

**DEPARTMENT OF DEFENSE AUTHORIZATION  
OF APPROPRIATIONS FOR FISCAL YEAR  
2015 AND THE FUTURE YEARS DEFENSE  
PROGRAM**

---

**THURSDAY, APRIL 10, 2014**

U.S. SENATE,  
SUBCOMMITTEE ON STRATEGIC FORCES,  
COMMITTEE ON ARMED SERVICES,  
*Washington, DC.*

**STRATEGIC FORCES PROGRAMS OF THE NATIONAL NU-  
CLEAR SECURITY ADMINISTRATION AND THE OFFICE  
OF ENVIRONMENTAL MANAGEMENT OF THE DEPART-  
MENT OF ENERGY**

The subcommittee met, pursuant to notice, at 2:35 p.m. in room SR-232A, Russell Senate Office Building, Senator Mark Udall (chairman of the subcommittee) presiding.

Committee members present: Senators Udall, Graham, and Vitter.

Majority staff member present: Jonathan S. Epstein, counsel.

Minority staff member present: Robert M. Soofer, professional staff member.

Staff assistant present: Lauren M. Gillis.

Committee members' assistants present: Christopher R. Howard, assistant to Senator Udall; Rachel H. Lipsey, assistant to Senator Donnelly; Craig R. Abele, assistant to Senator Graham; and Joshua S. Hodges, assistant to Senator Vitter.

**OPENING STATEMENT OF SENATOR MARK UDALL, CHAIRMAN**

Senator UDALL. The Strategic Forces Subcommittee will come to order.

Senator Vitter will be joining us shortly. He's serving as the ranking member today. And we have Senator Graham here.

I'm going to make a short statement, and—Senator Vitter arrives, we'll look to him for a short statement.

And then, as I've talked to Mr. Held, I'm going to recognize Senator Graham for some questions. We all have busy schedules around here, and we work with each other to make sure that we maximize our time.

So, with that, this afternoon we will receive testimony regarding the National Nuclear Security Administration and the Office of Environmental Management of the Department of Energy for fiscal year 2015.

Let me thank all the witnesses here today for taking time to appear. I know your time is valuable, as well.

The purpose of this hearing is to examine the Nuclear Weapons Stockpile Program of the National Nuclear Security Administration, or the NNSA, as well as the cleanup programs associated with former Defense production sites of the Department of Energy.

We will have two panels today. The first panel will be Mr. Bruce Held, the Acting Administrator of the NNSA, who will speak to the overall NNSA budget. The second panel will consist of Dr. Don Cook, the Deputy Administrator for Weapons Programs; Admiral John Richardson, the Deputy Administrator for Naval Reactors; and Mr. Owendoff, the Acting Principal Deputy assistant Secretary, Office of Environmental Management, Department of Energy.

Mr. Held, welcome to the subcommittee. And I understand it's probably bittersweet for you. Just this Wednesday, General Klotz was confirmed for the position of Administrator of the NNSA. So, while I say welcome, I also want to thank you for your service in leading the NNSA while we waited on the Senate to act.

There's no shortage of work to go around in stopping the spread of nuclear material that can harm our country, yet we continue to see a decrease in funding for these programs. In my opinion, there's a fundamental flaw in the way the budget for nonproliferation programs is coordinated in the executive branch. And, in that vein, Mr. Held, I'd like to hear from you regarding the underlying reasons for the funding decreases we've seen over the past several budget proposals. It's my intent to advocate strongly for solutions in the upcoming National Defense Authorization Act to help mitigate these cuts.

Dr. Cook, you are in charge of ensuring our nuclear stockpile meets military requirements. It is essential that these programs continue in the most cost-effective manner possible and meet the deadlines required by the Department of Defense. I understand the Department may be embracing a modular approach for the plutonium and uranium buildings at Los Alamos and Oak Ridge, respectively. I'd like to hear more details regarding these approaches, as it is my opinion that they assist in meeting requirements while saving time and taxpayer money.

Admiral Richardson, you continue a long, distinguished line of military officers in the Navy's nuclear program. A facility in Idaho where we store and examine spent Navy nuclear fuel is also growing older, but it is not getting better with age. I understand we are now at a critical juncture to replace the spent fuel storage pool, and it will soon have impacts on the Navy's fleet. I need to understand what the problem is and how we can be of help here.

Mr. Owendoff, your office is in charge of cleaning up former Defense sites used in the production of nuclear weapons. This is a daunting task. Colorado is home to Rocky Flats, one of those legacy sites, so this is an item of great interest to me in my State. There have been setbacks at the Waste Isolation Pilot Plant—we all know it as WIPP—and they—those setbacks include a mine fire, and it recently underwent a complete shutdown due to the release of radiation in the mine. It's essential that we understand what transpired with both of these events, and with the fire in particular.

We ought to include the key takeaways from the recent accident report that was issued in efforts to address those takeaways.

With that, let me turn to Senator Vitter for his opening statement, and then, as I mentioned, Senator Vitter, I'm going to turn to Senator Graham and give him some time to—

Senator VITTER. Sure.

Senator UDALL.—question Mr. Held, if that's—

Senator VITTER. Sure, absolutely.

Senator UDALL.—acceptable to you.

#### STATEMENT OF SENATOR DAVID VITTER

Senator VITTER. Thank you very much, Senator Udall.

Despite the President's rhetoric of a world without nuclear weapons, the administration has announced its intention to maintain and modernize the nuclear triad and to preserve the important role of nuclear weapons to deter adversaries, including nuclear adversaries, and reassure allies. I think that's good, because I think that is a safer world, having this deterrence in the right way.

However, the President's prohibition on the development of new nuclear weapons remains in place even while other nations continue to develop and produce new nuclear weapons. And I do question that. If we have nuclear weapons in the triad, for important strategic reasons, I think we should have them in the most effective, including cost-effective, way possible.

Unlike the United States, Russia, for instance, maintains a robust nuclear warhead production capability. And of additional concern, of course, is Russia's huge disparity in tactical nuclear weapons. And certainly, recent events in Crimea reinforce the enduring role for U.S. nuclear weapons, particularly with our NATO allies in mind.

I'm also concerned about nuclear modernization shortfalls, and I would point to this chart, to my left, to your right. Through a combination of funding shortfalls, virtually all of our modernization efforts are delayed or deferred. The table at the top of the chart demonstrates that funding for NNSA weapons activities is about \$2 billion less than the commitment made by the President and Congress to secure New START ratification. And, to me, this is really important.

New START ratification was 2010, just a few years ago. Part of the discussion that clearly led to that ratification were specific commitments about modernization, about funding. And, as you see, we have just not come close to those specific commitments ever since then. We're falling far behind. Even a half-billion-dollar increase in weapons activities for fiscal year 2015 will not close that gap.

And the bottom of the chart illustrates what that means. It's not just dollars, it's not just numbers. It means real impact and delay in five areas. And the bottom of the chart goes down those five important areas.

That doesn't even count—indicate an additional 5-year delay, from 2021 to 2026, to the date when the United States will be able to produce 30 plutonium pits per year, and there's no indication when we're going to reach the 50 to 80 pits per year, which is the military requirement. That's our requirement, not 30.

The NNSA and the National Labs are responsible for maintaining the effectiveness of our nuclear stockpile. They do this through constant surveillance of the stockpile and by implementing life extension programs for warheads and bombs that are well past their design life. And to accomplish this, they really require modernization, including modern physical infrastructure, and, of course, a highly trained workforce, which can only stay highly trained, cutting-edge with that modernization activity.

