152,000,000,000 worth of cleanup work. Sites like Fernald in Ohio and Rocky Flats in Colorado, both of which once housed large industrial complexes, are now wildlife preserves 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., enriched uranium) from the state. At Savannah River Site, South Carolina, we have produced almost 4,000 canisters of vitrified high-level waste and closed six of the site's underground storage tanks. At

our Portsmouth, Ohio, and Paducah, Kentucky, sites, we have designed, constructed and now operate two facilities to convert over 60,000 cylinders of depleted uranium hexafluoride into a more stable form suitable for beneficial reuse or disposal.

Across the EM complex, our progress in footprint reduction is significant, approximately 90 percent, with now less than 250 square miles remaining, and the progress continues.

EM Cleanup Objectives and Priorities

EM continues to pursue its cleanup objectives safely within a framework of regulatory compliance commitments and best business practices. The rationale for cleanup prioritization is based on achieving the highest risk reduction benefit. Taking many variables into account, EM has generally prioritized its cleanup activities as follows:

- Maintain a safe and secure posture in the EM complex
- Radioactive tank waste stabilization, treatment, and disposal
- Spent (used) nuclear fuel storage, receipt, and disposition
- Special nuclear material consolidation, stabilization, and disposition
- Transuranic and mixed/low-level waste disposition
- Soil and groundwater remediation
- Excess facilities deactivation and decommissioning.

The FY 2016 budget request supports clear, discrete progress in the cleanup of the environmental legacy of the Cold War. In particular, the request will allow EM to:

- Continue High Level Waste tank progress at Savannah River Site through liquid waste treatment at the Defense Waste Processing Facility, while completing construction and continue commissioning of the Salt Waste Processing Facility;
- Expedite tank waste treatment at the Office of River Protection, Hanford, Washington, through the Direct Feed Low Activity Waste (DFLAW) approach by continuing construction of the Low Activity Waste Facility, Analytical Laboratory, and Balance of Facilities at the Waste Treatment and Immobilization Plant and design of the Low Activity Waste Pretreatment System;
- Resume transuranic waste disposal operations at the Waste Isolation Pilot Plant, New Mexico;
- Complete major facility cleanout and demolition projects, including the Plutonium Finishing Plant at Hanford and K-27 at the East Tennessee Technology Park (ETTP) in Oak Ridge, Tennessee; and
- Address key infrastructure needs across the complex, especially upgrades to the fire water system and replacement windows in the B-Hot Cell at the Savannah River National Laboratory.

Most importantly, EM will continue to discharge its responsibilities by conducting cleanup within a “Safety First” 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.

Cleanup activities – We continue to make cleanup progress. We have produced nearly 4,000 canisters of vitrified high-level waste at Savannah River Site, South Carolina, converting it to a solid glass form safe for long-term storage and permanent disposal. This is about half of the sludge in the SRS tanks. At Hanford, we have completed cleanup of the bulk of the River Corridor, including more than 500 facilities and 1,000 remediation sites. At Oak Ridge, we are on track to complete preliminary design for the Outfall 200 Mercury Treatment Facility by the end of FY 2015. The budget request continues progress in completing buried waste exhumation at the Idaho site under the Accelerated Retrieval Project. Seven out of a total of nine retrieval areas have been completed, and the funding requested will continue exhumations at the eighth retrieval area, which is the largest retrieval area under the project. With regard to tank closure activities, the FY 2016 budget request will complete bulk waste removal activities from two tanks at Savannah River Site (for a total of eight tanks completed) to meet a 2016 Federal Facility Agreement commitment, and at the Office of River Protection, EM will complete C-Tank Farm retrievals in 2015 leading to closure of that tank farm, and begin A/AX Tank Farms construction for further single shell retrievals.

Contract and Project Management – Our cleanup progress depends in large part on the successful planning, construction and operation of large, often first-of-a-kind, projects and facilities. We continue to emphasize continuous improvement in our contract and project management. First, for example, to ensure that we have skilled federal project directors and contracting officers to cover our large and diverse portfolio of projects, EM has hired 10 Cost Estimators and 23 Contracting Specialists/Officers across the complex in the past year. Second, we require upfront planning, improved cost-estimating capabilities, and we conduct more frequent project reviews to improve the success of our projects. Examples include the successful demolition of the largest gaseous diffusion process building at East Tennessee Technology Park (K-25) in Oak Ridge, nearly one mile long with 1.6 million square feet under roof, a year ahead of the revised baseline cost and schedule. Lessons from this project are now being applied to the other gaseous diffusion demolition projects.

As we have noted previously, DOE is in the process of updating the cost and schedule baseline for the Low Activity Waste Facility, Balance of Facilities and Analytical Laboratory, referred to as LBL. Once technical issues for the High Level Waste and Pretreatment Facilities are resolved

and appropriate design changes are made, DOE will update the baseline for the entire WTP project.

Highlights of the FY 2016 Budget Request

The FY 2016 budget request for EM is \$5,818,024,000. The request includes the proposed reauthorization of the Uranium Enrichment Decontamination & Decommissioning Fund. The budget request for EM is comprised of \$5,055,550,000 for defense environmental cleanup activities and \$471,797,000 for the defense deposit into the Fund, \$220,185,000 for non-defense environmental cleanup activities, and \$542,289,000 for Uranium Enrichment Decontamination and Decommissioning Fund cleanup activities. The request proposes activities to maintain a safe and secure posture in the EM complex, while maximizing our work on compliance activities. To that end, we will engage with our federal and state regulators regarding compliance requirements that may result in changes to the cleanup milestones in 2016.

The FY 2016 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 closely with our contractors to identify the most economical and timely path for completion. These two sites are planned to treat over 80 million gallons of radioactive tank waste for ultimate disposal.

In FY 2016, much progress will be made on the treatment of high level radioactive waste in tanks across the complex. Sodium-bearing waste operations at Idaho will continue in FY 2016. This budget request supports preparing for the removal of tank sludges and the cleaning and grouting activities supporting the closure of the final four high level waste tanks at the Idaho site. At the Savannah River site, the FY 2016 request supports continued production of canisters of vitrified waste derived and processed from the high level waste tanks, and the construction of an additional on-site disposal space for saltstone. Construction will continue on the Salt Waste Processing Facility with the tie-ins for liquid waste and other activities being completed in 2016, and progress towards regulatory milestones will be met with completion of grouting and closure of Tank 12 and completion of bulk removal activities for Tank 15. These activities are essential to high level radioactive liquid waste elimination and eventual tank closure.

The Department is working aggressively to complete and operate the treatment facilities and infrastructure to safely immobilize and dispose of tank waste at Hanford. This budget request supports continued construction of the LBL, as well as production engineering and limited construction on the High Level Waste Facility, while resources are dedicated to promptly resolve the outstanding technical issues of the High-Level Waste and Pretreatment Facilities.

At WIPP, we will continue recovery, regulatory, and compliance actions to support safe and compliant operations leading to the planned resumption of waste emplacement in the first quarter of calendar year 2016. The budget request also includes funding for designing and constructing

two line item construction projects - the Exhaust Shaft and the Safety Significant Confinement Ventilation System - which are necessary to protect the environment and safely return the Waste Isolation Pilot Plant to its congressionally mandated mission of defense-generated transuranic waste disposal operations.

Ongoing cleanup efforts continue at Oak Ridge's East Tennessee Technology Park (ETTP). The FY 2016 budget request supports the demolition of K-27, the last gaseous diffusion process building at Oak Ridge. The request also supports investment in mercury characterization and remediation technologies and the design for the Outfall 200 Mercury Treatment Facility at the Oak Ridge Site. At Hanford, the budget request supports the completion of the Plutonium Finishing Plant Facility (PFP) D&D project to achieve slab-on-grade by the end of FY 2016. The budget request also provides \$83,423,000 for continued line item construction associated with facility modifications to prepare for installation of sludge removal systems in the K West Basin Sludge Removal Project.

Budget Authority and Planned Accomplishments by Site

Office of River Protection, Washington (Dollars in Thousands)

FY 2015 Enacted	FY 2016 Request
\$1,212,000	\$1,414,000

Key Accomplishments Planned for FY 2016

- Move closer to resolution of technical issues dealing with Criticality; Hydrogen Gas in Vessels; Pretreatment Facility Vessels structural analysis; and Erosion/Corrosion
- Maintain planned construction of WTP's Low Activity Waste Facility, Analytical Laboratory, and Balance of Facilities to support phased commissioning that lead to the planned start of waste treatment in 2022
- Continue production and engineering/design and limited construction for the High Level Waste facility
- Preparation and construction in A/AX tank farm to support single-shell tank retrievals

Savannah River Site, South Carolina (Dollars in Thousands)

FY 2015 Enacted	FY 2016 Request
\$1,259,542	\$1,336,766

Key Accomplishments Planned for FY 2016

- Complete grouting and closure of Tank 12 and complete bulk waste removal activities for Tank 15
- Package 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 1.2 million gallons of salt waste
- Conduct liquid waste tie-ins and other support activities supporting startup of the Salt Waste Processing Facility
- Continue closure of legacy transuranic-waste pads under Federal and State regulations
- Monitor, perform analysis, and report on over 2,000 groundwater wells and 5 major streams

Carlsbad Field Office, New Mexico (Dollars in Thousands)

FY 2015 Enacted	FY 2016 Request
\$324,455	\$248,178

Key Accomplishments Planned for FY 2016

- Continue recovery activities to enable initial resumption of waste emplacement in the second quarter of FY 2016
- Continue critical site maintenance and infrastructure activities to support WIPP recovery efforts.

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

FY 2015 Enacted	FY 2016 Request
\$189,600	\$188,625

Key Accomplishments Planned for FY 2016

- Continue canyon, groundwater, and stormwater investigations, monitoring and protection
- Continue Solid Waste Stabilization and Disposition services and actions to maintain safe storage of stored transuranic inventory above and below grade
- Continue decontamination and decommissioning activities for process-contaminated facilities at Technical Area-21

Idaho National Laboratory, Idaho (Dollars in Thousands)

FY 2015 Enacted	FY 2016 Request
\$405,103	\$366,702

Key Accomplishments Planned for FY 2016

- Complete treatment of sodium contaminated transuranic and dispose of mixed low-level waste, in support of the Site Treatment Plan milestones
- Continue retrieval, processing and disposition of targeted buried waste
- Implement Record of Decision for remediation of tank farm soils and groundwater, unexploded ordinance, and site-wide groundwater
- Continue treatment of sodium bearing waste in the Integrated Waste Treatment Unit

Oak Ridge Site, Tennessee (Dollars in Thousands)

FY 2015 Enacted	FY 2016 Request
\$431,142	\$365,672

Key Accomplishments Planned for FY 2016

- Continue demolition activities at K-27
- Continue planning and design for the Outfall 200 Mercury Treatment Facility
- Continue processing remote-handled transuranic waste debris at the Transuranic Waste Processing Center

Richland Operations Office, Washington (Dollars in Thousands)

FY 2015 Enacted	FY 2016 Request
\$1,007,230	\$914,000

Key Accomplishments Planned for FY 2016

- Complete the Plutonium Finishing Plant Facility D&D project to achieve slab-on-grade by September 2016
- Continue operations, maintenance, and additional modifications of site-wide groundwater treatment systems to optimize contaminant removal
- Complete Columbia River Corridor remediation, except for the 100 K Area, 618-10/11 burial grounds, and Building 324 and associated waste site
- Continue construction of the K-Basin Sludge Treatment Project
- Complete upgrades to the Waste Storage and Encapsulation Facility exhaust system to prepare for transfer to dry storage

Nevada National Security Site, Nevada (Dollars in Thousands)

FY 2015 Enacted	FY 2016 Request
\$64,851	\$62,385

Key Accomplishments Planned for FY 2016

- Complete soil closure activities for 1 contaminated site
- Complete soil characterization activities for 5 contaminated sites
- Support cleanup at multiple sites across the DOE complex by safely and compliantly operating disposal facilities, disposing 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 Office of Environmental Management. 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. Our FY 2016 budget request supports compliance activities and our highest priorities. These priorities include the recovery of the Waste Isolation Pilot Plant, restoring operations for its congressionally mandated mission of safely disposing of defense-generated transuranic waste. The request also supports the high priority construction of two unique and complex tank waste processing plants at the Savannah River Site and the Office of River Protection, which will eventually treat over 80 million gallons of radioactive tank waste for ultimate disposal. Our budget request also supports the ongoing cleanup effort at the East Tennessee Technology Park, at Oak Ridge, where EM is in the process of demolishing the last remaining gaseous diffusion plant, K-27, and at Hanford, where we will demolish the Plutonium Finishing Plant to slab-on-grade. All of this work will, first and foremost, be done safely, within a framework of regulatory compliance commitments and best business practices. I am pleased to answer any questions you may have.

