

HEARING TO RECEIVE TESTIMONY ON STRATEGIC FORCES PROGRAMS OF THE NATIONAL NUCLEAR SECURITY ADMINISTRATION AND THE DEPARTMENT OF ENERGY'S OFFICE OF ENVIRONMENTAL MANAGEMENT IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2014 AND THE FUTURE YEARS DEFENSE PROGRAM

WEDNESDAY, MAY 8, 2013

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

The subcommittee met, pursuant to notice, at 2:45 p.m. in room SR-232A, Russell Senate Office Building, Senator Mark Udall (chairman of the subcommittee) presiding.

Committee members present: Senators Udall, Donnelly, and King.

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

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

Staff assistants present: Lauren M. Gillis.

Committee members' assistants present: Casey Howard, assistant to Senator Udall; Marta McLellan Ross, assistant to Senator Donnelly; and Lenwood Landrum, assistant to Senator Sessions.

OPENING STATEMENT OF SENATOR MARK UDALL, CHAIRMAN

Senator UDALL. Good afternoon. The Subcommittee on Strategic Forces will come to order.

This afternoon we will receive testimony from the National Nuclear Security Administration regarding their fiscal year 2014 budget request. We will also hear from the Department of Energy's Office of Environmental Management and the GAO.

As I just did earlier, I want to thank all of the witnesses or taking time out of your busy schedules to appear today, and I hope this hearing will be informative not only for the Senators in attendance today but to you all in understanding our views on different aspects of your programs.

I mentioned to all of our witnesses that it is a busy day on the Hill. I anticipate a Senator to drop by, but that is no indication of the importance that we all hold the work that you do in.

We have two panels today. The first panel will feature the acting Administrator of the NNSA, Ms. Neile Miller. And for the second panel, we will have Dr. Don Cook, the Deputy Administrator for Defense Programs; Admiral John Richardson, the Deputy Administrator for Naval Reactors; Mr. Dave Huizenga, the Senior Advisor for Environmental Management; and Mr. David Trimble, the Director for Natural Resources and Environment of the General Accountability Office.

In terms of logistics, I thought we could give Ms. Miller a half hour to about 3:15. Now, let us see. We are going to adjust that, but about a half hour. And then the second panel will have 45 minutes to an hour. This should have us finishing up 3:45 to 4 o'clock. We want to make sure people have time to really explore the topics today.

With that, let me make a few opening remarks.

For the fiscal year 2014, the budget request for the NNSA is \$7.868 billion, which is an increase of 4.1 percent relative to fiscal year 2012. Accounting for shifts in budget categories, the request is about 2.7 percent below section 1251 report number of \$8.4 billion. While reductions are notable, they are less than other programs are facing in our current budget climate, especially with sequestration being in effect.

For the Naval Reactors program, the fiscal year 2014 budget is \$1.246 billion, which is an increase of 15.1 percent. That increase is mainly for refueling a test and training reactor and construction of a spent fuel handling facility, both of which are important to DOD fleet operations.

The Office of Environmental Management request is \$5.62 billion, down 1.2 percent from fiscal year 2012. Not accounted for at the present time is how fiscal year 2013 reductions due to sequestration will affect these programs in fiscal year 2014 and beyond. I understand the NNSA will lose about \$600 million. The Environmental Management Program will lose about \$420 million, and assuming a similar cut of 8 percent, that would yield a reduction for naval reactors of about \$87 million.

There are several issues I would like to explore in this hearing.

First, I would like to know from both panels what effects sequestration will have on programs already underway, whether in terms of delays in achieving milestones or in the ability to affect out-year schedules. It seems clear that the effects of sequestration will compound themselves in the out-years in ways that will increase time and cost.

Second, I would like to know from Administrator Miller what steps she is taking to control the costs of the B61 program and other life extension programs. I understand that Director Miller is working with the DOD Cost Analysis and Program Evaluation Office, better known as CAPE, but if we are living with two estimates, one by the NNSA and one by CAPE, we will need to know which one Congress should rely on.

Third, I would like to understand from Mr. Huizenga what is being done to keep a bad situation from getting worse with the waste treatment plant, especially regarding the ability to empty leaking tanks and begin treating at a minimum low-level waste from those tanks. We have a special commitment to all the commu-

nities where the DOE is cleaning up former defense sites and we need to keep it.

Fourth, as always, I would like to hear from the GAO on their observations about what could be improved with existing projects at NNSA and the Office of Environmental Management. The NNSA has shelved two major construction projects. The chemistry, metallurgy research replacement project was stopped when it was 70 percent complete. \$450 million had already been spent. The pit de-assembly conversion project was also stopped after spending \$400 million. Combined, that is close to a billion dollars.

Obviously, the waste treatment plant is another category, but I suspect there are common problems underlying all three projects that the GAO can give recommendations on. My hope is that those recommendations will provide lessons learned before embarking on some of the life extension programs over the next 5 years.

Again, let me thank everybody for coming. I see we have been joined by my colleague from the wonderful State of Indiana, the Hoosier State, Senator Donnelly. Senator Donnelly, if you had any opening remarks you would like to make, the floor is yours.

Senator DONNELLY. No, Mr. Chairman. I am looking forward to the testimony.

Senator UDALL. Great. Thank you for being here.

Administrator Miller, the floor is yours. We look forward to your comments.

**STATEMENT OF NEILE L. MILLER, ACTING ADMINISTRATOR,
NATIONAL NUCLEAR SECURITY ADMINISTRATION, DEPARTMENT OF ENERGY**

Ms. MILLER. Thank you, Chairman Udall and distinguished members of the subcommittee. Thank you for having me here today to discuss the President's fiscal year 2014 budget request for the Department of Energy's National Nuclear Security Administration.

Your ongoing support for the women and men of NNSA and the work that they do and your bipartisan leadership on some of the most challenging national security issues of our time has helped keep the American people safe, helped protect our allies, and enhanced global security.

The President's \$11.7 billion fiscal year 2014 budget for NNSA allows us to continue to implement his nuclear security agenda. As you know, we are also deeply engaged in efforts to realize President Obama's vision for a world without nuclear weapons, free from the threat of nuclear terrorism and united in our approach towards shared nuclear security goals.

Most recently in his 2013 State of the Union Address, the President continued to highlight the importance of his nuclear strategy and pledged to "engage Russia to seek further reductions in our nuclear arsenals, and continue leading the global effort to secure nuclear materials that could fall into the wrong hands because our ability to influence others depends on our willingness to lead and meet our obligations."

His budget for fiscal year 2014 reaffirms the President's strong support for our nuclear security missions and provides us with the resources we need to further this work.

I want to assure you that the NNSA is being thoughtful, pragmatic, and efficient in how we achieve the Nation's nuclear security objectives and shape the future of nuclear security. As someone with many years of Federal Government experience at the nexus of programs and budget, I can tell you that while we are challenged to be successful in a time of fiscal austerity and budget uncertainty, we are also dedicating ourselves to driving efficiencies into our programs so that we can make the best use of the taxpayer dollars with which we are entrusted. And we are holding everyone from our contractors to our Federal employees accountable. Above all, we are challenging ourselves to reject ways of doing business that are holding us back from this but which have survived long into the post-Cold War era simply because they are "the way we have always done it."

The need to strategically modernize our facilities, infrastructure, and weapons systems is urgent, but so is the need to modernize how we do what we do. We must and we are evaluating our programs and challenging the assumptions for all of our programs and projects to rethink their underlying premises and ensure that we are charting a path to the future that is well reasoned, responsible, and reflects the best way of doing business today.

As the President has committed, the NNSA is working to make sure that we have the infrastructure, weapons systems, and the supporting science to certify the Nation's nuclear weapons stockpile that it needs through strategic modernization investments. We are working to implement the most ambitious nuclear nonproliferation agenda in the world.