While funding shortfalls don't make the job any easier, I would also note that an outside panel of experts has determined that governance structures and practices certainly account for inefficiency, as well.

Finally, I just want to note that some members suggest that funding for NNSA weapons activities has come at the expense of nonproliferation programs. But, again, I think this chart is crucial, as it indicates \$500 million increase for weapons activities doesn't make up for a shortfall. We're still behind in a significant way. And, as the Nuclear Weapons Council told Congress very recently, the 5-year budget proposal submitted by NNSA is "fragile, and any funding reductions at this point could pose unacceptable risk to the health of the nuclear enterprise." I would go further and say, we started with these commitments that were the absolute minimum coming out of New START. We're now well behind those.

So, those are my main concerns, and I'll look forward to the testimony of the witnesses.

Senator UDALL. Thank you, Senator Vitter.

Again, Mr. Held agreed to field some questions from Senator Graham. And we appreciate that, Mr. Held. You've always been flexible.

Senator Graham.

Senator GRAHAM. Thank you, Mr. Chairman and Senator Vitter.

Very quickly, the MOX program—I know you're very familiar with it—at—in South Carolina. Senator Vitter was trying to indicate you've got sort of two jobs you have to do. One is to modernize our weapons program to make sure they're relevant for the needs of the Nation. And the other is to rid the world of nuclear material, when possible.

And one of the, sort of, breakthroughs, I think, Mr. Chairman—over a decade ago now, there was an agreement between the United States and Russia to take 34 metric tons of weapons-grade plutonium off the market. Both countries would get rid of this excess weapons-grade plutonium.

Are you familiar with that agreement, Mr. Held?

Mr. HELD. Most certainly, sir.

Senator GRAHAM. Okay. And in 2011, we basically agreed that the American disposition path would be MOX.

Mr. HELD. Right. I think we modified the agreement to—we would stick with MOX and—

Senator GRAHAM. Right.

Mr. HELD.—the Russians would switch from MOX to a fast-reactor program.

Senator GRAHAM. Right. So, they're using a fast-reactor resolution. MOX, for those who may not be familiar with it—and I can understand why you would not be—is taking the weapons-grade

material and blending it down so it can be burnt in commercial nuclear reactors. Is that correct?

Mr. HELD. Yes, sir.

Senator GRAHAM. How many warheads could be made from 34 metric tons of weapons-grade plutonium?

Mr. HELD. Thousands, sir. The world—

Senator GRAHAM. Thousands.

Mr. HELD. The world will be a much safer place without those 34—

Senator GRAHAM. Right. So—

Mr. HELD.—metric tons—

Senator GRAHAM.—we're talking about thousands of nuclear weapons potentially made from this stockpile that we want to turn into a—from a sword to a plowshare.

The administration—the MOX program—the MOX facilities in South Carolina is 60 percent complete. Do you agree with that?

Mr. HELD. The—in some aspects. It's—we've—

Senator GRAHAM. Okay.

Mr. HELD.—sunk \$5 billion—

Senator GRAHAM. Okay.

Mr. HELD.—into it. Yes, sir.

Senator GRAHAM. Right. To finish it out, the estimates is around 7 billion. Is that correct? Six to seven is what DOE testified to yesterday?

Mr. HELD. Yeah, depending upon how—

Senator GRAHAM. Okay.

Mr. HELD.—you're looking at it.

Senator GRAHAM. So, the administration has decided to put this program on cold standby, stopping construction. Is there an effort to layoff people at Savannah River site who have been working on the MOX program? Or do you know?

Mr. HELD. Until we get a final decision that—no, we are not doing—

Senator GRAHAM. Well, that is reassuring, because the workforce is essential. And I am confident, Mr. Chairman, that the Congress will restore funding that was cut from the President's budget, to keep this program on track, because the rationale for stopping it is that there is a cheaper, more effective disposition.

Would one of those routes be immobilization?

Mr. HELD. One of those routes would be immobilization, dilution in geographic repositories or fast reactors or MOX.

Senator GRAHAM. Okay.

Mr. HELD. I think those are the four big ones, yes, sir.

Senator GRAHAM. If you did immobilization, what, very briefly, would be required to achieve immobilization?

Mr. HELD. The—we would have a lot more investment in the technology to—

Senator GRAHAM. And you'd have to move material from Washington State to Savannah River.

Mr. HELD. Yes, sir. Yes, sir.

Senator GRAHAM. Mr. Chairman, I'm fairly familiar with this program. We've had problems with the Bush administration, every administration. Immobilization is not going to be faster and it's not going to be cheaper, and there is no technology that's going to work

better than MOX. And my commitment to this committee is to try to reduce the cost of the MOX program.

Have the—what have the Russians said about changing course, on the part of the United States? Do you know?

Mr. HELD. The one—there is a precedent in the 2010 renegotiation of the agreement, that the Russians, because of cost factors, they wanted to move to the fast-reactor approach rather than MOX. And since—

Senator GRAHAM. Am I fair to say the Russians rejected immobilization because the material could one day potentially be reconstituted?

Mr. HELD. That was their position, yes, sir.

Senator GRAHAM. Yeah. So, the Russians rejected that, because they don't want to give up—now, I wouldn't agree to allow the Russians to immobilize, because somebody down the road could reconstitute.

So, you've been very—you've got a tough job. You're trying to do two things that are very important: modernize the nuclear deterrent force and try to honor agreements, in terms of disposition of excess weapons material.

The agreement with the Japanese, of 700 pounds of weapons-grade plutonium, do we know where that would go?

Mr. HELD. That has not been decided as of yet, sir.

Senator GRAHAM. I think it would be wonderful if we could receive that material and take it off the marketplace, but you're going to have a hard time getting anyone to do that, in light of stopping the program.

So, the one thing I worry about, Mr. Chairman, is that when a State makes a commitment to accept 34 metric tons of weapons-grade plutonium, with a pathway forward that would create jobs but would get the material from a sword to a plowshare, and you stop after it's 60-percent complete, it is just not a good model to use, because this is very hard, you know, politically, to convince people to take weapons-grade plutonium in your State and do something good for the Nation and world.

Do you agree that if we could achieve the goal of taking the 34 metric tons, in Russia and the United States, off the market, we'll have done the world a great service?

Mr. HELD. The—I think, most certainly, it—the world will be a safer place. The question is the relative cost of doing it, and—

Senator GRAHAM. And the relative cost of thousands of nuclear warheads taken off the market, what's that worth? And you're 60 percent complete, you're stopping the project, coming up with a theory that's previously been rejected by the Russians. I just don't think this is very wise, and I think we need to fix it before we get in our—ourselves in a very bad way with the Russians.

And so, I'll look forward to trying to restore funding and helping you with the other problems that Senator Vitter has tried to explain in great detail. So, maybe some sequestration relief down the road would be helpful to both these projects.

Thank you, Mr. Chairman.

Senator UDALL. Thank you, Senator Graham. Thank you for taking the time to participate. And we will see you at the markup for the NNDA—

Senator GRAHAM. Okay.

Senator UDALL.—as I know we will.