Mark Whitney
Principal Deputy Assistant Secretary for Environmental Management

Mr. Mark Whitney was named Principal Deputy Assistant Secretary for the U.S. Department of Energy (DOE) Office of Environmental Management (EM) in May 2014. A member of the U.S. Senior Executive Service for more than nine years, Mr. Whitney joined DOE in 2005 and has served EM and the National Nuclear Security Administration.

Mr. Whitney has held several key DOE positions in which he demonstrated his exceptional ability to develop high-performing organizations and teams. He was Manager of EM's Oak Ridge Office, where he was responsible for the site's environmental cleanup, including demolition of the K-25 Building, once the world's largest building under one roof; he was acting Principal Assistant Deputy Administrator for Defense Nuclear Nonproliferation, where he oversaw a \$2.3 billion nuclear security and nonproliferation program; and Assistant Deputy Administrator for Nonproliferation and International Security, where he managed global programs focused on nuclear safeguards, nuclear controls, nuclear verification and transparency, nonproliferation, and arms control policy.

Mr. Whitney managed DOE's Russian operations from 2005 to 2008. His accomplishments in Russia include the implementation of DOE nonproliferation and energy programs, such as power plant construction projects that provided replacement heat and electricity capacity to enable the shutdown of the last Russian plutonium production reactors.

TESTIMONY OF
MS. JESSIE H. ROBERSON, VICE CHAIRMAN
DEFENSE NUCLEAR FACILITIES SAFETY BOARD

SAFETY OVERSIGHT OF DEPARTMENT OF ENERGY
DEFENSE NUCLEAR FACILITIES

SUBCOMMITTEE ON STRATEGIC FORCES
HOUSE ARMED SERVICES COMMITTEE
UNITED STATES HOUSE OF REPRESENTATIVES

MARCH 24, 2015

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

Thank you for the opportunity to testify on nuclear safety issues at defense nuclear facilities operated by the Department of Energy (DOE) and the National Nuclear Security Administration (NNSA). The Defense Nuclear Facilities Safety Board (Board) is a small agency, overseeing billions of dollars in DOE construction projects, a huge portfolio of site clean-up work, and ongoing activities supporting the nuclear weapons stockpile. We strive to proactively address safety issues at DOE defense nuclear facilities to ward off threats to public health and safety. Specifically, we have advised and will continue to 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 improve emergency preparedness and safety culture at sites with defense nuclear facilities.

Today I will briefly discuss the Board's Fiscal Year (FY) 2016 Budget Request. I will then provide some background on the Board's mission and operations, followed by the Board's assessment of high-priority safety issues related to DOE and NNSA defense nuclear facilities. Last year's radioactive material release at the Waste Isolation Pilot Plant (WIPP) demonstrated the significant impact likely to result from any radiological incident at a DOE defense nuclear facility. The WIPP radioactive material release resulted in 22 workers receiving low-level intakes of radioactive material and severely contaminated the underground waste disposal facility. Waste disposal operations have been shut down for over 13 months, and they will likely remain shut down for at least another year. This has impacted cleanup activities across DOE's entire defense nuclear

complex and illustrates that even activities judged to be relatively low-risk can still have major safety consequences and large impacts on DOE's ability to accomplish its mission when radioactive materials are involved. The Board is the only government agency that provides independent scientific and technical oversight of DOE and NNSA defense nuclear facilities.

Resource Needs of the Board

The President's Budget Request for FY 2016 includes \$29.15 million in new budget authority for the Board. This is an increase of \$650,000 compared to the budget enacted in the Consolidated and Further Continuing Appropriations Act for FY 2015. This Budget Request will support a staffing level of 122.5 full-time equivalent (FTE) employees. Effective next fiscal year the Board's employee ceiling will be 130 full-time equivalent personnel, and we are striving to achieve an on-board strength of 125 employees by the end of FY 2016. We believe this level of staffing will allow the Board to (1) provide independent oversight to ensure that public and worker health and safety are adequately protected, given the current pace and scope of activities in the DOE defense nuclear complex; (2) implement improved internal controls over the Board's operations; and (3) be responsive to the permanent assignment of the Nuclear Regulatory Commission's Office of Inspector General (NRC-OIG) as the Board's Inspector General (IG) by the National Defense Authorization Act for FY 2015 (NDAA). The Consolidated and Further Continuing Appropriations Act for FY 2015 echoed the NDAA's IG amendment, and appropriated \$850,000 directly to the NRC-OIG for that purpose.

The Board's budget is essentially devoted to maintaining and supporting an expert

staff of engineers and scientists—most of whom have technical master's degrees or doctorates—required to accomplish the Board's highly specialized work. Nearly 80 percent of the Board's obligations are directly related to technical oversight. Of that, seventy percent of the Board's Budget Request for FY 2016 is for salaries and benefits, four percent is for travel and transportation—essential because of the need to physically visit DOE defense nuclear facilities—and three percent is for technical expert contracts. In all, nearly 80 percent of the Board's obligations are directly related to technical oversight.

Statutory Mission and Operations of the Board

The Board was created by Congress in 1988. The statutory mission of the Board is to *provide independent analysis, advice, and recommendations to the Secretary of Energy to inform the Secretary, in the role of the Secretary as operator and regulator of the defense nuclear facilities of the Department of Energy, in providing adequate protection of public health and safety at such defense nuclear facilities.* The Atomic Energy Act of 1954, as amended, currently establishes two categories of facilities subject to Board jurisdiction: (1) those facilities under the Secretary of Energy's control or jurisdiction, operated for national security purposes that produce or utilize special nuclear materials; and (2) nuclear waste storage facilities under the control or jurisdiction of the Secretary of Energy. The Board's jurisdiction does not extend to facilities or activities associated with the Naval Nuclear Propulsion Program, offsite transportation of nuclear explosives or materials, the U.S. Enrichment Corporation—now known as Centrus Energy Corp.—facilities developed pursuant to the Nuclear Waste Policy Act of 1982

and licensed by the Nuclear Regulatory Commission, or any facility not conducting atomic energy defense activities.

Under its enabling statute, 42 U.S.C. § 2286 *et seq.*, the Board is responsible for independent oversight of all programs and activities impacting public health and safety within DOE's defense nuclear facility complex—a complex that has served to design, manufacture, test, maintain, and decommission nuclear weapons, as well as other national security purposes. To effectuate its oversight mission, 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. The Board is further authorized to access and analyze any information related to a DOE defense nuclear facility.

In support of its mission, the Board may conduct investigations, issue subpoenas, hold public hearings, gather information, conduct studies, establish binding reporting requirements for the Secretary, and take other actions in furtherance of its review of health and safety issues at DOE defense nuclear facilities. These powers facilitate accomplishment of the Board's primary function to independently oversee the safety of DOE's defense nuclear facilities. The Secretary of Energy is required to cooperate fully with the Board and provide the Board with ready access to such facilities, personnel, and information the Board considers necessary to carry out these responsibilities.

Board Safety Recommendations

The Board is required to make recommendations to the Secretary of Energy that the Board believes are necessary to ensure adequate protection of public health and safety. The Secretary may accept or reject the recommendations in whole or in part. To enhance collaboration between the Board and DOE, Congress revised the Board's enabling legislation in the NDAA for FY 2013 to require the Board to provide its safety recommendations to the Secretary of Energy in "draft" form, and to allow the Secretary 30 days to comment on the draft recommendations prior to finalization and publication in the Federal Register. The Board issued the first recommendation that followed the revised process last year. That recommendation was recently accepted by the Secretary, and DOE is currently working on development of its implementation plan.

Another revision to the Board's enabling legislation in the NDAA for FY 2013 directed the Board to "specifically assess risk (whenever sufficient data exists)" in making its recommendations. Consistent with commercial nuclear industry practices, an assessment of risk involves an evaluation of (1) what can go wrong, (2) how likely it is, and (3) what its consequences might be. In performing a risk assessment, the Board takes many factors into account, including: (1) proximity to collocated workers and the offsite public; (2) quantity, chemical composition, physical form, and radiological characteristics of material stored or handled in the facility; (3) mechanisms for release of materials such as earthquakes, tornados, chemical reactions, fires, explosions, nuclear criticality, highly energetic violent reactions involving nuclear explosives, nuclear detonations, and other

potential energy sources; and (4) complexity of safety controls and the degree of reliance on active safety systems or administrative controls instead of passive design features.

Per its statute, the Board must consider the technical and economic feasibility of implementing its recommended measures. On February 14, 2013, the Board issued a report to the congressional defense committees regarding how the Board considers the technical and economic feasibility of implementing its recommended measures. We are very mindful of the need for efficient and cost-effective solutions to safety problems at DOE defense nuclear facilities and perform independent oversight of DOE's evaluation of options for mitigating hazards. DOE may consider factors such as the remaining life of the facilities, schedules for replacing them, and means to mitigate disruptions to ongoing operations that may result from recommended safety improvements. However, the Board has no authority to specify a particular solution; that authority is the Secretary's alone.

Under the Board's statute, the Secretary of Energy may "accept" a Board recommendation, but make a determination that its implementation is impracticable because of budgetary considerations or because the implementation would affect the Secretary's ability to meet the annual nuclear weapons stockpile requirements. The Secretary must report any such decision to the President and to various congressional committees.

If the Board were to determine that a recommendation relates to an imminent or severe threat to public health and safety, the Board would be required to simultaneously transmit the recommendation to the President and the Secretary of Energy, and copy for

informational purposes the Secretary of Defense. After receipt by the President, the Board would also be required to make such a recommendation public and transmit it to the Committees on Armed Services, Appropriations, and Energy and Commerce of the House of Representatives and the Committees on Armed Services, Appropriations, and Energy and Natural Resources of the Senate. The President has the exclusive authority to make the decision concerning acceptance or rejection of the Board's recommendation, and must notify the relevant congressional committees of the decision and reasons therefor. The Board has never determined that a recommendation relates to an imminent or severe threat to the public.

Current Nuclear Safety Issues at DOE and NNSA Defense Nuclear Facilities

The Board's mission is broad and constantly evolving. The Board is required to provide safety oversight of complex, high-hazard operations critical to national defense, including assembly and disassembly of nuclear weapons, fabrication of plutonium pits and weapon secondaries, production and recycling of tritium, criticality experiments, subcritical experiments, and a host of activities to address the radioactive legacy resulting from 70 years of operations. In a joint report to Congress on July 19, 2007, the Board and DOE agreed that early integration of safety in design is both crucial and cost-effective. The failure to identify design flaws that could impact public and worker health and safety early in the design process can significantly increase project costs due to the price of re-engineering and the need to make post-construction modifications to complex DOE defense nuclear facilities.

I would like to highlight the following safety issues:

- Criticality Safety at the Los Alamos Plutonium Facility
- Earthquake Hazard at Los Alamos National Laboratory
- Nuclear Explosive Safety
- Early Integration of Safety in Design
- Work Planning and Control
- Recovery Actions at WIPP
- Emergency Preparedness and Response

Criticality Safety at the Los Alamos Plutonium Facility

Since 2005, NNSA has recognized that the Los Alamos National Laboratory's criticality safety program does not fully comply with applicable requirements. In 2013, a severe staffing shortage in the Laboratory's criticality safety group inhibited progress in correcting the deficiencies in this program. Reviews by the Board's staff in 2013 brought this concern as well as new deficiencies in the Laboratory's criticality safety program to the attention of Laboratory management and NNSA. On June 27, 2013, the Laboratory Director paused all programmatic activities at the Los Alamos Plutonium Facility (PF-4).

During the first few months of 2014, NNSA resumed operations in PF-4 that pose a lower criticality safety risk; many others remained under the Laboratory Director's operational pause while Laboratory personnel continued to execute corrective actions. Due to the length of time that has elapsed since the Laboratory last performed many higher-risk operations, DOE directives require federal readiness assessments prior to resuming the operations. NNSA plans to perform several of the readiness assessments in 2015. The Board's staff will closely monitor these readiness assessments to ensure that

the Laboratory's corrective actions have effectively addressed all deficiencies in criticality safety and conduct of operations.

Earthquake Hazard at Los Alamos National Laboratory

A 2007 reanalysis of potential earthquakes at Los Alamos indicated a greater than fourfold increase in the predicted earthquake ground motion over the original design requirements for PF-4. PF-4 was designed and constructed in the 1970s, and its structure lacks the ductility and redundancy required by today's building codes and standards. PF-4 contains significant amounts of plutonium, much of it in dispersible forms. The facility's safety documentation, 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.