Whether or not we were facing this moment's budget uncertainties and fiscal constraints, we have a responsibility to prioritize what we do and to do it in a way that makes sense not only to us but to you, to our partners at the Department of Defense, our international partners, and above all, to the American taxpayer.

To that end, we are working very hard to guarantee our ability to deliver the mission, something my colleagues throughout the nuclear security enterprise have consistently done for the Nation over the past 60-plus years. But we know that we have to be smarter, more unified, and more diverse both within NNSA but also more broadly within the larger deterrence and nuclear security community. If we all want to see the nuclear security agenda move forward—and it is my responsibility to ensure that it does—then we need to make certain that we are able to maintain essential enabling capabilities, including for plutonium and uranium, infrastructure to support the nuclear Navy, and strong national laboratories that are the backbone of the National security enterprise. And we must continue to chart the path of nuclear security together.

I have personally witnessed the evolution of these programs for many years from my positions both within the NNSA, as well as from other perspectives within the U.S. Government. The enduring partnerships between NNSA and DOD, between Congress and the administration, and between our own sites and headquarters are vital to getting the mission accomplished and maintaining the security of the Nation. NNSA cannot survive without them, and the United States nuclear deterrent depends on them.

Regardless of what organizational chart or where NNSA is aligned within the U.S. Government, we cannot do anything without the right people and the right processes in place. We are continuously seeking new solutions to improve the way we conduct business. To that end, I want to tell you about a few changes in the way we are doing what we do.

First, we reinforced our project management organization and performance through the establishment of an independent acquisition and project management group so that we could better drive performance and accountability in our construction projects. We were fortunate to be able to hire Mr. Bob Raines to head this new group. Bob, who has 25 years of experience at DOD's Naval Facilities Organization and several years reviewing DOE projects, has brought a new clarity and accountability to the way we approach acquisition across NNSA.

We have aggressively sought physical security improvements through the reform of how we promulgate security policy and assess performance at our sites. Mr. Steve Asher has come on board to act as our new Chief of Defense Nuclear Security. He is a retired Air Force colonel with 33 years of on-the-ground nuclear security experience with the United States Air Force.

We have also worked to improve how we plan and analyze our budget resources to ensure that we have what we need. I believe strongly that resource decisions should be transparent and analytically sound, driven by data as well as preference. By hiring Dr. Steven Ho and standing up our new Office of Program Review and Analysis, based on the approach taken by Department of Defense to prioritize needs, the Administrator will have an independent broker helping manage the budget process and independent analysis for NNSA programs on cross-cutting issues. Steve comes to us from the DOD CAPE where for the past year he led the cost study of the B61 life extension program.

Perhaps most significantly, we have realigned the Federal oversight of roles, responsibilities, and reporting of all of our sites and unified them in partnership in a line NNSA organization reporting to the Associate Administrator for Infrastructure and Operations, who is also my deputy, Mr. Michael Lempke. We are ensuring that we have the right people using the right processes in the right ways across the NNSA. Mission and mission support teams are equal, supporting each other's needs on everything from regulatory issues to contracting. You saw it with our Future Shaping Nuclear Production Office, which covers Pantex and Y12 without regard for geography. You can see it in our strong, unprecedented response to security lapses, and you can see it in our plutonium strategy where creative thinking across our enterprise has given us a path forward in a time of tight budgets. We are doing the work the American people need us to do, and the President's budget will allow us to continue to do that work. We at NNSA are working hard to align ourselves for the future, and your continuing support has been a vital part of that.

I again thank you for having me here today, and I look forward to answering your questions.

[The prepared statement of Ms. Miller follows:]

Senator UDALL. Thank you, Ms. Miller.

The subcommittee, as I mentioned, is proud to have Senator Donnelly here. Would you like to start with the first round of questions? I know your time is valuable.

Senator DONNELLY. Thank you, Mr. Chairman.

What are the implications for NNSA of having a lot of scientists who have never worked with the underground testing? How is that going to affect your operations?

Ms. MILLER. Thank you, Senator. That is actually a very good, interesting question.

Of course, we have now been without underground testing since 1992. So we have years of this. But as I think a number of us in the room know, none of us are getting any younger, and that means—

Senator DONNELLY. That would be true for me as well. [Laughter.]

Ms. MILLER. So I think that it is clearly something that is at the front and center for those of us concerned with the future of the stockpile as we look to make sure that, first of all, there is knowledge transfer, first and foremost, and there has been quite a lot of that. But also, as you know, the stockpile stewardship program that began in the 1990s really was based on the idea that we would hopefully not to go back to underground testing and we needed to find a way to make sure we could do what we have to do with the stockpile without it.

So I think that there has been a terrific effort, and we have seen actually I think the kinds of results that people maybe did not anticipate how good they would be from the modeling and simulation work that has gone on over the last number of years, and we continue to develop that. It is something that we know is absolutely critical to not only the stockpile of today but to the extended life of the stockpile, all of the science base for that.

Senator DONNELLY. And in regards to the stockpile, what is your confidence level given the continued use that we have had of life extension programs?

Ms. MILLER. First of all, as you know, it is the job of the head of STRATCOM, as well as the laboratory directors, to write a letter to the President every year to discuss the state of the stockpile in their opinion, which is certainly going to be more to the point than mine with their training.

But I would say that we, based upon what we, together with our laboratory directors, know are very confident in the ability of that stockpile to deliver as it has been promised to deliver. But we also, with regard to life extension programs, know that we are getting into a large cycle right now where we are going to have to master the life extension programs in order to be able to continue to assure that stockpile.

Senator DONNELLY. And in regards to physical security of the NNSA facilities, since the Y12 event, what have we done to try to make the facilities more secure?

Ms. MILLER. In the aftermath of the Y12 event, of course, there were a number of reviews that were conducted both on behalf of the Secretary of Energy, the Inspector General. There were a number of reviews done. But I think the one that had the most direct effect so far on the NNSA and how we do this was the review con-

ducted at the request of the former Administrator and myself by General Sandra Finan, who at that time was in the NNSA on loan from the Air Force—conducted a review of how we do what we do in the area of security. And as she very clearly stated, both in her report and in subsequent testimony, how we were doing security really was not serving anybody very well because it was so disconnected from what was actually—the parts of security, which is to say the physical security at the site on the ground, was disconnected from a headquarters group whose job was to promulgate policy. And it is why I chose to mention it specifically in the testimony.

What we have done to change this—I would point to two main things. First of all, it was the creation of that infrastructure and operations group to bring the field offices into the line of NNSA so that we can have a mechanism now to drive consistency in the application of policies across the sites, and you do not have sites that, for whatever reason might be for that site, has decided to take the policy and do it a different way. So that is one piece of it.

The other piece of it within the NNSA is to establish that strong security policy group which also has a strong assessment capability so that they can deliver the policy instructions and come back in and see how is it actually happening.

At the same time, on the contractor side—I mentioned in the testimony driving accountability with the contractor—this is absolutely critical, will be critical in the success because, after all, the protective force is contractor-based. So our deep involvement with our contractor partners on our expectations and also our assessment of their performance will be critical to this.

Senator DONNELLY. Thank you.

Mr. Chairman, thank you.

Senator UDALL. Thank you, Senator Donnelly. It is great to have you here.

Let me pick up on that particular theme, Administrator. Following the Y12 break-in by the 82-year-old nun and her colleagues, a principal finding was that there was lack of oversight by the NNSA and, in particular, the contractor assurance system whereby the contractor writes self-evaluations of their performance and then gives it to NNSA to help determine their award fee. Do you want to expound on what you are doing to ensure more rigorous oversight of this process?

Ms. MILLER. Yes. Thank you, Senator.

Senator UDALL. I know you would want to talk to this.

Ms. MILLER. I do. Thank you.