Mr. Held, we look forward to your statement. Before you start, I might make note that we're going to, if at all possible, end the hearing by 4 o'clock. We've got four witnesses, so I think that's a—that's very doable. And I'm sure that Senator Vitter would agree to 7-minute rounds of questions once you've completed your testimony.

Mr. HELD. Okay. I'll be very brief, sir. Thank you.

Senator UDALL. Thank you.

**STATEMENT OF EDWARD BRUCE HELD, ACTING ADMINISTRATOR AND ACTING UNDER SECRETARY FOR NUCLEAR SECURITY, NATIONAL NUCLEAR SECURITY ADMINISTRATION, DEPARTMENT OF ENERGY**

Mr. HELD. Chairman Udall, Ranking Member Vitter, I'm honored to be with you today.

The fiscal year 2015 budget request for the National Nuclear Security Administration is a clear expression of President Obama's commitment to the—America's nuclear security. Within the fiscal constraints of the Bipartisan Budget Act, the President requests a 4-percent increase for NNSA, to \$11.7 billion. This includes a 26-percent increase for naval nuclear reactors and a 7-percent increase for weapons activities.

The President's request for weapons activities funds the 3+2 strategy approved by the Nuclear Weapons Council in support of two enduring commitments to the American people. One, sustain a safe, secure, and effective nuclear deterrent for America that is, two, prudently based on a smaller, safer, and more cost-efficient stockpile of nuclear weapons.

To remain within BBA constraints, difficult decisions were unavoidable. The MOX project to dispose of excess weapons-grade plutonium will be significantly more expensive than anticipated. Although painful, DOE, for its part, believes that it would be in the best interest of the taxpayer to place the MOX project in reversible cold standby while we explore promising possibilities for a more cost-efficient path to fulfilling our plutonium disposition agreement with Russia.

NNSA performance—NNSA has performance challenges ahead of us, and Secretary Moniz will always be straightforward with you about those challenges. At the same time, NNSA has significant successes to build on, and the Secretary insists that we get out of our defensive crouch and honestly tell our success stories in a way that is meaningful to the American people.

Regarding nuclear security, for example, our counterintelligence program was dysfunctional 10 years ago. Today, DOE counterintelligence is highly effective, respected, and trusted. Less than 10 months ago, NNSA communications with our colleagues on the Nuclear Weapons Council were strained. Today, those communications are healthy and transparent, and this improved atmosphere is helping us focus on the big strategic issues for which the NWC exists.

On nonproliferation, in just the last 4 years, 11 countries plus Taiwan have eliminated their caches of sensitive nuclear materials,

and security has been hardened at scores of nuclear storage facilities around the world to prevent theft by potential terrorists. The world is a safer place as a result.

On project management, NNSA has been on the GAO high-risk list literally since the day it was born, in March 2000. Since February 2011, however, we have consistently been on schedule and on budget for large projects up to \$750 million. As a result, GAO has taken us off its high-risk list for projects of this size for the first time in NNSA's history.

As you know very well, we still have issues with the multibillion-dollar mega-projects, but, thanks to the greater discipline and more agile strategy that Secretary Moniz has brought with him, we are making progress there, as well.

That leads me to our first and foremost responsibility, which is nuclear safety. For nuclear safety reasons, we simply must modernize the aged infrastructure for enriched uranium processing in Oak Ridge, we must modernize the aged infrastructure for plutonium processing in Los Alamos, and, wherever we can reliably do so, we should replace conventional high explosives in our nuclear stockpile which—with much safer insensitive high explosives. If we take a commonsense approach that emphasizes better/sooner rather than perfect/later, all of these are doable within reasonable cost. But, if, heaven forbid, we have a nuclear safety accident because we have not done so, then, Mr. Chairman, NNSA will have truly failed and we will forever forfeit the trust and confidence of the American people in all things nuclear.

Thank you, sir.

[The prepared statement of Mr. Held follows:]

Senator UDALL. Thank you, Mr. Held.

Let me recognize myself for 7 minutes.

Let me move to the fact that, 2 years ago, the NNSA deferred, for at least 5 years, a replacement of the aging plutonium facility at Los Alamos. I think we'd spent up to about \$500 million on that design. This year, you're looking at a redesign of the uranium facility at Oak Ridge Y—at the Y-12 plant, to be clear, as its design may increase as—to as much as \$10 billion. This is a huge amount of taxpayer money, either lost or about to be lost. Can you please tell the committee what you're doing to rein in the cost of these facilities, in terms of simpler designs?

Mr. HELD. Yes, sir.

We're doing two things. First, we are applying the same discipline and rigor on these mega-projects that we have been doing so on the projects up to 750 million since February 2011. Second, and maybe more importantly, or even more importantly, we're switching our strategy from a—kind of a big-box strategy to a more agile, modular strategy. If you look at this, this change in strategy was a mother—or, necessity was the mother of invention in the plutonium side. And so, what we've done is break down this big project into three phases. The first phase is driven by nuclear safety concerns. We must get out of the old CMR building by 2019. We can do that by moving much of that work into the brand-new radiological laboratory that we brought in on schedule and on budget. Second, we—first, we need to get up to the 30-pit-per-year target. We can do that by repurposing existing facilities in the plutonium

facility number 4 in a much more cost effective way. And then, third, to get to the Pentagon target and military requirement of 50-to-80-pit-per-year, then we will need additional modular facilities there that we will build as the mission timing and budget requires.

Senator UDALL. Let me turn, Administrator Held, to the NNSA nonproliferation budget. It went down 20 percent compared to last year's enacted level of roughly \$2 billion, and 30 percent relative to the fiscal year 2013 level of 2.2 billion. Now, the majority of that decrease is related to the Mixed Oxide Fuel Program that Senator Graham explored with you. Can you explain to the committee, besides the MOX program, what's going on here?

Mr. HELD. So, Secretary Moniz, since becoming Secretary, has been very rigorous looking at budgets across the board. And so, that rigor has been applied both to nuclear weapons, to infrastructure, to—and to nonproliferation. So, the—we have adjusted our weapons program, as well. But, the—a large share of this did, in fact, hit the nonproliferation. That is a matter of deep concern to us. The—we have made tremendous progress over the past 4 years, the 14—13 countries who eliminated their stockpile—or their special nuclear material caches. There's a lot more work we have to do in the next several years. And \$1.6 billion of American taxpayer money is still an awful lot of money to do that with. And so, the Secretary is asking us if we can take a look at: In these budgetary tight periods, is there a better way, a more agile, more mission-effective way that we can get a higher return on our investment in nonproliferation? We are not walking away from the nonproliferation issue.

NNSA is the National Nuclear Security Administration. That means both nonproliferation and weapons. We are not the Nuclear Weapons Administration. And so, we need a coherent narrative for—to tie both of those together. And we are—and the Secretary is working to do that.

I believe the 3+2 strategy is actually a good example of how we are tying those to—the reduced size of the stockpile with the continuing safe, secure, and effective stockpile.

Senator UDALL. Let me further pursue a couple of questions—

Mr. HELD. Yes, sir.

Senator UDALL.—tied to—

Mr. HELD. Yes, sir.

Senator UDALL.—the Savannah River site. I think the—this site is estimated to cost as much as \$10 billion, with an estimated \$30 billion lifecycle cost.

Mr. HELD. For the MOX project, sir?