Since 2007, much has been done to strengthen the structure of the building and to reduce the likelihood and severity of a post-seismic fire, and further improvements are planned. Notwithstanding those improvements, additional analyses have raised further questions regarding the possibility of severe damage to the facility, including a potential facility collapse following a design basis earthquake.

In September 2012, the Deputy Secretary of Energy directed NNSA to evaluate the seismic vulnerability of PF-4 using a new modeling approach. This alternate analysis has been performed by an independent engineering firm. NNSA originally informed the Board that it expected the alternate analysis to be completed in early 2014; this timeline has continued to slip. NNSA chartered an expert panel to assess the results of the

analysis completed thus far. NNSA recently informed the Board that it expects by the end of March 2015 to have the information necessary to finalize the path forward to ensure appropriate seismic margin for PF-4. The Board will evaluate NNSA's plan for further analyses and/or additional structural upgrades once it is defined.

Nuclear Explosive Safety

The primary mission of the Pantex Plant is to assemble, disassemble, examine, and dismantle nuclear weapons. The highest level of safety oversight is warranted to preclude an accident involving a nuclear detonation or violent reaction of high explosives. Personnel in NNSA's nuclear explosive safety program are responsible for ensuring all operations meet the required standard of safety for these high-hazard operations. The Board has continually urged NNSA to strengthen its nuclear explosive safety program.

Throughout 2013 and 2014, NNSA realigned nuclear explosive safety responsibilities and authorities at the headquarters level and worked to revise its nuclear explosive safety directives, including two revised DOE Orders and a new NNSA Supplemental Directive. The Board is working closely with NNSA to ensure there is no lapse in nuclear explosive safety as NNSA strives to implement its new organizational structure and begin executing the newly defined processes and standards.

Early Integration of Safety in Design

During 2014, DOE made progress in resolving certain safety issues affecting complex design and construction projects. Examples include the Sludge Treatment

Project at the Hanford Site, where Board safety issues identified in earlier stages of design with safety instrumented systems were addressed by DOE prior to the final design stage, and the Waste Treatment and Immobilization Plant (WTP) at the Hanford Site, where DOE adopted a key design standard that effectively addressed some open Board issues.

DOE has refocused its approach for WTP to pursue direct feed of waste for vitrification in the Low Activity Waste Facility while it addresses issues with the other WTP facilities. The Board is reviewing this plan as it develops and has not identified significant safety issues thus far.

DOE continued to struggle with many open safety issues for the other WTP facilities. In 2012, DOE slowed the construction of the Pretreatment and High-Level Waste Facilities to resolve safety issues and to reevaluate the project's design. In 2014, DOE authorized the WTP contractor to resume engineering work to finalize the design of the High-Level Waste Facility. The Board reviewed the revised safety documentation for these facilities and identified safety issues in 2014 concerning volcanic ashfall events and unanalyzed melter accidents. Further issues with the High-Level Waste Facility identified by the Board thus far in 2015 include the seismic classification of safety components and the need for a strategy to prevent hydrogen explosions following a loss of power.

The Board uses "project letters" to provide timely notification of safety issues to DOE at major project milestones (known as "Critical Decisions") to ensure that DOE is aware of unresolved safety issues and to assist DOE in evaluating a project's readiness to

move forward. During 2014, the Board completed two project letters. The Board concluded that no significant safety issues remained for Hanford's Sludge Treatment Project at the completion of final design and documented that conclusion by letter to DOE on May 2, 2014. In an August 7, 2014, letter to DOE, the Board reiterated outstanding issues at the completion of final design of the Transuranic Waste Facility project at Los Alamos National Laboratory. The letter also identified new issues with worker safety controls for that facility.

During the Board's October 7, 2014, public hearing on safety culture in DOE, the Secretary of Energy testified that DOE was in the process of revising its fundamental project management structures to improve the execution of projects. The Secretary announced the changes on December 1, 2014, in a memorandum titled *Improving the Department's Management of Projects*. Important changes include strengthening the Energy Systems Acquisition Advisory Board, establishing a project management risk committee, and directing the Under Secretaries to develop plans to clarify lines of responsibility and improve the peer review process. The Secretary's memorandum also directed all programs to ensure their projects comply with DOE Orders and directed the establishment of a project leadership institute to create and sustain a culture of project delivery excellence.

Work Planning and Control

In 2012, the Board concluded that DOE had not achieved sustained improvement in the planning and control of hazardous work in defense nuclear facilities. In 2014, DOE completed a new DOE directive providing comprehensive guidance for contractors

and revised its directive on federal oversight to explicitly address work planning and control. The Board's staff closely followed these efforts, providing comments to assist and enhance the resulting products. DOE issued a new DOE Handbook 1211-2014, *Activity-level Work Planning and Control Implementation*, and revised DOE Guide 226.1-2A, *Federal Line Management Oversight of Department of Energy Nuclear Facilities*.

Also in 2014, the Board's staff assessed work planning and control at the Y-12 National Security Complex, the Hanford Plutonium Finishing Plant, the Savannah River Site, and the Los Alamos National Laboratory. The Board's staff also observed DOE assessments of work planning and control at the Idaho Advanced Mixed Waste Treatment Project and at Sandia National Laboratories. The Board's staff noted improvement in the implementation and oversight of work planning and control during these assessments. Implementation of the new directives should enable DOE and its contractors to achieve and sustain further improvements and better ensure worker safety at defense nuclear facilities.

Recovery Actions at WIPP

WIPP suspended operations on February 5, 2014, following a fire involving an underground vehicle. Nine days later, on February 14, 2014, a release of radioactive material occurred underground, contaminating a portion of the mine and releasing a small amount of radioactive contamination into the environment. Fortunately, no workers were underground at the time, but 22 workers at ground level received low-level intakes of radioactive material. DOE suspended disposal of transuranic waste at WIPP to

investigate the accidents and develops corrective actions. DOE completed its fire investigation but is still finalizing the report of its investigation into the cause of the radioactive material release.

Elimination of the hazards posed by shallow burial and surface storage of transuranic waste at DOE's other defense nuclear facilities has been delayed by the suspension of operations at WIPP. The Board deployed members of its staff to WIPP to closely monitor DOE's response and recovery actions for the accidents, and sent three letters to the Secretary of Energy in 2014 regarding establishing and maintaining safe conditions at WIPP. The Board continues to closely monitor ongoing recovery actions and DOE's development of facility modifications and other corrective actions to ensure transuranic waste disposal operations can be conducted safely at WIPP.

Emergency Preparedness and Response

During the past several years, the Board examined issues associated with the emergency preparedness and response capabilities at DOE sites during Board site visits and at several public hearings. Members of the Board's staff reviewed the emergency management programs at several defense nuclear facilities and provided continuous oversight of the response to the truck fire and radioactive material release events at WIPP. The Board's site representatives made numerous observations of the state of emergency preparedness at their respective sites. The increased oversight revealed a number of significant issues that warranted near-term resolution. As a result, on September 3, 2014, the Board issued Recommendation 2014-1, *Emergency Preparedness and Response*, recommending that DOE make specific improvements in its emergency

management requirements and implementation to ensure the continued protection of workers and the public.

The Secretary of Energy accepted the Recommendation on November 7, 2014. DOE is in the process of developing its implementation plan to accomplish the improvements specified in the Recommendation.

The Board's staff will continue to review the effectiveness of emergency management programs at defense nuclear facilities. Reviews will include observing emergency response drills and exercises and targeted reviews of site emergency management program elements, as well as continued oversight by the Board's site representatives.

Conclusion

We believe DOE has demonstrated a good safety record. However, today's challenges of aged infrastructure, design and construction of new and replacement facilities, and the undertaking of a wide variety of new activities in defense nuclear facilities, coupled with ongoing mission support activities, require continued vigilance in safety oversight to assure public and worker protection.

I anticipate that the issues I have described are familiar to DOE, NNSA, and the Board's congressional oversight committees. They have been previously identified by the Board in public documents, such as letters to DOE and NNSA, and reports to Congress. These reports and documents are available for review on the Board's public web site.

Ms. Jessie Hill Roberson
Vice Chairman of the Defense Nuclear Facilities Safety Board

Ms. Jessie Hill Roberson a native of Evergreen, Alabama, has over 30 years of experience in the nuclear engineering field, with profound experience in low level waste management, environmental restoration, reactor operations and project management. Ms. Roberson's who is currently serving her second tour with the Defense Nuclear Facility Safety Board (DNFSB) was initially nominated as a member of the Board in September 1999 by President Bill Clinton. Ms. Roberson was confirmed by the United States Senate in January 2000. After a short departure from the board, Ms. Roberson was again nominated as Vice Chairman of the Board by President Barack Obama.

Prior to and after her first appointment to the Board, Ms. Roberson served with the Department of Energy (DOE) in a variety of challenging positions. In 1996 she became the Manager of DOE's Rocky Flats Field Office at the Rocky Flats Environmental Technology Site in Colorado, with the responsibility for integration and performance of all environmental cleanup activities on the Site. She served with distinction in this position until December 1999. In her ten years with the Department of Energy, she has held numerous technical and managerial positions at DOE's Rocky Flats Environmental Technology Site and the Savannah River Site in Aiken, South Carolina, including environmental cleanup, waste management, safeguards and security, as well as nuclear reactors and weapons.

Before joining the Department of Energy, she worked with Georgia Power Company as a system engineering specialist from 1987 to 1989. At Georgia Power, Ms. Roberson focused on maintenance, testing, upgrades and performance reliability of electrical and mechanical plant systems and equipment. She has extensive experience in nuclear reactor operations and successfully completed the testing requirements for reactor operations with E. I. DuPont in 1982. Later with DuPont she trained nuclear reactor operators and supervisors in both nuclear and field operations. Before leaving DuPont in 1987 Ms. Roberson worked as a nuclear reactor operations manager at several sites.

From 1977 to 1980, Ms. Roberson completed work assignments as a student engineer for Westinghouse at the Clinch River Breeder Reactor in Oak Ridge, Tennessee and the Nuclear Center in Monroeville, Pennsylvania. Ms. Roberson received a B.S. in Nuclear Engineering from the University of Tennessee in Knoxville, Tennessee.

DOCUMENTS SUBMITTED FOR THE RECORD

MARCH 24, 2015

DNFSB ACTION PLAN FOR ORGANIZATIONAL CULTURE CHANGE

Goal Area 1:	Board cohesion and ability to act as a unified body
Outcome:	The Board will develop and employ strategies to act as a unified body.
Action Item	All DNFSB Board Members are working with an Executive Coach on an ongoing basis to develop strategies to strengthen the unity and effective organizational culture of the Board as a working unit.
Action Item	The Board is reviewing the current Board Procedures to determine their effectiveness and efficiency and will be updating the procedures, as needed. An update is expected by the end of June 2015.

Goal Area 2:	Strategic Communications
Outcome:	DNFSB Offices and the Agency-as-a-whole will increase the number and quality of communication methods.
Action Item	All DNFSB Executives and Board Members are working with an Executive Coach on an ongoing basis to develop better communication techniques, both individually and as a group.
Action Item	The Board Members are holding regular Agency-wide staff meetings with increased opportunities for employee feedback and participation (including presentations by the Offices to improve Agency-wide understanding and appreciation of the individual roles of each Office). These meetings are being held on an ongoing basis every 30 to 45 days.
Action Item	The Office of the Technical Direction (OTD), Office of the General Manager (OGM), and Office of the General Counsel (OGC) organizations are holding regular All-Office staff meetings and Group/Division staff meetings with increased opportunities for employee feedback and participation. These meetings are being held on ongoing weekly and monthly bases.

Goal Area 3:	Expanded Leadership and management competency
Outcome:	90% of all DNFSB Managers and Executives will attend at least one training course by June, 2016, focused on increasing their leadership or management competencies.
Action Item	All DNFSB Executives and Board Members now have access on an ongoing basis to an Executive Coach who is helping them both individually and as a group to enhance their leadership abilities and effectiveness.
Action Item	To address the need to strengthen the use of teams at the DNFSB, the Agency plans to contract with a subject matter expert by December, 2015, to hold an Agency-wide information session aimed at enhancing the leadership, accountability, and team building abilities of employees at all levels of the organization. This is a proactive step to cultivate a team-oriented culture at the Agency.