Again, I would start by saying that the incident at Y12—and this is probably true of whatever challenges the organization faces—is first and foremost a management issue and a management failure. And when you look to how to address this for the future, if you do not start from that premise, you may find yourself with many little fixes that do not, in fact, address the problem at its root.

To manage an organization in disconnect between the people in Washington and the people across the country I would say is a system that was appropriate and worked well for many years throughout the Cold War and certainly in a period where communications were what they were. But for us to drive accountability from the

Administrator on through the organization, we have to be organized and working together in a very different way.

The contractor assurance system, in and of itself, we believe is not—and we have had this reviewed by many people from the outside—conceptually is the right way to go. Certainly our laboratory partners are vocal about the need for them to be able to do their work without burdensome oversight. Of course, the devil is in the what is burdensome to whom.

I would say on our side what we believe is we need to be able to better train our staff, communicate what we mean by all of this, and make sure that the accountability is all up and down the NNSA, as well as in the contractors, so that that contractor assurance system does not equal a rubber stamp. I think we found ourselves in a place where we had many, many, many measures of effectiveness of the contractor, which did not necessarily tell you what was happening. That certainly was the case with security. And then we had people who, because communicating in such a large organization across so many places had been challenging to people for years, had not really driven an understanding of what it meant to operate under a contractor assurance system.

So all of those components are what we are working very hard to address, both organizationally driving the accountability and setting it up in a way that we can see it all and people are connected, but also that communications and training that the Federal staff need to be able to perform their oversight duties appropriately.

Senator UDALL. I very much appreciate your willingness to acknowledge this starts with management. What I think I hear you saying is that the contractor assurance system provides a valuable look from one point of view, but there have to be other checks and balances as a part of that system starting with management.

Ms. MILLER. That is exactly right, Senator.

Senator UDALL. I was the CEO of the Outward Bound School for years. Our focus was on safety, and whenever we had an incident, we did an internal review, as we called it. Then we had an external review to double check our assumptions, our facts, and our conclusions. And I think what I hear you saying is that approach has to be a part of what is put into place given what happened.

Ms. MILLER. That absolutely has to be a healthy look at it from both sides ongoing in all of these areas, security, safety, performance of the mission, and all of them.

Senator UDALL. In some cases, we would even have a third review in my situation.

Ms. MILLER. And I agree, and one wants to get that done before a problem not afterwards.

Senator UDALL. Thank you for that.

Let me move to the CAPE office. I know you mentioned you are standing up that operation. Can you talk a little bit about how that will be implemented?

Ms. MILLER. I can.

I would say that in the NNSA, while we have, since creation and as it was directed in the enabling statute, presented Congress with a 5-year budget, which is atypical in the Department of Energy where it is presented a year at a time, the actual exercise within the organization has really focused on the budgeting and execution

portion. The programming and planning has been not as strong as it needed to be. And what I found in the organization—and it was certainly not just me, but I have a budget background, so I noticed it particularly—is that decisions tended to be made very low level, which have a strong impact ultimately on resource decisions that the senior folks are left to deal with, in the end very little room to address issues. And to make decisions without good analysis, independent analysis, and hard data seems to me to not be in the best interest of the organization long-term, and in the end is less defensible certainly to Congress or anybody else.

So I felt very strongly that in addition to a very strong budget office, which the NNSA absolutely does have, this facility to have independent analysis was absolutely critical to the success of the organization both because we have large construction projects but also because we have large, ongoing projects such as the LEPs and so many other demands on us throughout the nonproliferation programs and all the other work the NNSA does, it is in the best interest of everybody if those resource decisions are made, again, based on good analysis. So it was very much a strong interest of mine to get this going inside.

Now, with respect to how this relates to DOD's CAPE, I had the opportunity, when I was still working at OMB in the mid-2000s working on the NNSA portfolio, to get involved with the CAPE and the NNSA together to begin to look at potential costs of modernizing the infrastructure. So I had a connection with the CAPE for quite some time and the way they do their business.

One thing I came to the conclusion in NNSA and that is with respect to cost analysis itself, the "CA" part of CAPE, I would argue that this capability, to the level that it is done in DOD is almost unique to DOD. Those people know how to do it. They have been doing it. They tend to stay put. And to create that out of nothing is difficult, very difficult.

And so instead, I had a very good relationship especially over the last year with the director of the CAPE, Christine Fox, with whom I conducted a long, in-depth analysis of our resource needs. We were able to come to a good arrangement wherein we in the NNSA can continue to use the DOD CAPE's cost assessment capability and eventually grow our own by training people over there. But for the "PE" part, the program evaluation and analysis, that part we could stand up on our own over at NNSA, and that was the shop that I just mentioned. And I think the two together give us what we need.

Senator UDALL. That is helpful, and I look forward to hearing more as that develops. And clearly, your background led you to see this and create a hybrid, if you will, approach.

Let us turn to the 's' word—it is not a four-letter word, but it feels like one some days—"sequestration." What effect will it have on your major programs in terms of schedule delays? And in particular, I am primarily focusing on the B61, the W76 and the uranium processing facility.

Ms. MILLER. I feel compelled, when I talk about sequestration, to talk about budget uncertainty overall. I would not be true to my budgeter background if I did not.

Budget uncertainty in my eyes starts, first and foremost, with the continuing resolutions that people live off of. So now I will layer sequestration on what we know as a fact of life.

Clearly, there is an effect on projects, especially the kinds of projects we run, whether they are construction projects, life extension projects, frankly projects that we have going in other countries to secure borders, to secure material. Anything that plans out over several years that has a path to a cost and now cannot meet the plan is, first and foremost, despite the mirage of a cash flow benefit, in fact will lead to higher costs for all of these projects by definition.

Senator UDALL. You are talking about CR's and sequestration.

Ms. MILLER. I would say for both, but sequestration on top of the planning challenges absolutely comes in and knocks us off our feet. I know you heard testimony yesterday from the Director of Sandia speaking very strongly about his concerns with respect to the B61 and the effect of sequestration. I spoke this morning for an hour with people from one of our communities that is absolutely reeling from being hit by sequestration and heard some really stunning stories of how individuals are not just on furloughs but people in businesses and how they are planning with their lives. And those are communities that we work closely with and we rely on to be strong for us in the work we need to get done. So I think the effect is profound and I am surprised that people do not get that.

Senator UDALL. Yes. I am tempted to try and categorize CR's and sequestration, which is worse, but I think they are both bad.

Ms. MILLER. I would rather not have either.

Senator UDALL. Yes. That is a job and responsibility we have yet to shoulder. We need to.

I am going to turn to a GAO recommendation that NNSA re-evaluate the award for the combined contract at Y12 and Pantex. Their principal finding is that the NNSA did not meaningfully assess—that is a quote, “meaningfully assess”—the estimated cost savings of some \$3.4 billion in the winning proposal especially since NNSA's own internal estimate assumed a savings from the combined contract of about \$840 million. Would you comment on the GAO finding?

Ms. MILLER. Senator, thank you. I will comment. I need to, of course, be careful about how I comment since this is still in open procurement. I will comment enough to say that we are announcing and have announced today that we will carry out a corrective action with respect to the GAO finding as they recommended. We, of course, were very pleased that GAO found, out of the 17 issues in front of them, 16 of them were not with merit. But on the one that they did find, we are going to carry out a corrective action on that. And the various affected parties have been informed today and we will proceed with the process on that directly.

Senator UDALL. I look forward to seeing that. That is a nice batting average, 16 out of 17, but I know you want to hit 100.

Ms. MILLER. I am from Boston.

Senator UDALL. I am staying away from that. The Rockies are my team except when you all come to town. [Laughter.]