Senator UDALL. MOX—yes. Yes, at Savannah—I know there are other things that are happening there, but—

And I think you all have proposed that you'd put the facility in cold storage in fiscal year 2015. The NDAA for Fiscal Year 2014 authorized the Department to conduct a strategic review of the program, to include, but not be limited to, MOX, and to take into account the investments made to date in the MOX program. It did not, however, authorize cold storage. What are the plans for the \$343 million appropriated in fiscal year 2014? And, on the same topic, what does the fiscal year 2015 budget mean by "cold storage"?

Mr. HELD. Okay. Sir, you can absolutely trust that we will obey the law of the land. You can absolutely trust on that.

What we're—what the strategic study has laid out for us is a good-government problem. We have invested \$5 billion in the facility in—at Savannah River. The remaining cost—full lifecycle cost for the whole mission is another \$25 billion. The question is, Is there an alternative that can achieve that mission that costs less than \$25 billion? If there is, then it would be a wise use of the taxpayers' money to pursue that. If there is not, then the best—then what we should be doing is trying to drive down the cost of the MOX project as much as possible. And that's—that is where we are at, at this point. There has been a very thorough, clear-eyed study done—of these options, done by John McWilliams. We really need to get that study to you as soon as possible so that we can all make a good-government decision, sir.

Senator UDALL. I have one final question.

Mr. HELD. Yes, sir.

Senator UDALL. The NNSA's nonproliferation program seems to be wrapping up a number of efforts, but proposing little of any new ones. And, in my opinion, there's no shortage of activities to help stem the use of hostile use of nuclear material. You all are experts when it comes to responding to nuclear incidents. Wouldn't it be a wise investment of the funds we've spent developing this capability to train first responders and law enforcement officials in other nations in some of the capabilities we've developed to date? It seems to me like that would strengthen an overall national—let me, rather, say this—overall international—

Mr. HELD. Yes, sir.

Senator UDALL.—capacity to detect and respond to nuclear incidents. We have a national capacity, but how about applying that to the international scene?

Mr. HELD. Instinctively, I'm totally in agreement, sir. I think what we need to do across the nonproliferation accounts is look and take a step back—because we made a lot of progress over the last 40 years. And so, now we're in different budgetary environment, and I think we need to step back. Do we need to tweak the strategy a little bit to get the higher return for the taxpayers' dollar? Can we get greater synergies between nonproliferation and civil nuclear energy? And this leads to the small modular reactor issue. Can we get greater synergies between the weapons program and the nonproliferation program and to get greater return for the taxpayers' dollar? That's—that is what we are trying to do. And the GAO is going to be looking at this. One of the committees has supported the GAO to do this. Let's take this—to step back and take another look. The Secretary has asked the Secretary of Energy Advisory Board to do that same thing, to kind of give us some outside help. Is there—in a period of tight budgets, is there a better way we can achieve this mission at—with more effective use of the taxpayer dollar?

Senator UDALL. Thank you, Administrator Held.

Let me recognize Senator Vitter.

Senator VITTER. Thank you, Mr. Chairman.

Thank you, Mr.—

Mr. HELD. Sure.

Senator VITTER.—Administrator, again.

Mr. Administrator, I want to refer to this chart again. And again, the top of the chart, under the light blue, is fiscal year numbers that were committed to by all the parties as part of the discussion of the New START treaty. For—particularly for fiscal year 2012 and 2013 and 2014, would you say these numbers started out being inflated or having a lot of cushion or being fake in any way?

Mr. HELD. No, sir. I think we need to—I think what we're all trying to do together is kind of fit into a tighter—a changed budgetary environment, and do that in the most rational, good-government possible way.

Senator VITTER. Right. And so, under the top line, which were the commitments made, we have the actual appropriations. And, of course, these first 3 years, they fall well short, which is the third line, in red, the difference, so almost .4 billion the first year, almost a billion the second year, short; two-thirds of a billion short, fiscal year 2014, the third year. So, just those first 3 years, that adds up to a \$2-billion shortfall. So, I assume you'd agree, that's significant shortfall from the initial goals.

Mr. HELD. You combine that, you combine—

Senator UDALL. If I could interrupt for just 1 minute.

Mr. HELD. Yes, sir.

Senator UDALL. There's been a vote called. I'm going to ask Senator Vitter if he would stay in place and continue—

Mr. HELD. Okay.

Senator UDALL.—his questioning. I will hurry and vote and be back.

Senator VITTER. Okay.

Senator UDALL. And I will trust you to keep the subcommittee—

Senator VITTER. Okay. I'll—

Senator UDALL.—on the straight and narrow. That's the way we—

Senator VITTER. Take care of some legislation and do some other business and—[Laughter.]

Senator VITTER [presiding].—await your return.

Well, again, I just want to underscore, these numbers were part of a lot of discussion—

Mr. HELD. Yes, sir.

Senator VITTER.—that was in the middle of passing New START. And those commitments were absolutely at the middle of passing New START, and very much a part of the reason some folks voted yes. I voted no. But, they were certainly at the heart of the reason many folks voted yes. And I just want to underscore, we're falling well short, already.

Now, you talked about a significantly tougher budget environment. I would just suggest, you know, this wasn't the 19th century when we talked about this; it was a few years ago. We knew the budget environment was tough. Nothing has fundamentally changed. We knew this was a very tough environment, so I don't think there has been any fundamental shift.

Mr. Held, in a recent letter to Congress, Frank Kendall, chair of the Nuclear Weapons Council, noted, "As you are aware, several risks have been identified that may affect realization of this strat-

egy and NNSA's ability to execute the SSMP, as written, including a shortfall in out-year funding and the failure to achieve assumed savings through management efficiencies and workforce prioritization actions."

Would you agree with that cautionary warning? And could you identify some of the risks to executing your mission if these shortfalls were to continue?

Mr. HELD. Yes, sir. I think, in the fiscal year 2015 SSMP, which has just been delivered to the Hill, on the first page you get the—a graphic showing the modifications in our weapons, the implementation of the 3+2 strategy. We are still with the 3+2 strategy, but we've flattened it out, for budgetary reasons.

If we—if more budgetary tightening constraints are applied, we will break the 3+2 strategy. We will break the 3+2 strategy. That will have implications for our nuclear deterrent, and it will also have implications for our ability to reduce the size of the stockpile. The 3+2 is—returning to Senator Udall's—actually knits those two missions together. We have a safe, secure, and reliable deterrent based on a smaller number of nuclear weapons. We have more budgetary tightness, that program is at risk. Yes, sir.

Senator VITTER. So, let's say, just for the sake of discussion, this first 3-year experience, \$2 billion short, let's say we did that again in the next 3 years. I assume that would certainly cross the line you're talking about.

Mr. HELD. The—that will put the Nation in a very difficult position, yes, sir.

Senator VITTER. And even if we did half of the shortfall—let's say, a billion dollars short in the next 3 years—and I would note that, in contrast to that, fiscal year 2016 and 2017, we're supposed to be ahead, trying to make up ground—ahead of the original commitments, trying to make up for the last few years. But, let's say 2015, 2016, 2017, we're \$1 billion short of the original commitments, the top line. I assume that would be serious.

Mr. HELD. It would be serious, and the—my close colleagues in DOD will focus first on the weapons side. What—and most certainly we will do that, as well. An area of increasing concern for me is nuclear safety. Our infrastructure, our—enriched uranium in Oak Ridge is 70 years old. We can't wait until the year 2038 to get new facilities. The same thing with plutonium. So, nuclear safety is an increasing concern of NNSA, sir.