Action Item	To address the need for succession planning, the DNFSB is expanding opportunities for non-supervisors to learn and expand leadership skills and abilities through professional development opportunities (e.g. Government program). This is a proactive step to start cultivating the Agency's future leaders, which began in 2014 and is ongoing.
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Goal Area 4:	Technical and Non-technical competency and continuity
Outcome:	To address skill gaps in needed Technical and Non-technical Competencies; the DNFSB will increase the number of Employees with established Individual Development Plans (IDPs) and at least 80% of all Agency employees will participate in a Professional Development Activity during FY 2015.
Action Item	Based on the need for identified Technical Competencies; the OTD is establishing Agency-specific development opportunities and discipline-specific paths for the Technical Staff that allow for the enhanced strengthening and tracking of technical proficiencies and requirements. Additionally, to increase accountability, DNFSB has included a performance goal of increasing the use of Employee IDPs in all Executive Performance Plans. These actions are planned to be in place by the end of CY 2015.
Action Item	Based on the need for identified Non-technical Competencies; the DNFSB is finalizing generic competencies needed for Technical Staff positions. Once finalized these competencies will be used in recruitment and professional development decisions. The new competencies are planned to be in place by the end of CY 2015.
Action Item	The DNFSB has developed an intranet web-page for its Board Members, Executives, and Managers to share real-time information important enhancing management competencies the DNFSB's leadership (recruitment, conduct and discipline tools, employee development opportunities, etc.).
Action Item	To enhance our ability to address skill gaps, the DNFSB has purchased and implemented an improved Learning Management System (LMS) that gives all Agency employees access to over 1500 professional training opportunities and allows for the accurate tracking of the professional development of each employee. Additionally to ensure increased accountability, the OTD, OGC, and OGM Offices are tracking and reporting the number and types of professional development activities for their staffs using the new LMS.

Goal Area 5:	Utilization of awards, recognition, and incentives to motivate and engage staff
Outcome:	The DNFSB will take opportunities to recognize Agency employees using Peer, Division-Level, Office-Level, and Agency-Level Recognition. Additionally, Supervisors are expected to meet established Employee Performance Management Deadlines.
Action Item	The OTD has established an informal recognition program at the Office-Level. For example, the "Safety Pin" award goes to deserving technical staff members. This is ongoing action.
Action Item	The OGM is providing Agency-wide information sessions on the types of recognition awards available to Agency employees. These sessions will enhance employee knowledge of the types of awards available, the criteria used for each, and which recognition type is most appropriate to use in a given situation. This action is planned to be completed by the end of FY 2015.
Action Item	The OGM is updating the DNFSB's Awards and Recognition policy and will provide opportunities for feedback and input from all organizational levels before finalizing the final product. The new policy will focus on expanding the opportunities for appropriate and valued recognition of Agency employees. This action is planned to be completed by the end of CY 2015.
Action Item	To enhance accountability in the timeliness of Employee Performance feedback; the DNFSB will track and record the percentage of established Performance Management deadlines met for each Supervisor on an ongoing basis.

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

MARCH 24, 2015

QUESTIONS SUBMITTED BY MR. ROGERS

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?

General KLOTZ. The B61-12 is in Phase 6.3 (Development Engineering). The B61-12 Life Extension Program (LEP) completed more than 20 B61-12 LEP system-level joint, ground, and aircraft integration tests using functional developmental hardware. The first integration B61-12 LEP bomb assembly and tail kit assembly test was completed with aircraft platform interfaces, and the B61-12 will complete the first joint flight test in 2015. The primary future milestones will be to obtain Phase 6.4 (Production Engineering) approval in FY 2016; to obtain Phase 6.5 (First Production Unit) approval in FY 2019; and to complete the first production unit no later than March 2020. The B61-12 LEP is on schedule and within budget for a first production unit in FY 2020. The W76-1 is in Phase 6.6 (Full Scale Production). Last year, the W76-1 program achieved a major milestone by completing 50 percent of the planned warhead production. Our primary objectives in FY 2015, which are progressing as planned, are to: achieve annual refurbished warhead production rates; deliver refurbished warheads on schedule to the Navy for deployment; and produce and deliver joint test assemblies (JTA) for surveillance flight tests. In fact, NNSA has been successful in already completing half of the total planned warhead delivery quantities to the Navy for the year within the first third of the fiscal year. We are currently on schedule to complete the remaining FY 2015 warhead production and deliveries to the Navy, which should be accomplished within our current funding allocations. If the requested funding is received, we are confident the program can remain on schedule for completion of production in FY 2019.

Mr. ROGERS. What are the major risks to these programs executing successfully? Are they technical? Or are they in getting the funding needed to execute?

General KLOTZ. The major risks to successful execution of W76-1 LEP production and B61-12 LEP engineering development are a combination of technical and funding risks which adversely affect the execution of warhead production and delivery schedules. In addition, other risks of primary concern to the W76-1 LEP are single-point failures associated with aging infrastructure (facilities and production equipment) within the nuclear weapons complex. We continue to reduce these risks by replacing aging infrastructure and by maintaining margin to delivery requirements. Funding requested for these two programs in FY 2016 FYNRP continues their current progress.

Mr. ROGERS. General Klotz, are you confident the uranium facility in Tennessee and the plutonium facility in New Mexico will each be successfully built on the timelines and budgets NNSA has laid out in the FY16 budget request? Can you assure this committee that these critical facilities will be built on-time and on-schedule?

General KLOTZ. NNSA is confident that we will successfully deliver CMRR and UPF after we complete our designs and establish performance baselines for these projects. Over the past four years, NNSA has focused on putting the right policies, principles, people, processes, procedures, and partnerships in place to implement the Office of Management and Budget's (OMB) Circular A-11 for Capital Acquisition Projects, Department of Energy Order 413.3B on project management and the Secretary's January 2015 enhanced project management policies. In 2013, GAO narrowed the focus of its High Risk list for NNSA to contracts and projects with a Total Project Cost greater than \$750 million as a result of the improvements NNSA is making in its contract and project management. NNSA is confident that the same policies and processes are scalable to the Major System Acquisition projects, such as CMRR and UPF.

On both projects, NNSA is in the process of developing a high quality credible estimates utilizing NNSA's policies and procedures and GAO's best practices. Once these complex first-of-a-kind nuclear projects achieve 90% design maturity, NNSA will establish cost and schedule baselines that we are confident we can achieve.

Mr. ROGERS. What are the major risks to successfully completing these projects?

General KLOTZ. Major risks to completion are:

- Escalation on commodities and equipment procurements;
- Inability to attract and retain nuclear qualified workers at assumed labor rates with the possible resurgence of industrial and nuclear construction;
- Availability of vendors qualified to produce materials and equipment to meet current nuclear construction standards (NQA-1);
- Changes to project requirements, codes, and standards;
- Delays in authorizations to start construction activities consistent with the proposed execution approach.

Mr. ROGERS. What happens if NNSA does not successfully complete these projects on the timelines laid out? What risks to safety and to NNSA's mission does this incur?

General KLOTZ. The UPF project in Tennessee is vital to modernization efforts at Y-12, allowing the NNSA to cease enriched uranium (EU) programmatic operations in Building 9212 no later than FY 2025. The NNSA is committed to ceasing these operations and is executing a strategy to deliver the critical UPF project while making additional program investments at the Y-12 Plant. These additional program investments allow the most hazardous operations in Building 9212 to be stopped prior to FY 2025, reducing the safety risks and program risks immediately upon doing so. Failure to deliver the UPF project by FY 2025 would result in a major delay in ceasing casting, special oxide production and salvage and accountability operations from Building 9212.

The execution of Radiological Laboratory Utility Office Building (RLUOB) Equipment Installation Phase 2 (REI2) and PF-4 Equipment Installation (PEI) is critical to maintaining continuity in our analytical chemistry (AC) and materials characterization (MC) capabilities. Failure to complete these activities on the projected schedule may impact our ability to cease programmatic operations in the Chemistry and Metallurgy Research (CMR) facility in 2019, and would likely impact our ability to provide the AC and MC capabilities needed to support pit production and other plutonium activities at Los Alamos National Laboratory.

Mr. ROGERS. General Klotz, do you believe your Defense Nuclear Nonproliferation programs align with the highest nuclear risks around the world? How do you prioritize NNSA's nonproliferation funding and direct it to the highest priority risks? Do you rely on intelligence community assessments of those risks?

General KLOTZ. Previously, each program office under the Defense Nuclear Nonproliferation (DNN) appropriation has applied rigorous internal risk assessment and prioritization approaches (including Intelligence Community assessments) to inform, develop, and provide the foundation for its fiscal year funding request. Although significant program-level coordination continues, the realignment of the Nuclear Counterterrorism and Incident Response (NCTIR) Program under the DNN appropriation, the reorganization of the Office of Defense Nuclear Nonproliferation, and the standup of NNSA's new Cost Estimating and Program Evaluation Office will now provide NNSA with a more integrated structure for program planning, budgeting, and evaluation as well as cross-program prioritization.

NNSA participates in whole-of-government policy and program coordination processes to ensure that NNSA activities are aligned and integrated with broad U.S. national priorities and capabilities. NNSA, working particularly with the Departments of State and Defense, has been central to U.S. efforts to develop and implement domestic and international programs and strategies to meet the enduring and evolving challenges to the global nuclear security environment.

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?

General KLOTZ. The current cyber defense model deployed by NNSA Headquarters, laboratories and plants has provided the necessary protection of NNSA information and information assets without any major compromises to date. However, it is important to note that with the increase in the number of threats and threat actors to the Nuclear Security Enterprise the current model will not remain effective or efficient without changes to the protection capabilities currently in place. These changes not only include replacement, upgrades, and/or enhancement to the technical infrastructure, but also an increase in the number, type, and skill level of the personnel required to protect these environments.

We use a risk-based approach to evaluate tools/program/software/hardware and their potential impact to our security environment. This security approach implements a defense-in-depth strategy to deter, detect, respond, and recover. These tools include firewalls, malware detection, intrusion prevention systems, and anti-virus systems on desktop workstations; custom tools and applications; and Commercial Off-the-Shelf (COTS) products within DOE/NNSA that were developed by the plants

and labs across the Nuclear Security Enterprise (NSE). We constantly evaluate new tools that can enhance our current capabilities. The current threat environment requires our cyber defenses to be effective 100% of the time while our adversaries only have to succeed once to inflict major harm to our systems and networks. I am confident that our current cyber defense program is deterring the threats we face today, and we will implement the tools necessary to maintain security as threats evolve.

Mr. ROGERS. Are NNSA's management and operating contractors able to meet their requirements on cybersecurity and counterintelligence?

General KLOTZ. Management and operating (M&O) contractors implement the current Risk Management Framework (RMF) approach. Implementation of the RMF is a signed agreement between the M&O Director and the NNSA Field Office Manager, regarding how the site will deploy cyber defenses to protect the information and information assets within the funding model for the site. Under the current Risk Management Framework, the security framework is signed off on by the federal site lead for cybersecurity. Once the federal lead has signed off on the framework the M&O has the authority to operate the system within the standards of the framework. If the M&O is required to implement a standard which is not within the current agreement, the M&O must go back to the federal lead for agreement before implementation of the new standard or requirement.

Mr. ROGERS. Please update us on the status of the Waste Isolation Pilot Plant in New Mexico subsequent to the events early last year that caused a radiation release and shutdown of the facility's underground operations. How long do you expect the shutdown to last?

General KLOTZ and Mr. WHITNEY. The Department's target for initial resumption of waste emplacement at WIPP is the first quarter of calendar year 2016. The safety envelope for the facility continues to be analyzed and DOE will only resume operations when it is safe to do so.

Mr. ROGERS. How is the shutdown at WIPP sending ripple effects across the NNSA and DOE-EM complex?

General KLOTZ and Mr. WHITNEY. The current plan for recovery of the WIPP is to begin initial disposal operation in 2016 and resume full operations in the 2018 timeframe, but DOE will only resume operations when it is safe to do so. Active transuranic (TRU) waste generators other than Los Alamos National Laboratory (Idaho, Oak Ridge and Argonne National Laboratory) are continuing characterization and certification activities and are providing interim storage of TRU waste for eventual shipment to the Waste Isolation Pilot Plant (WIPP). TRU waste generator sites have storage capacity for certified waste ready for WIPP disposal through at least fiscal year 2016.

Mr. ROGERS. How is NNSA holding the people and organizations responsible for this incident accountable?

General KLOTZ and Mr. WHITNEY. As required, the Office of Environmental Management, NNSA, Carlsbad Field Office, Nuclear Waste Partnership, LLC (the WIPP management and operations contractor), and LANL will develop corrective actions to address the issues identified in the accident investigation report for the WIPP radiological event. Based on information identified to date, the following actions have been taken to ensure accountability for the event.