You mentioned in your testimony we heard from the lab directors yesterday. And they are quite a talented trio, as you know. Dr. Mc-

Millan specifically indicated that you are all looking at a less costly strategy for the CMRR involving a series of modular buildings instead of a large one. Can you comment on your thoughts on this approach and whether it holds promise for providing flexibility and lower costs? And I know you mentioned, I think, a plutonium strategy. Again, please share your thoughts on all of this.

Ms. MILLER. Sure. Thank you.

First of all, I noted in your comments to open with, you mentioned what had been spent on the design of CMRR thus far, as well as the pit disassembly and conversion facility, again what had been spent on design. In both those cases, we did not proceed with construction.

So dealing specifically with the chemistry and metallurgy replacement building, I think like a lot of situations, budget crises drive you to work harder and sometimes better, and in this case I think better. We had a plan on the books for many years. It had not, frankly, been reassessed in light of a lot of things, and we found ourselves, as you know, with a rather large bill just at the time when the money became particularly tight. And that did cause us, together with our lab directors, to go back and review.

The approach that you heard about, the modular approach, is absolutely of great interest to us, but I will tell you that we are undertaking, with the CAPE, a business case analysis of that approach and a few others because we need this time to make sure that we have really looked at the options and did not just get behind the next thing that appeared and decided that that was the option.

Senator UDALL. We are going to move to the next panel, but I have two questions that I will put in the record. I know you will be willing to answer them for the record.

In particular, I want to just note your focus on the long-term vision I am learning at the helm of this committee and will draw some conclusions over time. But I think the President's goal of non-proliferation as a start and then ultimately a world that does not face the threat of nuclear weapons are worthy and important—I know there is broad bipartisan support for that approach. I think we should hold that as a goal. It is a long, winding road to reach it. It may take many generations, but I think it is crucial that we keep that. And I know that is at the core of your philosophy and you reflect the President's philosophy.

Ms. MILLER. Absolutely.

Senator UDALL. Thank you for appearing today. We look forward to working with you further.

Ms. MILLER. Thank you.

Senator UDALL. And you are free to do whatever else you have on your busy schedule. So thank you for being here.

Ms. MILLER. Thank you very much.

Senator UDALL. As the Administrator leaves, we will ask the second panel to come forward, and we will begin as soon as you all are ready.

Welcome, gentlemen. Thank you again for taking time out of your busy schedules to join the Strategic Forces Subcommittee. I think in the interest of time, we will move from my left to right, and if each of you would be willing to share a minute or 2 of

thoughts and then we will go right to questions. I want to make sure everybody has a chance to be heard, particularly in the question and answer period. Of course, if we do not get to everything that you would like us to know, the record will remain open for a number of days, not too many days, but will remain open for a number of days so you can submit additional comments.

So, Dr. Cook, we will open with you.

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

Dr. COOK. Chairman Udall and members of the subcommittee, I thank you for the opportunity to be here and testify. I will abbreviate my remarks as I go in the interest of time.

But I especially want to make the point that the NNSA has committed to strategically modernizing our nuclear weapons infrastructure, the nuclear weapons systems themselves, and the supporting science, all of which are required to ensure a safe, secure, and effective nuclear deterrent, and to continue to certify the stockpile without underground testing, as we have now done for 20 years in a row.

Within today's constrained fiscal environment, we have also closely scrutinized our strategies, plans, processes, and organization to ensure we make the most of our resources. Over the past year, we have worked very closely between NNSA and DOD, often through the Nuclear Weapons Council and the subordinate bodies. We have been engaged in a budget-driven requirements analysis, and this process of rigorous analysis has forged a stronger link between the two agencies, as well as improved the thought process and the ideas that we are bringing forward for execution.

As a result, some of the highlights are we have achieved a comprehensive strategy for the conduct of life extension programs across the stockpile. This has not existed before. We call this a 3+2 strategy, and I will elaborate on that in just a few moments quickly.

We have updated and have now a more complete plutonium strategy, as Administrator Miller just went through.

We have a refocusing of our science, technology, engineering, and infrastructure activities underway right now and are continuing to make sure that we align those activities with the needs of the life extension program for the capabilities that are most urgently needed.

And we have done a reorganization of the way in which we operate our facilities accounts. The operations of facility accounts now are separated into site infrastructure, which is broad, and nuclear programs, which is specific to nuclear programs.

We as well have a sizeable challenge on our hands, the significant effort to identify and implement management efficiencies, specifically \$320 million in amount in fiscal year 2014, building to \$2 billion over the 2014 to 2018 FYNSP. Each of these critical areas was determined after a considerable and deep effort, again, among the agencies with which we work.

So let me for a moment touch on a few elements pertinent to this discussion and questions you might have.

The 3+2 strategy is a strategy that will provide, in the course of time, three interoperable ballistic missile systems to replace the four not interoperable ballistic systems we have today and two legs of the deterrent. In addition, we will have two interoperable systems covering the air-delivered leg. That will include at least a bomb system and a cruise missile system.

With regard to the life extension programs, a very quick status is the W76 life extension program has achieved the full build rate of production. We are in steady state, or phase 6, and that effort will complete with all deliveries required for the Navy now by the end of 2019.

The W88 Alt 370 is a substantial update on the arming, fuzing, and firing needed for the W88 weapons system. It is also in engineering development at phase 6-3, and it is slated for a first production unit also in fiscal year 2019.

The B61-12 is now also in engineering development, continuing very well. We are pursuing option 3B. That was a decision made by the Nuclear Weapons Council. That has, again, a first production unit of fiscal year 2019 and an initial baseline remaining at about \$7.9 billion.

Very quickly, what I would like to address is there has been significant discussion of other options which were duly considered by the Nuclear Weapons Council and one that is attractive because of its lower cost. Triple Alt is an alteration of three specific components. While that would carry the B61 family forward for a few years and maybe as long as a decade, it would then need to be followed by a comprehensive life extension program under greater urgency. That would not lead to a consolidation of the four different mods we have in this weapons system, and most importantly, it would not address some of the things like electronics degradation and the environment of the weapon, which the labs and lab directors are now seeing and are concerned about.

The last item I would like to mention is the first interoperable system. We denote it as the W78/88-1. That is in phase 6-2. It is in design definition and the cost study phase, which is going through right now assessment of really the ability for us to have an interoperable system in two legs of the deterrent.

Although I have other remarks, I think I will stop at this point and open the way for my colleagues for a time and questions later.

[The prepared statement of Dr. Cook follows:]

[SUBCOMMITTEE INSERT]

Senator UDALL. Thank you, Dr. Cook.

Admiral Richardson, welcome.

STATEMENT OF ADM JOHN M. RICHARDSON, USN, DEPUTY ADMINISTRATOR FOR NAVAL REACTORS, NATIONAL NUCLEAR SECURITY ADMINISTRATION, DEPARTMENT OF ENERGY

Admiral RICHARDSON. Chairman Udall, members of the subcommittee, thank you for the opportunity to testify before you today on Naval Reactors fiscal year 2014 budget request. It is a privilege to be here representing the men and women of the Naval Nuclear Propulsion Program. This is the first of, hopefully, many times testifying as the Director, and I am eager to share our progress, opportunities, and challenges.

Your Naval Nuclear Propulsion Program provides for research, development, design, procurement, certification, operation, and eventual disposal of 97 naval nuclear reactors that power the 10 aircraft carriers, 14 *Ohio*-class ballistic missile submarines, 4 guided missile submarines, and 54 attack submarines, more than 40 percent of the U.S. Navy's major combatants. These ships are available whenever called to go anywhere in the world and remain continuously on station in defense of our Nation's interests.

Mr. Chairman, my budget request for fiscal year 2014 is \$1.26 billion and includes funds for my base program, as well as for three new projects, the replacement of the *Ohio*-class submarine, a refueling overhaul for our land-based prototype, and the recapitalization of our spent fuel handling facility in Idaho. The requested funding in fiscal year 2014 and the out-years has been vetted by OMB, DOE, and NNSA. In addition, OSD CAPE recently completed a comprehensive analysis of the program and validated our requirements.