Senator VITTER. Okay. And again, I want to underscore the second half, the lower half of the chart is the results of these number shortfalls, funding shortfalls, specific delays, which are already here because of the first 3-year experience; but I assume you'd agree, going beyond those five delays to further delays, further shortfalls would be very serious.

Mr. HELD. What the—the implementation plan that's in the current SSMP is referred to as the DMAG option 1. And both DOD and DOE are quite firm that DMAG option 1 that's articulated in the fiscal year 2015 SSMP is really pretty rockbottom for us.

Senator VITTER. Okay.

Mr. HELD. It still meets the mission, our mission requirements, but it's—we're rockbottom at this point.

Senator VITTER. Right.

Final thought, Mr. Held. In terms of nuclear modernization, the President has pretty much drawn a red line, said “No development of new nuclear weapons.” If that weren’t—were not a policy and we were just setting about to achieve our deterrent and strategic objectives in the best, safest, most cost-effective manner possible, would we only talk about modernizing existing nuclear weapons, or would we possibly talk about developing new, safer, more technologically advanced nuclear weapons to achieve those objectives?

Mr. HELD. The plans that we have in the 3+2 strategy meet our nuclear deterrent requirements and meet our safety and security requirements. So, the 3+2 strategy will—

Senator VITTER. I’m glad they do, but that’s not answering my question.

Mr. HELD. Right.

Senator VITTER. So, my question is, If we didn’t have this doctrine, “No new weapons,” would we try to meet those requirements potentially in a different way?

Mr. HELD. I think, under the Nuclear Posture Review, it’s very important to make sure that we link the nuclear weapons mission with the nonproliferation mission. And that’s been one of the trade-offs that—or the compromises that we’ve made to make sure that there is a nuclear security mission that we are achieving, which we think we’re doing. The 3+2 strategy, we are—sincerely believe meets our weapons commitments as well as our nonproliferation and arms-control commitments.

Senator VITTER. Okay. Great. A second different way of not answering the question, but I’ll move on.

I’m concerned that we have a requirement, which I think is still the military requirement, of 50 to 80 plutonium pits per year, but now we’re basically talking about 30, with no plan in sight to go beyond that. What are we sacrificing at 30, and when might we have a plan in sight to go from 30 to 50 to 80, which is the requirement?

Mr. HELD. The—we are not sacrificing anything in nuclear deterrence, actually. The very good scientific and technical work has—a high level of confidence tells us that the—some of our existing systems are aging quite gracefully, more gracefully than we thought, actually. And so that the delay of the interoperable number 1 for 5 years does not have a mission impact, in terms of—

Senator VITTER. I don’t want to interrupt, and I’ll give you plenty of time, but wasn’t part of the idea behind the requirement—50-to-80 requirement, flexibility and potential to surge, if that was ever necessary, with changing circumstances?

Mr. HELD. Correct. Yes, sir.

Senator VITTER. Don’t you think we’re sacrificing something there?

Mr. HELD. It comes down to the timing of the various mission requirements and the—the pit production capacity is really tightly linked to the IW-1 needs. The IW-1, from purely a deterrent strategy—and this is a Nuclear Weapons Council decision, this is not mine or NNSA, specifically—but, because of the more age—graceful aging of the weapons, the urgency of the IW-1 is not—is urgent, and the reduced urgency of the IW-1 reduces the urgency of the

50-to-80 requirement. It doesn't eliminate the 50-to-80 requirement, but we have a little bit more time to get there.

Senator VITTER. Okay, thanks. I'm going to have to run to go vote, but I would still suggest we have less cushion, less ability to surge, less ability to react to—

Mr. HELD. I would agree with that, sir.

Senator VITTER.—changes around the world.

Mr. HELD. I would agree with that.

Senator VITTER. And I would suggest recent events with Russia, for instance, suggest that, you know, changes around the world may be more the norm than the exception.

Mr. HELD. I hear you, sir, and I would instinctively agree, yeah. I think we need to be careful about these things. And—

Senator VITTER. Thank you.

Mr. HELD. Thank you, sir.

Senator UDALL [presiding]. Thank you, Senator Vitter.

Administrator Held, thank you for your professionalism and for your thorough responses. I'm going to—

Mr. HELD. Thank you, sir.

Senator UDALL.—dismiss you and—

Mr. HELD. Okay.

Senator UDALL.—we wish you all the best of luck.

Mr. HELD. Thank you, sir.

Senator UDALL. And we'll call the second panel.

Gentlemen, good afternoon. We just had a vote on the floor. There may be subsequent votes. And, in that spirit, I'm going to ask each of you to be as concise as you could be. Of course, we'll put your entire statement in the record. The reason I asked for you to consider short statements is so we can turn to some questions and give-and-take between the committee and you, the three of you.

So, with that, I—let me start by recognizing Admiral Richardson, and—welcome to the committee.

**STATEMENT OF ADM JOHN M. RICHARDSON, USN, DIRECTOR, NAVAL NUCLEAR PROPULSION PROGRAM, AND DEPUTY ADMINISTRATOR, OFFICE OF NAVAL REACTORS, NATIONAL NUCLEAR SECURITY ADMINISTRATION, DEPARTMENT OF ENERGY**

Admiral RICHARDSON. Thank you, Mr. Chairman.

It's a privilege to testify before you and the committee once again. I'm very grateful for the consistent and strong support of this subcommittee for Naval Reactors, and I look forward to the discussion of our fiscal year 2015 budget request.

My 2015—fiscal year 2015 budget request, at \$1.4 billion, enables me to meet my primary responsibility to ensure safe and reliable operation of the Nation's nuclear-powered fleet. My fiscal year 2015 request is \$282 million higher than my 2014 appropriation. This increase directly supports our increased workload, including three discrete national priority projects and sustaining the program's technical support base. The three projects include designing a new reactor plant for the *Ohio*-class SSBN replacement, refueling a research and training reactor in New York, and replacing the spent-fuel handling facility in Idaho. The funding for the program's

technical base, about \$950 million, is absolutely essential, providing for resolution of emergent fleet issues, spent nuclear fuel management, technology development, and operation of the prototype research and training reactors. It also provides my foundational capabilities, such as security, environmental stewardship, and laboratory facilities. In short, my technical base at my laboratories is the intellectual engine that drives safe, reliable, and responsible operation of the nuclear-powered fleet, past, present, and future.

\$156 million of my fiscal year 2015 request funds the new reactor plant for the *Ohio*-class replacement submarine. This new propulsion plant includes a reactor core designed to last the entire lifetime of that ship, 42 years, without needing to be refueled, and will save the Navy over \$40 billion in lifecycle costs.

The refueling request—the request for refueling and overhaul of our land-based prototype is essential to providing the technologies for the life-of-ship core, as well as training about 1,000 nuclear operators per year for the next 20 years.

The fiscal year 2015 request for the spent-fuel handling recapitalization project, about \$145 million, is required to refuel aircraft carriers and submarines, providing a safe and effective means of processing and putting their spent fuel into dry storage. The existing expended-core facility is close to 60 years old, is the oldest spent-fuel pool of its type in the country. It's showing its age, including leaking walls and cracked floors. While operated safely and responsibly, that's getting harder every year. The new project has already been delayed by 4 years, requiring that I purchase \$350 million of temporary storage containers that I do not otherwise need. Without funding a New START authority in fiscal year 2015, I fear this project will be delayed indefinitely, incurring further unnecessary costs of at least \$100- to \$150 million a year for further temporary storage.