- Since the WIPP event, LANL has performed extensive scientific reviews, changed leadership in the Environmental Programs Directorate, completed an external root cause analysis and is currently performing an extent of condition review. LANL will evaluate its ongoing recovery efforts and will ensure corrective actions to address issues in the report are integrated with its overall recovery efforts.
- The November 14, 2014 EM Transition Plan documented a decision to remove EM-funded program work from the LANL contract and require future legacy environmental cleanup work at Los Alamos performed by a separately competed EM contract.
- The November 14, 2014 EM Transition Plan for Los Alamos also focuses on streamlining and clarifying roles and responsibilities between EM and NNSA. Consistent with this plan, the EM Los Alamos Field Office was stood up on March 22, 2014 to manage the EM-funded program work.
- Enhanced oversight by the Carlsbad Field Office and EM HQ will occur prior to the resumption of repackaging of TRU waste at LANL, and as the normal course of business at LANL and other sites in the future, e.g., the Certification Program will focus additional oversight efforts on understanding and validating upstream waste processing. Enhanced DOE Order 435.1, Radioactive Waste Management oversight is being planned.
- NNSA Los Alamos Field Office has hired or is in the process of hiring key staff positions to enhance its oversight capability. Such positions include the Senior

Safety Technical Advisor (on board as of March 8, 2015), an Assistant Manager for Operations, a Deputy Assistant Manager for Operations, a temporary Deputy Manager with a strong safety background (on board in a few weeks), Safety Basis Specialists and Facility Representatives.

- NWP finalized its contractor recovery team in the spring of 2014, shortly after the event. Changes included a new Project Manager and Deputy Project Manager (who also serves as the Recovery Manager). Other new managers hired by NWP: Deputy Recovery Manager, Environmental Safety and Health manager, nuclear safety leader, maintenance manager, radiological manager, emergency manager, procedures and training manager, deputy operations manager, and deputy engineering manager.

Mr. ROGERS. General Klotz, what are your top priorities for Naval Reactors (NR) for FY16?

General KLOTZ. All of Naval Reactors' 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 FY16, this entails effective oversight of the operation and maintenance of 96 reactors in 71 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 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 FY16, 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 FY19 GFE procurement. The S8G Prototype Refueling will continue construction of the Radiological Work and Storage Building and preparations for the FY18 refueling. The Spent Fuel Handling Recapitalization Project will continue required development, fuel design, and will issue an Environmental Impact Statement.

Mr. ROGERS. Is NR's budget aligned with that of the larger Navy?

General KLOTZ. Yes. We work closely every day with our partners in the Navy to ensure that we are aligned with the mission, performance requirements and schedules.

Mr. ROGERS. What happens if this program gets out of alignment with Navy programs like the OHIO-class Replacement program?

General KLOTZ. Naval Reactors' 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 FY19 to support a construction start in FY21 and ship delivery in FY28. 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.

Mr. ROGERS. What has been the effect of the budget cuts Naval Reactors has received over the past four or five years?

General KLOTZ. Over the past six years, Congress reduced Naval Reactors' funding by more than \$600M below the Budget requests. These reduced funding levels have substantially impacted plans to recapitalize the spent fuel handling infrastructure, advanced technology development, and maintenance on prototype reactors, facilities and infrastructure. These functional areas are foundational to the Program and support Naval Reactors' ability to sustain the current nuclear-powered fleet and develop the future fleet. The following are specific examples of these impacts:

- Recapitalization of the naval nuclear spent fuel handling capability has been delayed by over five years. This delay has increased the project cost by more than \$400M. As well, to manage the delay without affecting aircraft carrier schedules, the Navy will have to procure additional, otherwise unnecessary spent fuel shipping containers at a cost of approximately \$500M. Because of the aging condition of the current facility, these delays also increase the risk that the current capabilities fail and we are unable to support the Navy's refueling schedule or conduct the research required to resolve important technical issues in the operating fleet. Therefore, additional investment has been required to maintain these aging facilities.
- Advanced technology development has been drastically reduced. Today, it is possible to design a life-of-ship core for the OHIO-Class Replacement, saving the Nation over \$40B, because of technology development efforts conducted over the last four decades. Other leaps in stealth and operational technologies give our ships an enormous advantage over our adversaries. With current funding levels, there will be insufficient reactor technology developed in time for use in the next classification of nuclear powered ships to make advances such as this achieved for the OHIO-Class Replacement. Therefore, this work must be restored in order to maintain tactical superiority over our adversaries of the future and to attract and maintain the crucial engineering and scientific talent needed to successfully complete the mission at current levels.
- Maintenance and replacement of the Program's aging laboratory facilities and infrastructure has been delayed. Many of these facilities date from the dawn of the atomic age and are vital to support the nuclear-powered Fleet. In total, over 40 General Plant Projects and 4 Major Construction Projects have been delayed or canceled. In addition, funding reductions have resulted in the deferral of critical infrastructure maintenance resulting in significant failures and restriction of Naval Reactors' ability to manage the impact of emergent work as the existing infrastructure continues to age. Examples include:
 - Bettis High Power Transformer (Failed in 2014)
 - Bettis Acoustic Testing Generator (Failures over 2009 to 2011)
 - NRF Storm Drain System (Failed in 2014)
 - NRF Prototype Facilities (Roof failed in 2014)
 - KAPL Water Main (Repeated Failures since 2004, approx. 3–4 per year)
 - Bettis Spring Water Intercept System (Failed in 2011 and 2013)
 - Bettis Materials Evaluation Laboratory (Legacy Radioactive Contamination)

Mr. ROGERS. General Klotz, what happens to NNSA's programs if you are hit with sequestration in FY16? Will you still be able to deliver on DOD's top priorities, including life extension programs, nuclear infrastructure modernization, and Naval Reactors programs?

General KLOTZ. The 2016 Budget proposes to reverse sequestration, paid for with a balanced mix of commonsense spending cuts and tax loophole closers, while also proposing additional deficit reduction that would put debt on a downward path as a share of the economy. The President has made clear that he will not accept a budget that reverses our progress by locking in sequestration going forward. Locking in sequestration would bring real defense and non-defense funding to the lowest levels in a decade. It would damage our national security, ultimately resulting in a military that is too small and equipment that is too old to fully implement the defense strategy. It would also damage our economy, preventing us from making pro-growth investments. As the President has stated, he will not accept a budget that severs the vital link between our national and economic security, both of which are important to the Nation's safety, international standing, and long-term prosperity.

Mr. ROGERS. In FY13, DOD was given the chance to protect certain programs from sequestration. It chose to protect ongoing operations in Central Command and sustainment and operation of U.S. nuclear forces. Given a choice under a potential sequestration in FY16, as Administrator what NNSA programs would you choose to protect?

General KLOTZ. The 2016 Budget proposes to reverse sequestration, paid for with a balanced mix of commonsense spending cuts and tax loophole closers, while also proposing additional deficit reduction that would put debt on a downward path as a share of the economy. The President has made clear that he will not accept a budget that reverses our progress by locking in sequestration going forward. Locking in sequestration would bring real defense and non-defense funding to the lowest levels in a decade. It would damage our national security, ultimately resulting in a military that is too small and equipment that is too old to fully implement the defense strategy. It would also damage our economy, preventing us from making pro-growth investments. As the President has stated, he will not accept a budget

that severs the vital link between our national and economic security, both of which are important to the Nation's safety, international standing, and long-term prosperity.

Mr. ROGERS. General Klotz, this committee has focused on ensuring we get maximum value for every dollar. We've included language in several previous NDAA's encouraging NNSA to go find efficiencies and cost savings that we can apply directly to NNSA's mission. Specifically, what efficiencies are you striving for in FY15? What efficiencies are you proposing to chase in your FY16 budget request?

General KLOTZ. NNSA is continuously looking for ways to improve use of resources to support its missions. During the past few years, NNSA worked with DOE to streamline DOE orders and directives to eliminate duplication, incentivize cost savings in management and operating contracts, make use of contract vehicles that appropriately share cost risk between the government and the contractor, and encourage NNSA plants and laboratories to more efficiently use resources.

Together, NNSA and its NNSA's M&O contractors are committed to making the National Nuclear Security Enterprise a model for efficient business operations. Large scale efforts undertaken by NNSA recently to drive down operating costs include the relocation of the Kansas City Plant to a more modern facility, the competition of the Pantex and Y-12 plants as a combined contract, and more efficient approaches to replacement of aging uranium and plutonium facilities. The award of the combined Pantex and Y-12 plants resulted in immediate cost savings that will continue to save in fiscal year (FY) 2015 and beyond. For example, the government realized an immediate savings of roughly \$80 million in decreased award fee; money that was redirected to national security missions. Efficient business operations across the enterprise are critical to achieving the NNSA mission.

On November 20, 2014, NNSA initiated an annual efficiencies review as an internal tool to drive continuous improvement in managing infrastructure. NNSA laboratories, plants, and federal Field Office Managers were directed to identify specific plans to pursue efficiencies for the current fiscal year and record achievements from the previous one. NNSA also sought input on oversight and governance changes that could enhance productivity.

NNSA laboratories, plants, and federal Field Office Managers are in the process of sharing efficiency ideas from this effort and addressing suggestions from the labs and plants on changes NNSA can make to further efficiencies. NNSA also sponsored a day-long workshop with all of the NNSA labs, plants, and field offices at the end of May. The group will establish a framework of common definitions and best practices to enable an enterprise-wide approach which can be repeated year to year. NNSA is committed to continuous improvement and driving more efficient operations. The identified efficiencies for FY 2014 covered a broad range of business operations. These included reducing the costs of goods and services, making major mission operations such as those at the National Ignition Facility more efficient, better managing the growing costs of employee benefit programs, and reducing key subcontracting costs. Efficiencies of this type will be critical to meeting FY 2016 mission.

Finally, the FY 2014 budget request identified \$320 million in efficiencies that would be obtained in executing the FY 2014 budget, and Section 3114 of the FY 2014 NDAA directed the identification of about half, or \$139.5 million, in efficiencies during FY 2014. As reported in its May 214 Notification of NNSA Efficiencies, NNSA identified \$80 million of these efficiencies.

Mr. ROGERS. General Klotz, one of the big recommendations coming out of the Y-12 security incident in 2012 was that roles and responsibilities for security were not clear at NNSA or its contractors. What specific action have you taken since taking the helm a year ago to clarify roles, responsibilities, authority, and accountability for each person at NNSA? Have you updated any NNSA directives? Spelled them out in policy guidance?

General KLOTZ. Prior to my appointment, my predecessor issued a memorandum (dated 5 December, 2014) which made fundamental changes to the Office of the Associate Administrator for Defense Nuclear Security/Chief, Defense Nuclear Security (NA-70), by moving and consolidating the lines of operational authority, accountability, and line management. That reorganization transferred to NA-70 the mission and functions of security operations from NA-00-30 as well as the budget activity from NA-00-50 (within the Office of the Associate Administrator for Infrastructure and Operations). We are currently in the process of publishing a supplemental directive that will further delineate responsibilities for oversight of our security programs.

During my first year as NNSA Administrator, I have made it my priority to select and staff key senior leadership positions with seasoned leaders, possessing extensive nuclear security experience. I've firmed up our Office of Defense Nuclear Security

senior leadership by hiring career security managers, with a proven track record in leading organizations to success, for the following positions: Chief of Defense Nuclear Security (CDNS), Deputy CDNS and Director of Security Operations and Programmatic Planning.

This full complement of Senior Executive Service managers provides much needed continuity and stability to our Enterprise Field Offices in the area of security. The addition of my Principal Deputy Administrator in July 2014, is also having a positive impact on security decisions as we move forward.

A new M&O contractor has been selected since the 2012 Y-12 security incident. Consolidated Nuclear Security (CNS) began operating our Pantex and Y-12 sites on 1 July 2014. They are bringing a fresh perspective to site operations, which include all aspects of security operations. It also places all security operations under one contract. That was not the case in 2012 when the incident occurred. Shortly after CNS began operations, the DOE Office of Enterprise Assessments conducted an assessment at Y-12. The report regarding the inspection, conducted in August of 2014, states: "significant progress has been made in correcting many of the deficiencies identified during the 2012 inspection."

Based on the inspection results, the DOE Departmental Internal Control and Audit Review Council, comprised of senior members of DOE leadership, recommended downgrading the Y-12 security issue from a material weakness to a reportable condition. The CDNS will continue to monitor the implementation of corrective actions at the site until they are closed.

Lastly, our Federal team has taken a more direct and active role in contractor oversight. Several teams comprised of subject matter experts from our Headquarters and across NNSA have provided assessments of Y-12 security operations. Examples include one team focused on nuisance and false alarm analysis and a team that recently assessed physical security system maintenance, operations and management. These assessments resulted in recommendations focused on continuously improving operations at Y-12.

Mr. ROGERS. General Klotz, DNFSB sent you a recommendation on concerns with DOE/NNSA's emergency management and response. What is your organization doing to improve in this area?