With your permission, sir, I would like to quickly share a few details about the activities funded by our request.

First, the *Ohio*-class strategic deterrent submarines will begin to reach the end of their service life in the late 2020s. The fiscal year 2014 request includes \$126 million for the development of the reactor plant for the submarine that will replace the *Ohio*-class. This new reactor plant includes a core that will last the entire life of the submarine, 42 years, without needing to be refueled. The life-of-the-ship core, coupled with other maintenance innovations, enables this new SSBN force to eliminate the mid-life refueling, turning shipyard time into at-sea time, and by virtue of the increased operational availability made possible by this core, the new SSBN class is able to meet its strategic commitments with 12 ships, 2 less than the current force of 14. The Navy estimates this will save \$40 billion over the life of the program. The procurement of the first *Ohio* replacement submarine is scheduled in 2021 with nuclear component procurement beginning in 2019.

The second project in our request is the refueling and overhaul of the land-based prototype reactor, which begins in 2018. To support this requirement, the fiscal year 2014 budget request includes \$144 million. This program is essential to delivering the life-of-the-ship core for the new strategic submarine. When we refuel this reactor, the core we will use will include advanced features that we intend to use for the submarine reactor. Fielding a prototype with this advanced core will allow us to validate the manufacturing techniques and better understand the behavior of this core for the *Ohio* replacement. This understanding will translate into reduced technical costs and schedule risk to this new submarine.

We also use this reactor to train our fleet operators, about 800 a year. And so in addition to the technology linked to the new submarine, this refueling will allow us to continue that critical training for an additional 20 years.

The final project in our budget supports the Navy's refueling scheduled for the Nimitz class aircraft carriers. The fiscal year 2014 budget includes \$70 million to complete conceptual design and begin project engineering and design for the new facility to handle that spent fuel from those carriers. This new spent fuel

handling project will come on line in 2022 to replace the existing facility, which is more than 50 years old and is quickly becoming obsolete. The new facility will also enable me to meet my commitments to the State of Idaho which require that naval spent nuclear fuel be moved to dry storage and ultimately to permanent disposal.

Finally, Mr. Chairman, everything I do, including these three projects I have just described, are made possible only by the efforts of the talented and dedicated people in my two labs and my headquarters personnel. These people form the base of my program. These scientists and engineers provide the technical foundation that is essential for me to execute my day-to-day regulatory and fleet support responsibilities for the 97 reactors currently in service, the shipyards that maintain the nuclear powered fleet, and the vendors that supply that fleet. This core talent base also does the design analysis and oversight work for these new projects and manages our spent fuel to ensure we meet our responsibilities to the American people and the environment.

I am grateful for the support this committee has given the Naval Nuclear Propulsion Program. I look forward to working together to advance the three critical projects discussed today and support the safe operation of the nuclear powered fleet. Thank you again. I am ready to answer any questions, sir.

[The prepared statement of Admiral Richardson follows:]

[SUBCOMMITTEE INSERT]

Senator UDALL. Thank you, Admiral.

Mr. Huizenga?

STATEMENT OF DAVID G. HUIZENGA, SENIOR ADVISOR FOR ENVIRONMENTAL MANAGEMENT, OFFICE OF ENVIRONMENTAL MANAGEMENT, DEPARTMENT OF ENERGY

Mr. HUIZENGA. Good afternoon, Chairman Udall and members of the subcommittee. I am honored to be here today to discuss the many positive things the Office of Environmental Management is doing for the Nation and to address your questions on our fiscal year 2014 budget request.

Finally, I will just offer my appreciation for so quickly approving a reprogramming request that recently came up. I appreciate that.

Our request of \$5.3 billion for defense-funded activities will enable our office to continue the safe cleanup of the environmental legacy brought about from 5 decades of nuclear weapons development and Government-sponsored nuclear energy research. Our cleanup priorities are based on risk and our continued effort to meet our regulatory compliance commitments. Completing cleanup enables other crucial DOE missions to continue and ensures the reduction of one of the U.S. Government's largest liabilities.

The Office of Environmental Management has made significant progress in accelerating cleanup across the United States. For example, in 2009, the total footprint of EM's cleanup sites was 931 square miles. As of January of this year, that figure has been reduced by 74 percent. In 2012 at the Savannah River site in South Carolina, Environmental Management achieved a key milestone with closure of two high-level waste tanks. Also to date, Environmental Management has sent more than 11,000 shipments of

transuranic waste to the Waste Isolation Pilot Plant in New Mexico for safe disposal.

These accomplishments have been possible due to our competent Federal and contractor workforce. The safety of these workers is a core value that is incorporated into every aspect of our program. We maintain a strong safety record and continuously strive for an accident- and incident-free workplace by aggressively sharing lessons learned across our sites. We are training senior management and working to achieve an even stronger safety culture within our program, thereby ensuring safe construction and operation of our facilities.

In recognition of EM's improvements in contract and project management, earlier this year my colleague, Mr. Trimble, to my left and his colleagues removed Environmental Management capital asset projects with values less than \$750 million from its high-risk designation. We are deeply committed to excellence in contract management and project management, and as much as I enjoy working with Dave, we intend to keep these projects off the GAO high-risk list.

In fiscal year 2014, we are positioned to continue making progress toward our cleanup goals. For example, at the Office of River Protection, we are continuing construction of the low activity waste facility, complete construction of the analytical laboratory, and continue to see tank farm retrievals. At the Savannah River site, we will close another two tanks, tanks 5 and 6, high-level waste tanks. At Idaho, we are going to continue to progress on the treatment of the remaining 900,000 gallons of liquid waste and process and ship 4,500 cubic meters of transuranic waste to WIPP. At Los Alamos, we are going to continue to focus on processing and removing 3,700 cubic meters of above-ground TRU waste. And finally, we are going to continue disposition of the U-233 inventory from Oak Ridge National Laboratory and pursue technology development for cost-effective treatment of mercury contaminated building debris at Y12.

In closing, we will continue to apply innovative cleanup strategies so that we can complete our work safely on schedule and within cost, demonstrating a solid value to the American taxpayers. The Office of Environmental Management has made steady progress and with your help we will continue to do so.

Thank you and I, as the others, will take questions.

[The prepared statement of Mr. Huizenga follows:]

Senator UDALL. Thank you, Mr. Huizenga. I think you put your finger on it. I think at some level the GAO's mission is to put themselves out of business. So anything you can do to make that a possibility, I am sure they would appreciate it.

Mr. Trimble?

STATEMENT OF DAVID C. TRIMBLE, DIRECTOR, NATIONAL RESOURCES AND ENVIRONMENT, GOVERNMENT ACCOUNTABILITY OFFICE

Mr. TRIMBLE. Thank you. Chairman Udall and members of the subcommittee, my testimony today will focus on our recent and ongoing work on cost estimating practices and budgetary information at NNSA and EM for projects and programs.

While DOE has taken a number of steps to improve its management of projects, all of the ongoing major projects continue to experience significant cost increases and schedule delays. UPF costs have increased seven-fold up to \$6.5 billion for a project with reduced scope and 11 years added to the schedule. CMRR costs have increased nearly six-fold up to \$5.8 billion with a total delay, counting the deferral announced last year, of up to 12 years. WTP has tripled in cost over \$12 billion with a decade added to its schedule.

Regarding cost estimating, our preliminary observations from ongoing work we are doing for this committee include the following. DOE has not established a cost estimating policy for capital projects. DOE's project management order does not meet cost estimating best practices. And NNSA and DOE cost estimating guidance does not fully meet GAO's best practices criteria for cost estimating.