Mr. Chairman, at the fiscal year 2015 requested funding level, Naval Reactors can safely maintain and oversee the nuclear-powered fleet. We can be good stewards and—of the health of our people and the environment. We can make critical progress on the nation's—on the Nation's future strategic deterrent. We can continue to deliver trained operators to the fleet. We can renew progress on the spent-fuel handling facility and keep our submarines and carriers at sea. Most importantly, we'll be able to attract and retain the incredible people that design, operate, and maintain the Nation's nuclear-powered fleet. Without them, we can do nothing meaningful. With them, the possibilities are endless.

With the sustained support of this subcommittee to our work, I will continue to lead my team to execute our work on time and on budget, and will search tirelessly for the safest and most cost-effective way to support the Nation's nuclear-powered fleet.

I thank you again, and I'm ready to respond to questions.

[The prepared statement of Admiral Richardson follows:]

Senator UDALL. Thank you, Admiral Richardson.

Dr. Cook.

**STATEMENT OF HON. DONALD L. COOK, DEPUTY ADMINISTRATOR FOR DEFENSE PROGRAMS, NATIONAL NUCLEAR SECURITY ADMINISTRATION, DEPARTMENT OF ENERGY**

Dr. COOK. Chairman Udall, in respect to the time, I'm going to sharply abbreviate my remarks.

I'd like to point out, it is worth noting the President's budget request of 6.9 billion for Defense programs' portion of the weapons activities account includes an increase of \$500 million, or 7.8 percent over fiscal year 2014 enacted levels, despite the fiscal constraints of the Bipartisan Budget Act. I'd like to very quickly emphasize where we're going with the 3+2 plan that Administrator Held laid out, supported by STRATCOM, Nuclear Weapon Council, and all of its entities.

Today, we're continuing our work on production of the W76 life extended warheads. We will complete that work by the end of fiscal year 2019. The B61-12—mod 12 LEP—is on track. It's now in the third year of full-scale engineering, and it is proving to be very highly successful, to date. In the budget request, the budget that we have will now begin to ramp up initial production at the NNSA production plants, preparing for preproduction engineering activities in fiscal year 2016, leading to a first production unit in March of 2020.

Finally, the W88 alt 370, an alteration that updates the Army fusing and firing unit, is also progressing well for the Navy.

While I could go further, I'll say we have clear actions undertaken in infrastructure and development. And I'd like only to highlight that, although we talk about responsive infrastructure, what we are most interested in moving is a responsive enterprise that includes the human element as well as the infrastructure.

With that, I'm happy to take questions.

[The prepared statement of Dr. Cook follows:]

[SUBCOMMITTEE INSERT]

Senator UDALL. Dr. Cook, thank you so much.

Mr. Owendoff.

**STATEMENT OF JAMES M. OWENDOFF, ACTING PRINCIPAL DEPUTY ASSISTANT SECRETARY, OFFICE OF ENVIRONMENTAL MANAGEMENT, DEPARTMENT OF ENERGY**

Mr. OWENDOFF. Good afternoon, Chairman Udall. I want to thank the committee for their support for the Environmental Management Cleanup Program. I, too, will be short, sir.

Our request is for \$5.3 billion for Defense-funded activities. It'll allow the Environmental Management Program to continue the safe cleanup of the environmental legacy brought about from 5 decades of nuclear weapons development and government-sponsored nuclear energy research.

The President's budget will provide for treatment of 900,000 gallons of liquid waste at our Idaho facility; continue the waste treatment plant at the Hanford site; at Oak Ridge, it'll allow us to begin design on mercury cleanup; and, at Savannah River, on the high-level liquid waste tank treatment there.

EM continues to pursue the cleanup on three overarching principles. Safety is first, then our commitment to our regulatory commitments, as well as good stewards of the financial resources.

I want to give you just a quick update on the situation at the waste pilot plant. As you mentioned, Mr. Chairman, there have been two recent safety events at the plant. The first occurred on February 5th, when the flammable residues on the surface of a salt truck caught fire; a second, which occurred late on the night of the 14th, was a radioactive contamination event in which some contamination became airborne underground. Although no one has been harmed by either event, we take both very seriously and are committed to identify, acknowledging, and fixing any underlying shortfalls in our policies.

In the meantime, the contamination event has the potential to affect other DOE sites that are preparing their transuranic waste for disposal at WIPP. We are working to assess the potential impacts and make contingency plans to mitigate those impacts, if necessary.

For a status, we are fulfilling our commitment to the State of New Mexico to ship transuranic waste from the mesa to the staging storage facility in Texas. We have also made several entries into the underground to begin assessment of the contamination levels. We are proceeding in a disciplined manner to ensure the health and safety of the public and the workers.

In closing, I want to thank the committee for their time, and I want to acknowledge, certainly, the significant progress that we've made in the last quarter century in the cleanup program.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Owendoff follows:]

Senator UDALL. Thank you, Mr. Owendoff.

Dr. Cook, let me start with you. I asked you this question a year ago, and I want to make sure we'll still get the same answer. We're embarking on a life extension program of the B61 gravity bomb. The number of B61 weapons will be reduced by 50 percent, I think, if I'm right, by—as a result of this life extension program. Your estimate's on the order of \$8 billion for the life extension program, and the informal DOD estimate was 10 billion. Is the program cost still around \$8 billion? Second, can you reduce the costs further? And then, third, is it adhering to schedule?

Dr. COOK. So, you know, in order, the cost is—it remains in the \$8 billion range. I've signed out, at this point, three selected acquisition reports. These are required by Congress. They're quarterly reports. And the number has not changed, and the schedule has not changed since the 1st. So, that stays on schedule.

You're correct that the result will be that we not only reduce the number of air-delivered bombs by a full factor of 2, but this sets the stage to retire the last of the megaton-class bombs in America's deterrent, the B83. Additionally, it will reduce the amount of special nuclear material in the air-delivered bomb leg by more than 80 percent. This comes back to Administrator Held's comment about the integration between the Defense programs and nonproliferation.

Have I answered everything you wanted?

Senator UDALL. I think you did, thank you.

Dr. COOK. All right.

Senator UDALL. Admiral Richardson, let me ask you a question tied to the Idaho National Laboratory. The Naval Reactors is pro-

posing to replace the spent fuel handling facility at Idaho National Laboratory. Suggestions have been made that other spent fuel storage facilities at the Laboratory, such as the Idaho Nuclear Technology and Engineering Center, can perform this mission. Could you explain whether this existing facility is suitable, or not, and why?

Admiral RICHARDSON. Thank you, sir.

In short, that existing facility is not currently suitable for the mission of handling spent fuel from our program. When we undertook this mission to consider options, the best way forward to recapitalize our spent fuel handling facility, we did that business case in 2009. We considered the full range of options at that time, including the—upgrading our existing facility or using other facilities, like the one at INTEC, which is the one you referred to. That analysis concluded that, by far, the most cost-effective way and the most effective from a process standpoint was to recapitalize the facility on our Naval Reactors facility on the Idaho National Lab. There would be significant modifications required if we were going to use an existing facility. The cost of those modifications would exceed the cost to do a new facility, and would require that we do that work in—with radiological controls, which would increase the risk, as well. So, the business case pointed us to a new facility.