General KLOTZ. The Department of Energy (DOE) is committed to achieving an end state of an improved Emergency Management Enterprise, and more specifically, improving emergency preparedness and emergency response capabilities across its defense nuclear facilities. DOE/NNSA will implement actions to prioritize improvements related to the DNFSB report findings and DOE's self-assessed need for improvements. The Department has developed an Implementation Plan containing initiatives that address all three aspects of Readiness Assurance at defense nuclear facilities: improve the management and oversight process, improve the corrective actions process, and reinvigorate a reporting process that shares successes and opportunities with DOE leadership. In addition, the Department will revise and restructure its Emergency Management Order, DOE Order 151.1C, Comprehensive Emergency Management System. The restructured Order will bring ease of application and consistency to emergency management programs. It will also be flexible enough to provide comprehensive guidance for users to respond to incidents ranging from local, single facility events, to multiple facility regional events.

In addition to developing the Implementation Plan, DOE/NNSA has been working to improve emergency management. This included required evaluation reviews of emergency response for severe accidents and/or events that could have widespread impact at all DOE facilities, including defense nuclear facilities. These reviews have resulted in activities to expand plans for severe event scenarios at defense nuclear facilities. Also, additional training for responders was conducted at many of the defense nuclear facilities and a series of discussion-based tabletop exercises was performed to verify severe event procedures, interfaces and resources for multi-facility events, offsite asset resources and priorities, and critical decision-making. This training was followed by full-scale exercises at ten defense nuclear facilities, to formally test their capabilities for responding to severe events.

Other examples of emergency management program improvements across the defense nuclear complex included:

Severe event related improvements

- Sandia—Conducted a Self-Assessment of Severe Natural Phenomena Events (NPE) that identified issues related to habitability and back-up power; corrective actions were developed and are being implemented and tracked.
- Livermore—Improved the habitability of the site's Emergency Operations Center (EOC) with the replacement of four high-efficiency gas absorption (HEGA) filters.

- Livermore—Established a Lawrence Livermore National Laboratory (LLNL) Community Emergency Response Team (CERT) program to support its Emergency Response Organization (ERO) and the site population after a disaster/severe event.
- Nevada—Implemented fully functional primary and alternate facilities for both the Operations Command Center and the Emergency Operations Center.
- Idaho—Conducted a severe Natural Phenomena Event (NPE) exercise that identified issues related to habitability and back-up power; corrective actions were developed and are being implemented and monitored.

Training and drill improvements

- Sandia—Revised training procedures to include annual performance testing to demonstrate competency. Conducted self-assessment and identified an issue in training record documentation.
- Nevada—Drill and Exercise Program is integrated with the issues management processes and incorporates exercise After Action Report findings into an issue, which is assigned to a Responsible Manager.

Exercise improvements

- Sandia—Severe event exercise scheduled for July 2015 to verify corrective actions implemented from FY 2014 Severe Event Exercise are effective.
- Livermore—Conducted four exercises in FY 2014 in response to a NPE (e.g., earthquake) to demonstrate ability to respond to simultaneous events at multiple hazardous facilities.
- SRS—SRNS-Tritium facility developed and conducted a tornado drill with all of the shifts affecting multiple facilities and all non-essential personnel.
- West Valley Demonstration Project—Conducted an exercise to test and validate the effectiveness of the Emergency Response Organization, Technical Support Center, Incident Command, Joint Information Center and field support.

Readiness assurance improvements

- Sandia—Conducted Self-Assessments to identify issues with Corrective Action implementation.
- Livermore—Established an Accountability Disaster Call Center to improve communications with the field during a major earthquake or other disaster event and to provide prioritized damage assessment information to the Fire Branch Disaster Dispatch Center.
- Savannah River Site—DOE issued a formal letter to SRNS directing a comprehensive, independent review of all of the emergency management elements to address concern about a decline in the emergency management program.
- Nevada—Emergency Management program has qualified and experienced staff in developing/facilitating Root Cause Analysis to address the root issue and the extent of condition.
- Emergency Operations is developing a process to track findings/deficiencies identified during site assessments. Each finding will have a Corrective Action Plan (CAP) and will be tracked to closure. Over time, the CAPs will produce trending data that will indicate where the Office of Environmental Management should shift the focus of site assessments and surveys. EM will periodically re-examine the effectiveness of closed CAPs after implementation of the corrective action(s).
- Sandia—Identified an issue that resources are not adequate to implement an effective readiness assurance program, then submitted and received approval for a Full Time Equivalent (FTE)/Funding request for a Program Administration Team Lead.

DOE Headquarters undertook several initiatives over the past year to address emergency management issues across its full range of responsibilities, which also enhance our capabilities to respond to emergencies at defense nuclear facilities.

DOE established an Energy Incident Management Council (EIMC), chaired by the Deputy Secretary, to increase cooperation and coordination across the Department to prepare for, mitigate, respond to, and recover from emergencies. DOE's ongoing project to revitalize the Headquarters Emergency Management Team (EMT includes rewriting the HQ Emergency Plan and implementing procedures; conducting job task analyses and developing position specific training for EMT members; and re-training EMT members on these new procedures. Plans for testing this expanded capability include frequent testing of the EMT in response to a variety of emergency response scenarios such as:

- nuclear weapons accident,
- radiological release,
- hazardous chemical spill, and
- severe event damage to DOE defense nuclear facilities.

DOE's working relationship with its Federal interagency partners was improved during 2014 through a series of exercises, most notably the annual multi-agency nuclear weapons accident exercise, 2014 NUWAIX, for which DOE was the lead planning agency.

Mr. ROGERS. General Klotz, I and several members of this subcommittee joined you and Admiral Richardson on a trip to the Naval Reactors Facility in Idaho last month. What goes on at this facility and why does the budget request include funding for recapitalization of the Spent Fuel Handling facility out there?

General KLOTZ. The Expanded Core Facility (ECF) at the Naval Reactors Facility in Idaho is the only facility in the country capable of receiving, examining and packaging spent Naval nuclear fuel.

The budget request includes funding the Spent Fuel Handling Recapitalization Project (SFHP) at the Naval Reactors Facility which will provide a new facility to replace the more than 55-year old ECF for receipt, preparation, and packaging of naval spent nuclear fuel for secure dry storage. Although the Expanded Core Facility continues to be maintained and operated in a safe and environmentally responsible manner, it no longer efficiently supports the nuclear fleet. Further, increasing sustainment efforts and required infrastructure upgrades pose a substantial risk to Expanded Core Facility operations and production workflow, thereby challenging Naval Reactors' ability to support the Navy's nuclear-powered fleet refueling and defueling schedules. An interruption to these refueling and defueling schedules would adversely affect the operational availability of the nuclear fleet. If this interruption were to extend over long periods, the ability to sustain fleet operations would be impacted, ultimately resulting in significant decrement to the Navy's responsiveness and agility to fulfill military missions worldwide.

Mr. ROGERS. Absent this funding, will costs increase in the long-term for either NNSA or the Navy?

General KLOTZ. The main risk of further cost increases to the Spent Fuel Handling Recapitalization Project is a lack of funding stability. One could expect cost increases if the project is not funded sufficiently to meet the current schedule. Further delays to the project would also incur costs for additional spent fuel shipping containers that would be borne by the Navy.

The original Spent Fuel Handling Recapitalization Project plan included a project duration of 10 years and a total project cost estimate of \$1.249B. Due to funding restrictions since FY12, the project has been extended nearly six years, resulting in a project cost increase of approximately \$400M. The increased cost resulted from escalation due to these delays and inefficiencies and rework associated with the unstable funding environment, which has required de-staffing and re-staffing of the project multiple times. Further, the estimated total project cost of the Spent Fuel Handling Recapitalization Project does not account for the additional M-290 shipping containers that the Navy will need to procure for temporary storage of naval spent nuclear fuel until the new spent fuel handling facility becomes operational. Procurement of these additional shipping containers is only necessary because the project has been delayed, as discussed above. To support aircraft carrier refueling schedules, the Navy will need to procure these containers at a total cost of approximately \$500M.

Mr. ROGERS. General Klotz, how is NNSA supporting next year's Nuclear Security Summit in Chicago? What initiatives are being proposed for discussion at the Summit and what is NNSA doing to advance them?

General KLOTZ. NNSA is carrying out activities across many of its program areas in support of the Nuclear Security Summit (NSS) process. NNSA has designated a Senior Coordinator who acts as a liaison for the Department of Energy (DOE) to the White House on all Summit issues. The coordinator facilitates DOE input to the NSS planning process, including in drafting NSS Action Plans to sustain the work of Summit participants through institutions and initiatives like the International Atomic Energy Agency, United Nations, Interpol, the Global Initiative to Combat Nuclear Terrorism, and the G7 Global Partnership.

In advance of the 2016 NSS, NNSA also plays a leading role in the development of a range of specific country and regional plans. These action plans will propose how to accelerate the completion of existing Summit deliverables and on how to identify specific opportunities for new Summit deliverables, including actions we can take bi- or multilaterally to secure, reduce and eliminate nuclear and radiological materials. NNSA will continue to implement and complete commitments from the 2010, 2012, and 2014 Summits, including minimizing highly enriched uranium and plutonium, detecting nuclear smuggling, strengthening strategic trade controls, and increasing security of nuclear and radiological materials.

Mr. ROGERS. General Klotz, please provide us a description of accountability actions taken towards contractors and Federal employees with responsibility for major

recent failures, such as the UPF design, the WIPP event, and the Y-12 security incident. How were they penalized? Were any terminated from employment? Did any of these contractors or Federal employees receive bonuses subsequent to those failures?

General KLOTZ. [NNSA has declined to provide a written response.]

Mr. ROGERS. General Klotz, Naval Reactors has taken significant funding reductions to its technical base in recent years. What is the technical base, why is it important, and what are the impacts of cuts to NR's base operations?

General KLOTZ. The Base solely supports Naval Reactors' responsibilities that allows for a safe and reliable operation of the nuclear fleet. It contains Naval Reactors Operations and Infrastructure (NOI), Naval Reactors Development (NRD), and Program Direction (PD). It includes resources to meet the goals and operational demands of today's fleet, to develop tomorrow's fleet, to support environmental stewardship, and to procure and construct the required tools and infrastructure that facilitate Naval Reactors' mission. Naval Reactors executes these responsibilities by management and regulation of an enterprise that includes over 7,000 highly-skilled personnel at Department of Energy laboratories and prime contractors, a specialized domestic nuclear power industrial base of 28 principal suppliers, 110 secondary suppliers with about 25,000 personnel, more than 64,000 workers at the nation's six nuclear-capable shipyards, and over 16,000 trained nuclear operators. This team collaborates with experts at other DOE National laboratories where there are opportunities for mutual gain. No other single organization in the U.S. currently integrates the research, design, construction, operation, life-cycle support, and disposal functions to successfully deliver an enduring nuclear power capability.

The highest priority for Naval Reactors is uncompromising and timely support for safe nuclear fleet operation. In FY 2016, \$935 million funds the Base and supports the 96 operating reactors at sea on ships and at our training and research sites. The talented men and women, along with the equipment and facilities upon which they depend, stand ready and are called upon 24 hours per day, 365 days per year to advance the mission and respond to emergent fleet needs for assistance. The teams at Naval Reactors' four Program sites—the Bettis Laboratory in Pittsburgh, the Knolls Laboratory and Kesselring Site in greater Albany, and our spent nuclear fuel facilities in Idaho—perform the research and development, analysis, engineering and testing needed to support today's fleet and to develop future nuclear-powered warships. The teams in the Base provide tremendous value to the nation. Among the many examples of the work they do includes:

- Adding more than 21 years of operational life across 14 LOS ANGELES-Class attack submarines.
- Avoiding 14 years of lost aircraft carrier operational time and ensuring no impact to the deployment plan.

Over the past six years, Congress reduced Naval Reactors' funding by more than \$600M. These reduced funding levels have substantially impacted plans to recapitalize the spent fuel handling infrastructure, advanced technology development, and maintenance on prototype reactors, facilities and infrastructure. These functional areas are foundational to the Program and support Naval Reactors' ability to sustain the current nuclear-powered fleet and develop the future fleet.

Mr. ROGERS. Mr. Whitney, please explain the Uranium Enrichment Decontamination and Decommissioning (D&D) Fund. Why is \$472 million being requested for the Federal Government's portion of this fund when the reauthorization for collection of the nuclear power industry's portion has not been passed?

Mr. WHITNEY. The Energy Policy Act of 1992 (EPAct) established the Uranium Enrichment (UE) D&D fund to provide resources for the cleanup activities. Under the EPAct, both the Government and domestic private utilities were required to contribute to the fund, with the Government providing roughly two thirds of the funding and the utilities providing the remaining one third.