While capital asset projects are highly visible, about 90 percent of NNSA's budget is devoted to operating programs. Our preliminary findings examining cost estimating practices for programs indicate that DOE and NNSA may lack specific cost estimating requirements or guidance for programs. For example, NNSA officials responsible for the plutonium disposition program told us that they have constructed a life cycle cost estimate of about \$24 billion for the program. They noted, however, that there is no DOE or NNSA requirement prescribing how such an estimate should be developed, nor is there a requirement that it be independently reviewed.

In regard to budgetary information, in June 2010, we examined NNSA's program to operate and maintain weapons facilities and infrastructure and found that NNSA could not accurately identify the total cost for this congressionally directed program. And NNSA's budget justification understated these costs by over \$500 million.

In July 2012, we found deficiencies in NNSA's validation of budget requests for its programs and concluded that these weaknesses impacted the credibility and reliability of those budget estimates. According to NNSA officials, the agency's experience and trust in these contractors minimized the need for such review.

In closing, let me note that without accurate cost and budget information, DOE is not in a position to effectively manage the critical projects and programs carried out by its contractors. With over \$180 billion planned to be spent at NNSA alone over the next 18 years, Congress also needs accurate and reliable information on these costs as it confronts difficult budgetary decisions. Without improvements in this information and DOE's capabilities to use and effectively apply this information, DOE will continue to be surprised by cost and schedule problems and will continue to be forced to manage these problems through reactive and stop gap measures such as suspending programs, reducing the scope of critical projects, or robbing Peter to pay Paul.

Thank you. I am happy to answer any questions.

[The prepared statement of Mr. Trimble follows:]

Senator UDALL. Thank you, Mr. Trimble.

Let me recognize Senator Donnelly. I think we will do 5-minute rounds. I am going to step out for a minute. If I am not quite back after 5 minutes, I know Senator Donnelly will then recognize Sen-

ator King who has joined us from the great State of Maine. Senator Donnelly?

Senator DONNELLY. Thank you, Mr. Chairman.

And thank you to all of you for your hard work.

Admiral Richardson, as we look at the reactors that will be used and as we move forward, this is an area that strikes me as, as we move forward, you could almost have quantum leaps in technology. And so when our core will be good for 42 years, how do we continue to improve that during that time?

Admiral RICHARDSON. Senator, first, that is a big leap to develop a 42-year core. That in and of itself—

Senator DONNELLY. Well, no. Do not worry. I know what an amazing accomplishment that is. What I am saying is that technology, to be able to do that, a 42-year core, is a tremendous, tremendous accomplishment.

Admiral RICHARDSON. Yes, sir.

Senator DONNELLY. Now, during that life of that core, do we continue to do the research to make it stronger, better, quicker, faster, less waste?

Admiral RICHARDSON. Yes, sir, we do. And so that is the work that is constantly being done by the folks at my headquarters and in those labs. They are constantly at work looking for those next opportunities to reduce cost, reduce waste, do all of those things that will allow us to execute the Navy's mission at a lower cost and a more responsible pace. So that is that base funding that is an effort that is ongoing in conjunction with our vendor base.

Senator DONNELLY. As you know, on the vendor base, obviously, being from Indiana, we take great pride in our participation in this.

But what is the outlook for continued reduction of the waste to a point where—will there be a point where there is no waste? And will there be—I will just leave it at that.

Admiral RICHARDSON. I think that as long as you are—what our aim is is to reduce that waste. As long as you are burning fuel and burning cores, there will be some waste at the end.

Two ways that we are constantly taking a look at reducing that waste stream. One is by virtue of building a core that lasts 42 years, that is just that much less material that you have to do. Our first cores, for instance, lasted 2 years, and at the end of that 2-year period, you would have to refuel. That is a lot of spent fuel that we had to do that. So over the decades, we have reduced that by a factor of 20 by virtue of building a 42-year core.

The other thing is we are constantly on the lookout for those technologies that allow us, when the conditions permit, to perhaps approach a recycling type of a technology where the fuel can be recycled.

So it is the combination of those two efforts primarily right now through the longer cores, the reduction of the material that allow us to minimize the waste that we produce.

Senator DONNELLY. How will that new core work in regards to performance inside? Obviously, on the nuclear part, but performance inside of the boat itself. How does it make the sub itself so much more effective in terms of speed, technology, other areas?

Admiral RICHARDSON. Well, the core itself will allow the submarine to execute its mission for that 42-year life, but then there is the reactor plant around that core and the propulsion plant that that core is connected to. Those are the sorts of things that get after the mission effectiveness of the submarine itself in terms of stealth primarily and then those core attributes of speed and other things that allow the submarine to be an effective deterrent as far out as we can see the threat.

Senator DONNELLY. And I just want to finish up by saying we not only saw off the shores in North Korea, but in so many other places, that the presence of not only carriers and other ships, but the presence of the unknown to other people the submarines has acted as an incredible deterrent. And we want to thank everybody involved in the program for what you have done. So thank you very much.

And I will pass it on to Senator King.

Senator KING. Thank you.

Gentlemen, thank you for your testimony.

The Department's 3+2 strategy where we are going to have interoperable warheads it seems to me requires a great deal of coordination between the Defense Department and NNSA and, should there be waste involved, Environmental Management. Could you sort of update me on the progress of that strategy and whether you believe we can implement it in a safe and cost-effective way? Are the departments working together? Are they talking to each other? Where do we stand on that development?

Dr. COOK. I will update you, Senator.

We work together and we talk together every week, sometimes every day between NNSA and DOD.

With regard to the strategy, we now have a comprehensive plan that covers the entirety of the stockpile. That is why you will continue to hear 3+2, meaning three interoperable systems for the ballistic leg, two legs, and two systems interoperable for the air-delivered leg.

The actual status of implementation was called for in the nuclear posture review of 2010. We now have an implementation strategy, and we are turning that into resource plans.

So the first part of that is to continue and complete the W76 life extension program. We have achieved the full build. The rate is steady. We are through the early birthing defects and we will complete that program by 2019.

To think of the second wave, the second wave consists of the B61 life extension program. That will improve the air-delivered leg and the W88 Alt. So this updates the arming, fuzing, and firing system for the W88. That will also be the basis for the first interoperable warhead, AF&F. Those will be entering the first production unit in 2019. They are already in full-scale engineering design. And the build of those will be completed around the end of 2024 or 2025.

Then the third wave will come on, and that is the first interoperable system, the W78 and 88 life extension program. There will be beyond that a second and third interoperable, but that is the strategy that is being conducted. And the most important thing to the strategy is, first, having an overall plan—we have that—second, having a good partnership between the Departments of Energy and

Defense. We have that. Clarity of execution and then a real keen eye given to the cost and the schedule maintenance is what we are working on most strongly now.

Senator KING. So it is too early to really talk about cost. You are still in the planning and design stage.

Dr. COOK. I would differ. It is not too early to talk about cost. We are managing the W76 program according to the cost requirements. B61-12, we have a weapon design and cost report. We will be submitting a very initial baseline soon. We know that there is considerable risk associated with that, but in this FYNSP, in the President's request for 2014 through 2018, we will have 5 of the 6 years of the B61 program up to the first production unit. So we have got a very strong attention given to cost. We are developing integrated master schedules for each of the life extension programs, a completed risk register, and we will be moving to a point of having resource-loaded schedules in industry standard tools as well as these proceed.

Senator KING. Do existing warheads have a life expectancy? Do they degrade in some way over time?

Dr. COOK. They do degrade and they do have a life expectancy although we have been able to stretch that. So these weapons were put into service in the 1970's and 1980's nominally with a 20-year life and a 25-year life of program buy, which means we had enough components to extend another 5 years. They are now well beyond that time. The B61 is the oldest system in the stockpile, and we have the greatest needs to do its life extension. But the elements of that system have been around 40 years and key parts of it still have in the radar system vacuum tubes.