Senator UDALL. And I'd follow up: When it comes to Idaho, have there been effects on the deployed nuclear fleet because of the delay in replacing the existing fuel handling facility in Idaho?

Admiral RICHARDSON. Sir, to date we have managed those delays, but that has come at an increased cost. And so, instead of moving spent naval nuclear fuel into that facility, we have instead had to buy temporary storage containers that will hold that fuel until the new facility is built. So, that's about \$100 million a year in cost for containers that I don't need. In short, we're at a position right now that it costs more to delay that facility than it does to just get on and do the work, because of these temporary containers.

If—going forward, the other thing that we have to consider is, the current facility is aging, and, you know, as I said, it's one of the oldest facilities of its type, and, at some point, it's just going to be unsuitable for further operation. And, at that point, we will have no other way but to impact the fleet.

Senator UDALL. Let me turn to Mr. Owendoff. And I want to—I wanted to ask you a little bit more detail about what's happened at WIPP. Do you believe, given the recent Accident Review Board's findings—was there adequate safety training of workers in the maintenance of equipment at WIPP?

Mr. OWENDOFF. No, sir, that has been demonstrated as being inadequate. That's one of the things that we are—have already started on, is the training of those individuals and going through and revamping all of our maintenance procedures and the safety culture, sir.

Senator UDALL. Referring to the same Accident Review Board, do you believe the Contractor Assurance System was effective at WIPP?

Mr. OWENDOFF. No, sir, it was not.

Senator UDALL. I would like to acknowledge the important role that WIPP played in the cleanup of the Rocky Flats Nuclear Facil-

ity, which is in my home State of Colorado. I also live within a few miles of that facilities, so I know all of my neighbors appreciate the fact that the WIPP facility was brought online, that the State of New Mexico posts that important facility. Having said that, we've got work to do, obviously, based on what happened—

Mr. OWENDOFF. Yes, sir, we sure do.

Senator UDALL.—the Review Board demonstrated.

Let me turn back to Dr. Cook. I want to ask you a question tied to the interoperable warhead. I think you're proposing to delay the warhead by up to 5 years. This warhead was to combine the W88 submarine warhead with the W78 ICBM warhead in order to reduce the total number of warheads in the stockpile. Can you explain why the delay occurred? And by the time we're ready to start this program, we will have finished replacing the fuses on the W88 submarine warhead, which is in relatively good shape. Given that, wouldn't it make more sense and be less expensive to consider simply life-extending the W78 warhead? So, two questions.

Dr. COOK. Sure. On the first question, it was a joint agreement at the Nuclear Weapon Council, followed by a meeting at the DOD Deputy Managers Action Group. The set of agreements resulted in keeping the W76 life extension moving ahead at full speed, increasing the cost, year per year, but according to the projection, so that we could execute the B61-12 life extension, because B61s are the oldest weapon system in our deterrent. And then, the third part, a strong commitment to doing, just as you say, the W88 arming, fusing, and firing unit. But, given the amount of money that was available then, that required a deferral of the first interoperable by 5 years, and it required a deferral of the long-range—I'm sorry, of LRSO, the long-range strike option, or the cruise missile replacement, by a time of up to 3 years. So, that was a joint agreement.

Now, with regard to the W88, yes, we'll—we will be modernizing that, but they're—we—through the surveillance program, we found that both the 78 and 88 are aging as predicted. We have good stockpile stewardship tools. We believe those systems will be good out through 2030, and that's why we've set, collectively, the timing for the interoperable warhead at that point.

A key part of the interoperable warhead is to improve the safety. There was an earlier question. And, given that we can put the 78 and 88 both on insensitive high explosives, that would be very strong and important improvement in safety.

Senator UDALL. Thank you for that update.

Admiral Richardson, let me come back to you to talk about the status of the *Ohio* ballistic submarine reactor. You're developing the reactor for the replacement to the existing fleet of *Ohio* submarines. I understand there might be delay of up to 6 months due to a funding shortfall. Could you comment?

Admiral RICHARDSON. Sir, I was—I am managing a funding shortfall in my fiscal year 2014 budget. A portion of that total shortfall, which was \$150 million, about 100 million of that was marked against my operations and infrastructure budget, and \$11 million of that money was—prevented me from buying a high-performance computer that I had scheduled to buy in fiscal year 2014.

Part of the capacity of that high-performance computer was being allocated against the *Ohio* replacement reactor design. By

virtue of being able to be—do more sophisticated modeling in that computer, we had saved about \$40 million in—by avoiding building prototypes and doing actual testing.

By virtue of not being able to purchase that computer, I am about 6 months behind right now. If I get funded in fiscal year 2015, though, sir, I want to make it clear that I believe I can make that difference up, keep the project on schedule, be ready to award the building contract on schedule, and keep this top national priority on track.

Senator UDALL. Okay, thank you for that update.

Admiral RICHARDSON. Yes, sir.

Senator UDALL. Mr. Owendoff, let me come back to you and focus on whistleblowers at Hanford. I'd like your help here. And let me lay out the predicate. So, my understanding is that the contractors reimbursed for reasonable costs under the current contract structure at Hanford; for that matter, at most other cleanup sites. This seems to allow reimbursement of lawyers' fees in cases involving whistleblowers, which shifts the cost burden against them, since they have to pay for their own lawyers' fees. Do you have any recommendations for the subcommittee to make this burden equitable between parties?

Mr. OWENDOFF. Mr. Chairman, I think that's a question I need to take back. I know that's been a question before, and I know the Department is working on an answer for that issue, sir. So, if I could, I'll take it. I don't have any recommendations at this time.

[The information referred to follows:]

[SUBCOMMITTEE INSERT]

Senator UDALL. If I might, let me stay on Hanford.

Mr. OWENDOFF. Yes, sir.

Senator UDALL. I felt, referencing Rocky Flats again, that, because we were at the head of the line, we, in Colorado, would work with other States all over the country to help them in their cleanup efforts. Hanford is probably the most expensive and the thorniest and the most technologically challenged, just due to the scale and also the effect on the Columbia River, potentially. That's not to downplay any of the other sites.

With that as a backdrop, it's my understanding you're now considering an option to treat low-level waste at Hanford, which comprises 90 percent of the bulk volume of the storage tanks—my understanding is, this will involve another pretreatment facility, in addition to the one that's already been under construction for the main facility. What's the status of the new pretreatment facility, and how much will it cost?

Mr. OWENDOFF. Sir, we're in the midst—we submitted a data sheet for that, a construction data sheet for that, as part of the 2015 budget. And there is a cost range that I want to say is about \$300 million—

Senator UDALL. Yes.

Mr. OWENDOFF.—roughly. But, it's very small when you compare that to the main pretreatment facility that will serve as the bulk of the material. We believe that, by getting this first facility, the low-activity facility, which is the lowest in radioactivity level, we can get that up and running and start making glass. The next

more complex facilities are the high-level waste and then the very large pretreatment facility.

So, we believe this is the right way to go, get started. The Secretary is, you know, really pushing us to get that low-activity waste facility up and running, sir.

Senator UDALL. So, as a follow-on, more on the technological side, we're going to vitrify some fair amount of that waste? Is that the plan?

Mr. OWENDOFF. Yes, sir. In fact, it's about a 20-to-1 low activity that will stay on site vitrified. And then the high activity, which will go ultimately to a repository. So, that's a higher activity waste. Both will be vitrified into glass.