Both the Government and private utilities have completed their contributions into the fund as required by the EPAct. However, as of the end of fiscal year (FY) 2014, the total UE D&D cleanup costs are expected to exceed the balance of the fund by 2022 if no additional contributions are received. As such, the Administration is seeking reauthorization of both Government and utility contributions beginning in FY 2016.

Mr. ROGERS. Mr. Whitney, is EM on track to meet its regulatory and compliance agreements for FY15? What about for FY16 and beyond?

Mr. WHITNEY. We are on track to meet our FY15 and FY16 milestone commitments. Beyond FY16, the Department's ability to fulfill its milestone requirements is difficult to forecast as it is dependent upon the completion of pre-cursor activities and the assumptions upon which work plans are based.

To the extent milestones are delayed, DOE will follow the provisions in its clean-up agreements for making notifications and working with federal and State regulators regarding schedule adjustments if necessary.

Mr. ROGERS. Ms. Roberson, DNFSB sent a letter to DOE last year recommending improvements to DOE's emergency response programs. What are the specific concerns you outlined in that recommendation? What specific steps would DNFSB like to see taken by DOE to improve in this area?

Ms. ROBERSON. 1) The DNFSB (Defense Nuclear Facilities Safety Board) identified concerns with specific requirements in the Department of Energy's (DOE) emergency management directive as well as the implementation of the requirements at various DOE sites with defense nuclear facilities. Based on these concerns, the DNFSB believes that DOE has not comprehensively and consistently demonstrated its ability to adequately protect workers and the public in the event of an emergency. These concerns focus on DOE's role as a regulator.

2) The DNFSB identified the following specific deficiencies that we believe DOE needs to address:

a. Standardize and improve the DOE criteria and review approach to confirm that all sites with defense nuclear facilities:

- Have a robust emergency response infrastructure that is survivable, habitable, and maintained to function during emergencies, including severe events that can impact multiple facilities and potentially overwhelm emergency response resources.
- Have a training and drill program that ensures that emergency response personnel are fully competent in accordance with the expectations delineated in DOE's directive and associated guidance.
- Are conducting exercises that fully demonstrate their emergency response is capable of responding to scenarios that challenge existing capability, including response during severe events.
- Are identifying deficiencies with emergency preparedness and response, conducting causal analysis, developing and implementing effective corrective actions to address these deficiencies, and evaluating the effectiveness of the corrective actions.
- Have an effective Readiness Assurance Program consistent with DOE's requirements.

b. Update its emergency management directive (DOE Order 151.1C, Comprehensive Emergency Management System) to address:

- Severe events, including requirements that address hazards assessments and exercises, and "beyond design basis" operational and natural phenomena events.
- Reliability and habitability of emergency response facilities and support equipment.
- Criteria for training and drills, including requirements that address facility conduct of operations drill programs and the interface with emergency response organization team drills.
- Criteria for exercises to ensure that they are an adequate demonstration of proficiency.
- Vulnerabilities identified during independent assessments.

We received DOE's Implementation Plan for this Recommendation on April 24, 2015. Our staff is reviewing the Implementation Plan to determine the adequacy of DOE's proposed activities to address the deficiencies identified in the Recommendation. The staff was engaged with their DOE counterparts during the development of the plan and provided comments. During the execution of the Implementation Plan, the Board's staff will work closely with DOE to provide appropriate actionable suggestions regarding implementation of activities in the plan.

The technical supporting document for Recommendation 2014-1 identified examples of deficiencies with site-level emergency preparedness and response. These include:

"Some sites do not have a 5-year plan for exercises that involves all of the hazards and accidents at their facilities with EPHAs [Emergency Planning Hazards Assessment]. In addition, some sites do not exercise all of their facilities with EPHAs and all of their response elements on an annual basis." DOE Order 151.1C requires sites to demonstrate response capabilities by executing emergency exercises. In order to meet this requirement, sites such as Pantex and Sandia National Laboratories should be executing a variety of exercises to demonstrate response capability to the spectrum of possible hazards at each facility, as well as providing adequate training and drills to develop and maintain this capability.

"Planning and implementing recovery actions are typically not demonstrated in detail during the normal scope of annual emergency exercises at DOE sites [such as the Savannah River Site and the Waste Isolation Pilot Plant], or in follow-on ex-

ercises.” DOE Order 151.1C also requires sites to demonstrate recovery capability. The ability to conduct initial recovery actions, including how to map a transition from emergency to recovery to normal operations, should be practiced frequently enough that site leadership can effectively conduct this activity when real-life operational emergencies occur.

“ . . . [M]any of the emergency response facilities may not be habitable in the aftermath of a hazardous or radiological material release event, or survivable in the aftermath of a severe natural phenomena event. These facilities were not designed to survive an earthquake, and many do not have ventilation systems that will filter radiological and toxicological materials. Examples of such facilities include the Emergency Control Center (ECC), the Technical Support Center (TSC), and the fire house at Y-12; the EOC [Emergency Operations Center] at the Hanford Site; the EOC and alternate EOC, the Department Operations Centers, and the Emergency Communications Center at LLNL [Lawrence Livermore National Laboratory]; and the EOC and Central Monitoring Room at WIPP [Waste Isolation Pilot Plant].” DOE Order 151.1C does not include explicit requirements concerning emergency facility habitability; other agencies, such as the Nuclear Regulatory Commission, do provide such requirements. The DNFSB Recommendation identifies the need to update the directive to address this gap. “Members of the Board’s staff also observed problems with systems used to support emergency communications and notifications. For example, the staff observed problems with the systems used to notify workers and visitors about an emergency and protective actions that are to be taken, such as was observed recently at WIPP during the underground truck fire.” DOE Order 151.1C provides requirements for emergency notification systems at DOE sites, including notification to the site workers and off-site notification to the public. However, guidance to implement this requirement is deficient. Sites must develop clear criteria for when to continue operations when notification systems are degraded or failed, including compensatory measures that are tested and effective to ensure workers receive notification that an operational emergency is occurring and the necessary protective actions to take. Robust, survivable, and tested notification systems installed in and around facilities at sites such as the Waste Isolation Pilot Plant, the Savannah River Site, the Hanford Site, and Lawrence Livermore National Laboratory are a necessary first step to address this concern.

Mr. ROGERS. Ms. Roberson, is the DNFSB preparing an implementation plan to address the recommendations and corrective actions within the LMI study on DNFSB’s workforce and culture? When will this plan be complete?

Ms. ROBERSON. The DNFSB has prepared an informal action plan to address the recommendations and corrective actions within the LMI study. For example, all DNFSB executives and Board Members are working with an executive coach to develop better communication techniques and enhance leadership effectiveness. Regular staff meetings are being held at both the agency and office level to provide increased opportunities for employee feedback and participation. The full action plan for organizational culture change is attached.

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

In addition, the Nuclear Regulatory Commission Office of the Inspector General (OIG) recently completed a Culture Climate Survey of the DNFSB staff. The response rate exceeded 70%, and the OIG will be briefing the results to the DNFSB management and staff on May 21st. I anticipate additional actions will be planned as a result of that additional feedback.

Mr. ROGERS. Ms. Roberson, does DNFSB intend to review NNSA’s large list of deferred maintenance projects for safety risks? Would DNFSB be willing to provide NNSA its views on prioritizing this list with regards to safety risk?

Ms. ROBERSON. The DNFSB has evaluated deferred maintenance documentation and databases during site-specific maintenance reviews and generally found the management of safety risk to be acceptable. (NNSA’s list of deferred maintenance is housed in the Department of Energy’s Facilities Information Management System [FIMS].) The majority of the deferred maintenance had a relatively low impact on nuclear safety and was being worked as resource availability permitted. The management and operating contractors at each site commonly make it a high priority to minimize deferred preventive maintenance of safety class and safety significant structures, systems, and components (SSC) that are credited to perform safety-related functions in the Documented Safety Analyses for nuclear facilities. The DNFSB will continue to review maintenance programs at NNSA sites, including assessments of deferred maintenance, to ensure SSCs critical to preserving the safety of nuclear operations are appropriately managed.

It should be noted, however, that the overall NNSA deferred maintenance backlog of \$3.6B includes many non-defense nuclear facilities and associated infrastructure exceeding 60 years of service that have little or no bearing on the safety of 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 surpass corrective maintenance backlogs or deferred preventive maintenance on nuclear safety-related SSCs and processing equipment. Nevertheless, infrastructure risk in a non-defense nuclear facility can pose a nuclear safety risk under the right circumstances. For example, a major fire in a non-defense nuclear facility could threaten a nearby defense nuclear facility. In such a case, we would expect the credited fire suppression systems in the defense nuclear facility to provide for the adequate protection of the public and workers from radiological consequences. Clearly, though, it would be preferable to avoid a major fire in the first place.

To help prevent degradation of the nuclear facility safety posture, equipment owners or system engineers at the sites are typically expected to provide technical input during the decision process for deferring maintenance of safety SSCs. For example, if preventive maintenance activities for safety SSCs will exceed defined schedules, it is necessary to obtain a deferral evaluation and approval or make a determination of compensatory measures to be implemented.

DOE Order 430.1B, Real Property Asset Management, requires DOE/NNSA sites to annually use condition assessment data to determine and report the deferred maintenance information in FIMS. The site contractor must maintain FIMS data and records, which are DOE's corporate real property inventory database for all buildings and other structures and facilities. Although, it is expected to be difficult to evaluate comparative risk among the NNSA sites, the DNFSB has requested FIMS database information relevant to deferred maintenance at defense nuclear facilities. In addition to reviewing the FIMS data in an attempt to identify any potential safety risks related to deferred maintenance, the DNFSB will continue to execute site-specific maintenance reviews. Any safety concerns related to the prioritization of deferred maintenance will be brought to the attention of responsible NNSA management.

The Board's response to Question 21 [which follows] provides additional details on deferred maintenance.

Mr. ROGERS. Ms. Roberson, what are the safety impacts of NNSA's deteriorating infrastructure and \$3.6 billion backlog of deferred maintenance? NNSA officials have said that "infrastructure risk becomes safety risk." Do you agree? [Question #21, for cross-reference.]

Ms. ROBERSON. The DNFSB agrees that infrastructure risk can become safety risk. It should be noted, however, that the overall NNSA deferred maintenance backlog of \$3.6B includes non-defense nuclear facilities and infrastructure that have little or no bearing on the safety of 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 non-defense nuclear facility can pose a nuclear safety risk under the right circumstances. For example, a major fire in a non-defense nuclear facility could threaten a nearby defense nuclear facility. In such a case, we would expect the credited fire suppression systems in the defense nuclear facility to provide for the adequate protection of the public and workers from radiological consequences. Clearly, though, it would be preferable to avoid a major fire in the first place.

Safe performance of work includes allotting adequate resources to system and equipment maintenance, maintaining up-to-date configuration control, and making necessary upgrades to support system infrastructure. A lesson learned from the recent Waste Isolation Pilot Plant events is that degraded and out of service safety-related equipment must not be accepted and tolerated. Deficient and poorly maintained safety-related infrastructure, including credited safety SSCs that support nuclear activities, can pose safety risks to the public and workers, and can jeopardize NNSA's ability to accomplish mission-related work.

Infrastructure is defined in DOE Order 430.1B, Real Property Asset Management, as "All real property, installed equipment, and related real property that is not solely supporting a single program mission at a multi-program site or that is not programmatic real property at a single program site." DOE Order 430.1B defines deferred maintenance as "maintenance that was not performed when it should have been or was scheduled to be and which, therefore, is put off or delayed for a future period." Maintenance activities are expected to be scheduled and performed within established intervals; preventive maintenance should be waived or deferred only with approval by an appropriate authority that considers the significance of the SSC

and the length of delay. Further, any deferral of planned tasks should have a technical basis.

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 by 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 on an on-going basis. As such, completion of the maintenance and surveillance requirements is carefully controlled or, if not achievable, compensatory measures are implemented or the associated operations are shut down until the required maintenance or surveillance is complete.

Deferred maintenance associated with safety-related SSCs credited in DSAs is of paramount concern to the Board. Maintenance on other safety-related programmatic and infrastructure equipment is also important to maintaining the safety envelope of defense nuclear facilities. Preventive and corrective maintenance should only be deferred if sufficient technical justification exists to do so.

The DNFSB has identified preventive maintenance deferrals at NNSA/DOE sites whose justifications were less than adequate. For example, preventive maintenance has been deferred because parts were not ordered, or because materials or craft resources to support the work were not available. Similarly, the DNFSB has seen cases where preventive maintenance schedules were modified based on business decisions. The maintenance deferral process must ensure adequate reviews are carried out to understand the possible impact of not performing a maintenance task on schedule, applicable compensatory measures are instituted to manage those risks, and understanding and acceptance of any added risks are documented.