Senator KING. You can send most of them to the Smithsonian.

Dr. COOK. In fact, we probably will.

You know, in terms of cost forward, Sandia is developing a radar system that will be pertinent not only to the B61 but also to the W88 and the W87 life extensions as well. So a strong attention to cost, but a real need to improve the systems.

Senator KING. Other comments from any of you?

Mr. HUIZENGA. I will just point out, Senator, I mean, relative to our relationship with NNSA, we obviously work closely with our partners there with the transuranic waste that we are removing from the MESA at the Los Alamos National Laboratory is indeed important to the overall benefit for the laboratory. We do not want to have another wildfire approach that waste. So we are trying to move that as quickly as possible in support of our colleagues.

Senator KING. Do we do any recycling of nuclear waste, or is it all stored somehow? Do we have any reprocessing?

Mr. HUIZENGA. In general, we are disposing of the waste. I mean, there are broader issues associated with nuclear fuel and power plant fuel that can be wrestled with.

Senator KING. But in the defense area, we basically are disposing of the waste. There is no reprocessing process.

Mr. HUIZENGA. Currently, yes.

Senator KING. Along that line, as I understand it, as we have been decommissioning these reactors and cores we have created something like 75 million gallons of liquid nuclear waste. Are you confident that the facilities that we have, Idaho, South Carolina,

Washington, are adequate into the indefinite future? Is there going to be need for a new siting? Would you prefer a different storage for this liquid waste? I understand it is basically in large tanks. Is there another solution that might be a preferable balance between safety and cost?

Mr. HUIZENGA. I think the path we are on right now for this liquid high-level waste is the appropriate one. We are making glass logs and solidifying waste at the Savannah River plant and doing well at our defense waste processing facility. We have already solidified all of the liquid waste at the West Valley site. And indeed, we have this 900,000 gallons left at Idaho and we are in the process of starting up that facility to stabilize that material. So the large amount of material, the complicated waste stream that we have with the Waste Treatment Facility at Hanford is, indeed, our biggest challenge. But we think we have got our sights set on being able to address that and solidify that material as well.

Senator KING. Is Hanford principally managed by your agency?

Mr. HUIZENGA. Yes, it is.

Senator KING. That is your—

Mr. HUIZENGA. That is my challenge.

Senator KING. I understand.

Admiral Richardson, as you know, Portsmouth Naval Shipyard does maintenance on attack submarines, and as I understand it, we had a hearing this morning about shipbuilding plans and projections for the force. Under the 306-ship plan, the Navy's projection is to go to 42 attack submarines in 2029, down from 55 today, and that is a pretty significant decrease. What do you see the role of the maintenance yards? Given that decrease, how do we maintain the industrial base? What will the impact of that be on the facilities like Portsmouth and others?

Admiral RICHARDSON. Yes, sir. We, obviously, take a close look at that, and as far out as we have got plans right now for Portsmouth, that shipyard is busy with those refuelings and decommissionings. Beyond that, working closely with my colleague, Vice Admiral McCoy, there is really sort of an enterprise-wide approach using all the shipyards in the country to best level the load for nuclear ship maintenance. And as we look forward to planning beyond the current horizon, we will continue that enterprise approach to make sure that we are best postured to support that fleet.

And then, as you know, sir, that is the low point perhaps in the shipbuilding plan, but we will be building back up from that point as well. So not only the 48 or so attack submarines, but then the follow-on to the *Ohio*-class as well.

Senator KING. Thank you.

Senator UDALL. Thank you, Senator King. It is an important part of Maine's economy and the great role that Maine plays in our country.

Dr. Cook, let me turn back to the posture review from 2010. It requires you to put in place a large number of programs. I do not have to tell you that. You are required to overhaul the B61. You finish up the W76 warhead for the Navy by 2019. You are going to conduct the joint fuze program on the W88 warhead with com-

mon components for the ICBM W87 warhead and eventually the ICBM W78 warhead.

Are you concerned about the overlap or the sub-elements in the B61 program between Sandia, the Kansas City plant, and even Y12 where the components are produced?

Dr. COOK. It is a good question. Let me give several aspects to the answer.

First, what is generally called concurrency is a real concern. So dealing with concurrency is something we must do. We cannot avoid it because we have the oldest stockpile we have ever had. The average age of the warheads is now 26 years and counting, and frankly, they range from about 20 years to getting close to 40 years now. So in dealing with that concurrency, the most important thing is to have a strategic plan, vector one toward a stable base workload that uses the entirety of the complex in the wisest way because that will be the most cost-effective way, and then schedule the activities so there is not multiple overlap that is too high a stressor in what would otherwise be a bottleneck. So a strategic plan is very important.

Then another way to reduce the impacts of concurrency is through leveraging the nonrecurrent engineering and getting multiple use out of it. In other words, I mentioned—and I understand with the lab directors Director Paul Hommert showed the radar module for the B61. That is in fact the same one for the W88 Alt and for the MK21 fuze. So one set of engineering applied three times really leverages. Now, if there were not some concurrent work, that leveraging would not be possible. So some aspect of concurrency is really important.

But there is a down side. If there is too much and if schedule slips, if they get stretched out, if the funding is not made available for the life extension programs, then not only do schedules slip, they begin to overlap and the consequence is we have costs and then we have real bottlenecks.

Senator UDALL. Let me ask you about Sandia. Are you concerned about too many programs carried out at Sandia all requiring component manufacturing at the Kansas City plant while it is moving into the new facility?

Dr. COOK. Again, it is a good question. I would say I have a concern, but I am not overly concerned because we have mitigation steps in place. What we are going to do is track them very carefully. So specifically Kansas City plant move—the new plant at Box Road is completely done now. The move is happening in fiscal year 2014 and by the end of 2014, all of that move will occur.

When we looked at all of the risks and considered them, we felt they were all manageable except one and that was the assembly of the arming, fuzing, and firing system. That is where it all comes together, and that had been a sticking point with getting to the W76 build rate. So in fact we created some duplicate capabilities, one in the existing plant, one in the new plant so that that risk would be addressed. And both are going to be used while we make the transition.

Senator UDALL. Let me talk about—I will just go to bombers. With the B61 life extension, we need both the weapons and the bombers.

Dr. COOK. Sure.

Senator UDALL. NNSA projects the B61 life extension to cost I think something like \$8 billion, and the DOD CAPE projection is \$10 billion. Can you talk about that difference? How did it come about?

Dr. COOK. Well, first, knowing what the difference is is quite important. So NNSA and CAPE have been working, I think as Administrator Miller said and I agree, very closely together. It is a different set of assumptions that leads to the different costs. The scope is the same. The elements are the same.

In our plan and what we provided to the Congress now, weapon design and cost report, that is a cost at the end of conceptual design. There is considerable risk in the program, and something CAPE, I would say, increased our awareness to is the overlapping elements of different phases or turns of the prototype hardware. Things move along pretty quickly. So from the time we began to work with CAPE, a full year has gone by. Sandia is already into the first turn of flight hardware, and that was why you could see things that are relatively finished products yesterday. We will continue to monitor that.

The CAPE assumption on the down side, I would say, is if we do not succeed in achieving the first production unit in 2019, which requires budget stability, it requires careful management, it requires risk management—if we do not achieve that and the program begins to slip for whatever reason, failure to manage the risk or failure to get the budget authorized and appropriated, then things will begin to pile up and we will lose year by year. CAPE's assumption was if we lost 3 years, we extend the program 3 years, and it costs \$2 billion more. And I actually agree with that. If that consequence occurs, that will be the cost.

Senator UDALL. Well, I appreciate that clarification. We are going to need to, I think, harmonize those two different numbers although, as you point out, there are different assumptions behind them. And the important thing is we move to the markup.