Senator UDALL. Dr. Cook, let me come back to you and—with a question about Los Alamos. We have worked, through the subcommittee and members of the full Senate, to ensure we continue to develop a strategy to replace the plutonium facility at Los Alamos. It looks like, with the help of DOD, we have a way forward that would involve using smaller modules constructed in stages. I think the forecasts are, we could save several billion dollars. Are you committed to that approach? And what stages do you still have to pursue to begin construction of the smaller facilities? And then, when would construction begin?

Dr. COOK. Sure. We are committed to the overall approach. So, to run through it very quickly, the DOD CAPE, with support by NNSA, went through a business-case analysis for the plutonium strategy. This was endorsed by the Nuclear Weapon Council. And it has three phases:

The first phase, to provide capabilities in an existing building, brand-new, the radiation lab, put additional tooling in that building to handle a large part of the analytic chemistry work.

The second phase is to do some retooling of the existing PF-4. We've determined that there are some missions that we no longer need; therefore, older contaminated equipment can be pulled out; and, with about a quarter of the space of that facility, we can put in new tooling that will support the preparation to make pits and some material characterization.

The third phase of that is to reduce the material at risk in PF-4. That will give us a longer lifetime of PF-4. But, to do that, we have to create some new special-purpose modules that would be placed adjacent to PF-4 and connected via tunnels.

The budget request in 2015 through 2019 supports that strategy. So, we are committed to the strategy. We'll take the first and second phase sooner than we take the third phase, but we will be doing some conceptual activity for the new modules that we require in concert with other two phases.

Senator UDALL. Thank you for that update.

Admiral Richardson, in February it was revealed that there was a cheating incident with instructors at the Naval Reactors Training Facility in South Carolina. Can you update the committee on your investigation and the status of it and, if possible, how many persons are involved?

Admiral RICHARDSON. Yes, sir. You know, in February, as you said, sir, we were disappointed to learn that we did have a—an in-

cident with cheating amongst the instructors down in our school in Charleston, in our training reactor.

Senator UDALL. Yes.

Admiral RICHARDSON. We took—I took two immediate steps. One was to ensure ourselves and the country that the reactors remain safe. We were able to do the analysis and convince ourselves beyond a shadow of a doubt that the reactors did remain safe. The second action I took was to dispatch an admiral to go down and lead the investigation. That investigation is complete, and has been forwarded to me. We're in the deliberative process of working through that investigation, and our way forward has—really taking shape along three lines of effort:

One line is just a purely technical effort. It should be near impossible these days to cheat on a written exam. The incident was limited to a written exam for one qualification down there. And, with encryption and password protection and those sorts of measures, it should be technically almost impossible to cheat on a written test these days. And so, we're going to upgrade our technical program down there.

There will be some accountability for those who exhibited misconduct, so I'm really not at liberty to talk about the numbers at this point, because I'm in the middle of that process. But, as soon as I get through that, I'm committed to coming and providing you an update, and I will close that out with the final numbers.

The third and most important line of effort is really to examine our culture across the program so that we can do everything—ensure ourselves we're doing everything to strengthen, you know, the character and the moral courage of our team so that it becomes part of our—of the atmosphere in our program, that it would be unthinkable to do anything that would compromise the integrity of the program or the personal integrity of any of our people inside of it.

And so, we are—you know, I've talked to people across the Navy, experts outside the Navy, in academia. We're really leaving no stone unturned. I've already held a summit of all of the major commanders of nuclear-powered warships, and we are getting after this aggressively to make sure that we not only are very clear about teaching the principles of why it is important to be truthful and honest in the program, but also strengthening, you know, the character of our team and minimizing to the point of eliminating any obstacles that would make it more difficult just simply do the right thing. And so, by virtue of that comprehensive approach, we are looking forward to improving across the program.

Senator UDALL. Thank you for that update. And I know that, for the large, large majority of the men and women who serve in this important area, that they had nothing to do with what happened and this doesn't reflect on them. And I know, under your leadership and with the subcommittee's partnership, we will look at the culture, as you pointed out, and make the changes and mete out whatever punishment's necessary, and then move forward. Because I know the—again, 99 percent or more of your personnel are all in and comply with what we expect them to do. I—and I appreciate the update.

Admiral RICHARDSON. Thank you, sir. And I appreciate that endorsement and validation. We expect those folks to do that, and we take no comfort—

Senator UDALL. Yes.

Admiral RICHARDSON.—in the fact that this is a small number of people. This is still a big problem we're paying very close attention to. It has my personal attention daily.

Senator UDALL. Yes, I know you are. And again, I don't want it to reflect on all the people who have worked—

Admiral RICHARDSON. Yes, sir.

Senator UDALL.—150 percent.

Admiral RICHARDSON. No, most of those folks are very disappointed in the action—

Senator UDALL. Yes.

Admiral RICHARDSON.—of this very small cadre of people.

Senator UDALL. Yes.

Admiral RICHARDSON. Yes, sir.

Senator UDALL. Let me move back to nuclear fuel. The status of highly enriched uranium—Admiral Richardson, based on current fleet projections, when do you believe we'll have to seek a new supply of the highly enriched uranium used in your fleet?

Admiral RICHARDSON. Sir, by current arrangements, we are—we have a sufficient supply of highly enriched uranium, out to about 20—the year 2064. Beyond that, really, you know, no solution in sight, you know, pending some other arrangement or some technology for developing more highly enriched uranium.

Senator UDALL. If the committee will suspend for a minute. [Pause.]

All right. Dr. Cook, you're the winner of the jackpot that—I think you're going to receive the last question of the hearing. [Laughter.]

Yes, sir.

Senator UDALL. Can you explain to the committee whether the life extension of the B61-12 will enable you to retire the W83 gravity bomb or whether it will be retired independently of the B61-12?

Dr. COOK. It is required, it is linked. It was a difficult set of discussions to go through with the Nuclear Weapon Council. And the conclusion was that, once successfully implemented, with the first production unit, as I said, March 2020, a few years after that, once we have what we call stockpile returns and we're satisfied that the 61-12 performs well in service, the Nuclear Weapon Council is fully prepared, and intends, to retire the B-83.

Senator UDALL. Thank you for that.

And I'm tempted, because Admiral Richardson is here, to get his opinion on SMRs and their application in the civilian and domestic power arena. That's long been an interest of mine. I know we are doing research at the Department of Energy.

And, Admiral, would you have an opinion or any insights on the suitability of such reactors on land and as supplements to existing power plants or as substitutes for power plants that might be retired?

Admiral RICHARDSON. Senator, we have been following the development of small modular reactors closely. It might be most appro-

priate, sir, if I came in and I gave you a brief on what our opinions on that are and where we see that going.

Senator UDALL. I would very much welcome that, and——

Admiral RICHARDSON. Yes, sir.

Senator UDALL.—I thank you for the offer.

Admiral RICHARDSON. Yes, sir.

Senator UDALL. Senator Vitter asked his questions, and he, I think, is indisposed on the floor.

I'm going to bring the hearing to an end. I want to thank all of you for your time and your expertise and your patriotism and your hard work.

We'll leave the record through the beginning of next week, through Monday.

The Subcommittee on Strategic Forces is adjourned.

[Whereupon, at 3:46 p.m., the subcommittee adjourned.]