QUESTIONS SUBMITTED BY MR. COOPER

Mr. COOPER. General Klotz, what are the long-term goals and challenges for DNN, and what initiatives are you leading that will ensure we are well-postured to address the proliferation threats that might emerge in a decade? Are there opportunities to further improve and invest in verification and detection technology?

General KLOTZ. Because of its world leadership in scientific and technical expertise and programmatic capabilities in the nuclear security arena, DOE, mostly through the NNSA, plays a central U.S. Government role in pursuing U.S. nuclear security goals. NNSA makes full use of all the resources at its disposal to fulfill its nonproliferation and counterterrorism missions by:

- Developing and implementing policy and technical solutions to eliminate proliferation-sensitive materials and limit or prevent the spread of materials, technology, and expertise related to nuclear and radiological weapons and programs around the world.
- Providing expertise, practical tools, and technically informed policy recommendations required to advance U.S. nuclear counterterrorism and counterproliferation objectives.
- Maintaining essential components of the U.S. capability to respond to nuclear or radiological crises and manage the consequences (domestically or internationally) of civilian radiation exposure resulting from a nuclear or radiological incident, especially those involving terrorism.

To pursue these U.S. nuclear security goals within this enduring and evolving nuclear threat environment, the NNSA program strategy is to organize its nuclear nonproliferation and counterterrorism actions into three primary areas that cover the nuclear threat spectrum:

- Prevent non-state actors and additional countries from developing nuclear weapons or acquiring weapons-usable nuclear materials, equipment, technology, and expertise; and prevent non-state actors from acquiring radiological materials for a radiological threat device.
- Counter the efforts of both proliferant states and non-state actors to steal, acquire, develop, disseminate, transport, or deliver the materials, expertise, or components necessary for a nuclear or radiological threat device or the devices themselves.
- Respond to nuclear or radiological terrorist acts, or accidental/unintentional incidents, by searching for and rendering safe threat devices, components, and/or radiological and nuclear materials, and by conducting consequence management actions following an event to save lives, protect property and the environment, and enable the provision of emergency services.

Mr. COOPER. General Klotz, how does DOE plan to afford the \$30 billion or more that will be required to construct and operate MOX? Should NNSA re-baseline the MOX project in FY16?

General KLOTZ. The Administration remains firmly committed to disposing of surplus weapon-grade plutonium. The Consolidated and Further Continuing Appropriations Act, 2015, directed that construction on the Mixed Oxide Fuel Fabrication Facility (MOX) project continue and that cost studies and technology alternative studies be conducted. The Department of Energy requested Aerospace Corporation, a federally funded research and development center, to assess and validate the analysis of options for disposing of 34 metric tons of weapon-grade plutonium mandated by Congress. The assessment and validation is expected to be completed in late FY 2015. This independent validation will inform the final policy decision on what disposition path the United States Government will adopt in compliance with the Plutonium Management and Disposition Agreement. Once a final decision is made, a rebaseline of the MOX project would be required and could take approximately 18–24 months to complete.

Mr. COOPER. General Klotz, is it worth an effort to assess whether it would be feasible to use low enriched uranium (LEU) (instead of highly enriched uranium) in naval reactor fuel to the next generation of aircraft carriers?

General KLOTZ. It is feasible but is not practical or cost effective with our current technology. Today, using LEU would increase the amount of refuelings required, which has the follow-on effect of requiring additional ships to meet the same military requirements. Theoretically, advances in technology could partially recover the loss in core-life from that which we have today in our HEU cores, but we would need a significant R&D effort to develop those technologies. Further effort would then be required to design the LEU reactor plant and other associated systems before we would be ready to build an LEU powered ship.

Mr. COOPER. Would there be any benefit to assessing the potential for LEU in naval fuel, such as nonproliferation or security benefits even if there might not be any driving military benefits?

General KLOTZ. If we could develop the technology to the point where we use exclusively LEU, it would ultimately have a non-proliferation benefit because we would no longer require HEU for naval nuclear propulsion.

Security costs would also be reduced, as HEU facilities have greater requirements, but we would still require a substantial security presence in terms of physical infrastructure and manpower.

Mr. COOPER. Would this help sustain the necessary R&D funding and capability for Naval Reactors?

General KLOTZ. Developing the technologies required to use LEU in our plants would be a substantial, multi-year research effort that works at the cutting edge of nuclear science. Advanced fuel development would sustain one area of unique expertise that the Naval Reactors Program relies upon to deal with the day-to-day issues involved in naval reactor design, construction, operation, and disposal, which require a detailed understanding of naval fuel. Naval fuel performance knowledge is unique and exists only within the Naval Reactor Program. Advanced fuel development attracts talent and maintains our knowledge base.

QUESTIONS SUBMITTED BY MR. LARSEN

Mr. LARSEN. General Klotz, what are the risks of NNSA modernization plan, including executing 4–5 concurrent life-extension programs and overseeing major construction projects at Y–12 and Los Alamos National Laboratory in the 2020s?

General KLOTZ. NNSA has developed long term modernization efforts for the nuclear security enterprise described in the FY 2016 Stockpile Stewardship and Management Plan. Modernization efforts for warheads through approved Life Extension Programs face a number of risks. First, the ability to certify designs that include new or updated material combinations or surety features is a challenge for life extension programs in the absence of underground testing. To address this challenge, the national security laboratories have improved their fundamental understanding of physics package interactions through numerous enhanced physics experiments, greater computing power, and advanced simulations. Second, NNSA must mature technologies and components to transform the stockpile over the next twenty years. Technology maturation enables development and delivery of design-to-manufacturing capabilities to meeting current and future nuclear weapons needs for the Nation's stockpile. NNSA uses the Component Maturation Framework, which is a portfolio management tool used to integrate preliminary scope, proposed technology and manufacturing readiness levels, and planning estimates, to inform decisions on com-

ponent development, technology maturation and timely insertion. NNSA is establishing plans to mature technologies sufficiently in advance of planned insertion points to cost-effectively minimize risk. Third, although the president's budget fully funds these activities, cuts due to sequestration can put them at risk.

For major construction projects, NNSA is committed to delivering its capital asset projects on budget and schedule. Over the past four years, NNSA has focused on putting the right policies, principles, people, processes, procedures, and partnerships in place to implement the Office of Management and Budget's (OMB) Circular A-11 for Capital Acquisition Projects, Department of Energy Order 413.3B on project management, and the Secretary's January 2015 enhanced project management policies. In 2013, GAO narrowed the focus of its High Risk list for NNSA to contracts and projects with a Total Project Cost greater than \$750 million as a result of the improvements NNSA has been making in its contract and project management. NNSA is confident that the same policies and processes for projects less than \$750 million are scalable to the major system acquisition projects at Los Alamos National Laboratory and Y-12.

Following are risks to NNSA's portfolio of construction projects:

- Escalation on commodities and equipment procurements
- Difficulties attracting and retaining nuclear qualified workers at assumed labor rates
- Availability of vendors qualified to produce materials and equipment to meet current nuclear construction standards (NQA-1)
- Changes to project requirements, codes, and standards Delays in authorizations to start construction activities

Mr. LARSEN. Do you have the expertise and management in place to lower the risk of schedule slips and cost increases? Are you confident NNSA can execute this plan?

General KLOTZ. NNSA has the expertise and management processes in place to effectively plan and execute planned weapon system modernization activities. NNSA has established an office (NA-19) to focus on weapon system modernization. To control costs, earned value management practices are being implemented for every weapon system acquisition. The NNSA weapons workload has grown over the last several years to include 3 life extension programs and one major weapon system alteration, and each of these programs requires trained and qualified federal managers and selected subject matter experts. NNSA has developed staffing plans that will, over time and with Congressional support, align federal resources required to execute our assigned program of work.

QUESTIONS SUBMITTED BY MR. GARAMENDI

Mr. GARAMENDI. General Klotz, is there a plan for retiring B83 and W76-0? What is the timeline?

General KLOTZ. Both the B83 and W76-0 are planned to be retired once confidence is gained in the B61-12 and W76-1 Life Extension Programs (LEPs), respectively. Specific planned retirement dates can be provided in a classified response.

Mr. GARAMENDI. General Klotz, there is some concern that the second-line of defense funding for fixed portal monitors at ports may not provide the best value for the funding. Do you agree? Why or why not?

General KLOTZ. The fixed radiation portal monitors deployed by NNSA's Nuclear Smuggling Detection and Deterrence (NSDD) Program (formerly known as the Second Line of Defense) are a critical element of the U.S. Government's layered approach to countering the threat of illicit trafficking. NSDD provides international partners with a suite of tools, including fixed, mobile and handheld detection equipment, training, and technical support to enhance their capabilities to detect, deter and interdict the illicit trafficking of nuclear and radiological materials. Before deploying equipment, NSDD considers a wide range of factors, including trafficking pathways, deployment environments, and partner capabilities in order to determine the most appropriate mix of equipment to counter the threat of smuggling in a particular country or region.

NSDD's fixed portal monitors work in concert with mobile detection systems to provide partners with multiple tools to prevent nuclear smuggling. Given the consequences of a nuclear or radiological device incident, it is imperative that all available tools be brought to bear to create a robust and layered defense against nuclear smuggling.

Regarding the capabilities of the fixed portal monitors, they are effective in detecting some special nuclear materials as well as radiological materials that could be used in a radiological dispersal device (RDD) or radiological exposure device (RED).

Further, fixed portal monitors have detected materials of concern in the past. More detail on specific interdiction cases, as well as portal monitor capabilities, can be provided in a classified setting. Fixed portal monitors also help deter trafficking by complicating potential smugglers' task, forcing them to use alternate means that increase the probability of detection.

Mr. GARAMENDI. General Klotz, what is the impact of Russia withdrawing from cooperation with the United States on securing and removing fissile material in Russia? What are the alternatives to ensure these materials are not stolen or diverted?

General KLOTZ. Material protection, control and accounting (MPC&A) cooperation with key non-Rosatom sites and organizations is continuing under the Multilateral Nuclear and Environmental Programme in the Russian Federation (MNEPR) framework agreement, as is cooperation at a limited number of Rosatom sites and organizations. However, Rosatom informed us last December that existing cooperation would cease with most Rosatom nuclear sites and organizations as of the end of 2014.

Existing work will continue in the near future to complete security upgrades and sustainability work directly with a subset of Rosatom and non-Rosatom sites. The Russian decision to scale back cooperation has accelerated the shift from assistance to technical engagement on key foundational elements of modern and effective security. Given that Russia maintains the largest holdings of weapons-usable material, DOE/NNSA will continue to seek engagement on nuclear material security best practices with Russian sites and organizations. This includes topics such as training, regulatory development and inspections, and transportation security.

DOE/NNSA also expects to continue cooperation with Russia and third parties, including the repatriation of Russian-origin highly enriched uranium (HEU).

DOE/NNSA will also work to maintain nuclear security relationships with neighboring countries, offering continued training and training-center support to also maintain regional capabilities. We will continue to help strengthen border and port security programs with partner countries around Russia, to enable detection and interdiction of any trafficked nuclear material, including consideration of additional measures that would be prudent to pursue.

QUESTIONS SUBMITTED BY MR. TURNER

Mr. TURNER. The President's budget request clearly supports Uranium enrichment technology. In your opinion, do you find that maintaining the American Centrifuge capability is important?

General KLOTZ. A reliable supply of enriched uranium is required to meet U.S. national security requirements. Any enrichment technology used to meet these requirements, should the interagency determine that such technology is the best way forward, must be U.S. origin. Enriched uranium provided via foreign technology, even if located in the U.S., may not be used for national security purposes due to international peaceful-use assurances. The President's budget request maintains the operability of the centrifuge technology at the pilot plant in Piketon, OH, and the development and test facility in the East Tennessee Technology Park (ETTP) Building K-1600. Maintaining these near-term domestic-origin technologies that could produce low enriched uranium unencumbered by peaceful-use restrictions is important while U.S. Interagency Policy Committee develops the best path forward to meet our national security requirements for enriched uranium.

Mr. TURNER. Additionally, do you agree that with further development and deployment of U.S. Uranium enrichment technology will help meet future security needs?

General KLOTZ. A domestic uranium enrichment capability would meet national security and nonproliferation missions that require unobligated low-enriched uranium (LEU) for commercial light water reactors involved in tritium production, high assay LEU for research reactors, and eventually highly enriched uranium (HEU) for Naval Reactors. The Department will provide a report to Congress in the near future that will inform discussions regarding the path forward for meeting the nation's needs for unencumbered enriched uranium.