Let me turn to Admiral Richardson. Admiral, I know you have received a 15 percent increase in your 2014 budget. Can you describe what the increase was for and why it was so large?

Admiral RICHARDSON. Yes, sir. The increase really is a result of a couple different dynamics. First, the primary increase is to support those three major projects that I described in my statement: the replacement for the *Ohio*-class submarine, that reactor plant; the refueling of the land-based prototype; and also the recapitalization of our spent fuel facility in Idaho.

As the Budget Control Act took place, the ramps that were associated with those new projects got leveled off at constant year funding levels. And so as we have been involved in the effort with OSD CAPE and the rest of NNSA, those projects were assessed as part of that effort over the past year, the costs associated with those, the validation of the mission, so that that increase really is a restoration of those projects.

There is a slight increase above that associated with—amounting to roughly a 2-year slip in the spent fuel handling project and also the Ohio submarine reactor plant. And so there is some escalation

associated with that and some efficiency that we lost by virtue of those slips.

But those three projects with that slight increase due to the slip account for our increase, all linked very directly to supporting the fleet on a timeline that makes sense for them.

Senator UDALL. I know we are approaching 4 o'clock. I want to see if Senator King had any additional questions, and then I will conclude with one or two questions. Senator King?

Senator KING. Well, it would not be a hearing in the U.S. Senate in the spring of 2013 if somebody did not ask about the sequester. How is it affecting your operations, if at all? If not, that is important to know. If it is, I would like to know that too and what the severity is and what the impact would be if it continues beyond 2013. Admiral?

Admiral RICHARDSON. Thank you, Senator.

With respect to the impact of sequestration, it is really being felt across the Navy and Naval Reactors is not immune from that. The combined continuing resolution and sequestration cuts for our program are approximately \$95 million in fiscal year 2013. That really affects most directly our ability to progress the refueling of that land-based prototype which, as many of these effects have, is a snowball effect forward to retiring risk for the life of ship core for the propulsion plant for the next submarine. So that really inability to place about \$30 million worth of contracts to help us get at understanding the material science associated with that life-of-the-ship core, the sequestration—these funding levels will also necessitate that we again delay the spent fuel handling project. That will, again, result in increased costs for that project when it eventually does get built. And in the interim, because the carrier fleet is coming in for refueling and that fuel is coming off those reactors, we will have to spend money, about \$100 million a year, to build temporary storage facilities for those cores just to hold them until that handling facility gets built.

The other part, which is particularly of concern, goes to your original question, sir, about the industrial base, both in the private sector, our vendors, and also the shipyards. And so as the sequester and the continuing resolution manifests itself through the combined effects of hiring freezes, layoffs of temporary workers, potential furloughs, we are seeing reductions in the shipyards of over 30 percent in terms of the capacity. And that again is a snowballing effect which will directly translate to delays in the shipyard, which will translate again to reduced time at sea for those critical naval assets, less operational availability as they work to try and get out and do the Nation's business. We will see some of that effect in 2013. That effect will build in 2014 and will build again in 2015 unless we can turn this around.

Similarly, in the private sector, particularly as you move through our tier one vendors and into the second and third tier vendors, small businesses that do a big portion and maybe all of their business with us to supply components for these plants—those businesses are at particular risk as well.

Senator KING. And I would assume—I do not want to put words in your mouth, but I would assume that one of the issues is the uncertainty surrounding the budget situation. It almost does not

matter what the solution is. We just need a solution. Would you concur?

Admiral RICHARDSON. Sir, I think Administrator Miller spoke very eloquently about that, that the combined uncertainty sends a shock wave through the system. It is that certainty and confidence too that also—particularly in our business where we do a lot of work with unique vendors, very advanced technology, that certainty and confidence that the business will be there at predictable funding levels allows to do the sorts of investments to reduce that cost and get after this capability at the minimum cost. So not only is there sort of a people manifestation of that uncertainty as people look for where they want to spend their lives working, but also it almost guarantees that this equipment will come in at higher cost because we have to do it year by year rather than doing it over a period of time that allows us to take advantage of fluctuations in the market.

Senator KING. Thank you.

The sequester is going to end up costing us money, Mr. Chairman.

Senator UDALL. The Senator from Maine is exactly right. We are operating under the illusion it is going to save money. But Administrator Miller shared with us earlier that the CR's have the same effect. The continuing resolutions have the same effect. We can feel good that we are cutting Government spending, but in fact we are not. We are adding additional costs.

Thank you for that observation. Thank you for being here today.

Mr. Huizenga, I am not going to direct a question to you, although we are going to keep the record open, but I did want to acknowledge the work you do. I think you are well aware of a little plant we had in Colorado, Rocky Flats. I worked for many a year as a Member of the House to see that project completed. And, Senator King, this is a wonderful story of what we can do if we focus in the environmental management area. We have cleaned up that facility for the most part. There is a core area that will have to be monitored for hundreds of years, but the surrounding 4,500 acres are now a wildlife refuge and there are herds of elk and songbirds and red-tailed hawks. The Fish and Wildlife Service now is managing it. It is an example of what we can do. We saved a lot of money but we have got to invest on the front end in cutting-edge technology.

Mr. HUIZENGA. We learned a lot of lessons at Rocky Flats, and we are trying to use those across the complex.

Senator UDALL. We certainly did. Just because we have gotten ours in Colorado does not mean I am moving on to other missions. I have made a commitment to Hanford and to Savannah and Pantex and Fernold and Oak Ridge and all the other sites. So as the chairman of this committee, I am going to work with you to see that we keep faith with the people in those communities and do the work we said we were going to do.

Mr. Trimble, the last question I want to direct your way is the following, and it ties to a common indirect cost structure. Can you give some recommendations for implementing a common indirect cost structure at the labs so that we can compare how efficient they are in executing their programs?

Mr. TRIMBLE. This can be a very technical area. So I will try to make it pretty simple, which is sort of the level I operate at most times.

I think to go forward in this area, I think the first thing I would recommend is, one, I think engaging the CAPE given their vast experience would be very useful.

I think in terms of the elements that would be needed, first you would need a standard work breakdown structure across NNSA that deals with both direct and indirect. I do not think you can parse it out to just the indirect. So you have to tackle both at once otherwise you can sort of play a shell game where stuff can be moved around. So you have to tackle it for both direct and indirect. It has to be consistent across the complex, and then it has to be consistently applied.

To sort of put meat on this, for example, if you have a line item for a program, say, for infrastructure and you say, okay, I am going to give \$100 for infrastructure, if the facility, if the lab can take money from that account for infrastructure, that is sort of what you think they are doing. But if they can also take it from a program to pay for infrastructure and they can take it from sort of transportation to pay for infrastructure, if you can take it from multiple funds, all of a sudden you have lost the ability to have an insight into what your program costs. So the idea of a common work breakdown structure and a disciplined one is to have under transparency and consistency in how those costs are allocated so that you are then in a position to manage your program from both a program effectiveness standpoint, as well as from a budget standpoint. So it is very, very important and it is very dry, but it is absolutely critical to move the ball forward in this area.

Senator UDALL. I agree, and I see Senator King listening very carefully. He was Governor of Maine. He knew that every dollar of taxpayer funds had to be spent well and with transparency.

I look forward to working with you on this. I am not on a mission to expose the NNSA or DOE or DOD. It is just we need and have responsibility to continue to work to provide better Government services, more efficient Government services in this really crucial area.

Again, I want to thank Senator King for attending. I want to thank you all for your time.

We will keep the record open for 2 days, through the end of the business day on Friday. We are working overtime to prepare the authorization bill for the committee, which we will take up next month. So that is why the short time frame to keep the record open. But I know you will all be available to answer any questions.

With that, the Subcommittee on Strategic Forces is adjourned.

[Whereupon, at 4:10pm., the subcommittee adjourned.]