## Stenographic Transcript Before the

Subcommittee on Strategic Forces

## COMMITTEE ON ARMED SERVICES

## **UNITED STATES SENATE**

HEARING TO RECEIVE TESTIMONY ON U.S. NUCLEAR WEAPONS POLICY, PROGRAMS, AND STRATEGY IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2016 AND THE FUTURE YEARS DEFENSE PROGRAM

Wednesday, March 4, 2015

Washington, D.C.

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3	IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST						
4	FOR FISCAL YEAR 2016 AND THE FUTURE YEARS DEFENSE PROGRAM						
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6	Wednesday, March 4, 2015						
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8	U.S. Senate						
9	Subcommittee on Strategic						
10	Forces						
11	Committee on Armed Services						
12	Washington, D.C.						
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14	The subcommittee met, pursuant to notice, at 3:33 p.m.						
15	in Room SR-222, Russell Senate Office Building, Hon. Jeff						
16	Sessions, chairman of the subcommittee, presiding.						
17	Committee Members Present: Senators Sessions						
18	[presiding], Fischer, Nelson, King, and Heinrich.						
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- 1 OPENING STATEMENT OF HON. JEFF SESSIONS, U.S. SENATOR
- 2 FROM ALABAMA
- 3 Senator Sessions: The subcommittee welcomes Secretary
- 4 Kendall and other distinguished officials. The witnesses
- 5 represent the policy, acquisition, force structure and
- 6 warfighter components of the U.S. nuclear weapons.
- 7 Collectively they comprise the Nuclear Weapons Council, a
- 8 body established by Congress in 1986 to facilitate
- 9 cooperation and coordination between the Department of
- 10 Defense and the Department of Energy.
- 11 Today's hearing, however, will go beyond the specifics
- 12 of the nuclear stockpile to address broader nuclear policy
- 13 and strategy issues as the members see fit.
- 14 And let me just say, gentlemen, I believe the Nuclear
- 15 Weapons Council is stronger and more effective than it has
- 16 ever been. I believe there is better transparency. I
- 17 believe there is better coordination between Energy and DOD.
- 18 And I think the fact that you have produced one statement
- 19 that speaks for all of you is proof that you are getting
- 20 along better than we have had sometimes in the past or a
- 21 better coordination at least. It is something that I and I
- 22 think Senator Nelson and others have pushed for in recent
- 23 years, and it is really pleasing to me to see that we are
- 24 moving in this direction.
- 25 So on balance, the President's 2016 budget and out-year

- 1 spending profile represents a good faith effort, given the
- 2 budget constraints, to modernize all three legs of the
- 3 nuclear triad while addressing aging DOD and DOE nuclear
- 4 weapons and infrastructure problems.
- Notably, for the first time since fiscal year 2012, the
- 6 President's budget request for DOE and NNSA nuclear weapons
- 7 activities, which is \$8.9 billion, meets the funding target
- 8 established in the 2010 New START treaty ratification
- 9 process discussion and commitments that were made. So we
- 10 are pleased about that.
- Also, notable is Secretary Carter's announcement that
- there will be about \$8 billion over the next 5 years to fund
- improvements across the nuclear enterprise to address
- 14 current readiness, training, and infrastructure shortfalls.
- 15 As Deputy Secretary Work explained in February, quote, our
- 16 nuclear deterrent force is aging. It will be modernized in
- 17 the '20's and '30's. We need to keep the old equipment and
- 18 systems going, but it is becoming more expensive to do so.
- 19 Close quote.
- 20 Over the past few years, Congress moved forward with
- 21 the President's nuclear modernization program indicating
- 22 broad bipartisan support for nuclear modernization.
- You know, to follow up on Bob Work's comments, General
- 24 Klotz, you said last fall at the end of the Cold War, we
- 25 entered into a sort of procurement holiday as far as our

- 1 strategic nuclear forces were concerned, and we were able to
- 2 do that because they were extraordinary capable systems.
- 3 But now, after a couple of decades of doing that, the bill
- 4 is coming due. I see some nods there. I think that is a
- 5 fair statement of where we are.
- I have got a chart we will show later that really does
- 7 show the dramatic decline in the percentage of the defense
- 8 budget going to nuclear weapons and the fact that we are
- 9 going to now have to have some increase to maintain what I
- 10 think is an essential requirement.
- So, unfortunately, there remains a net \$2.5 billion
- 12 shortfall in DOE and NNSA weapons activity funding over the
- 13 past 4 years that has led to some delays. Likewise, there
- 14 has been a 2-year delay in fielding the new ballistic
- 15 missile submarine, which will have operational consequences.
- 16 Mr. Kendall, as you noted last year, quote, the program is
- 17 fragile, and any funding reductions at this point could pose
- 18 unacceptable risk to the health of the nuclear enterprise.
- 19 Critics of the nuclear weapons -- and we have had some
- 20 that have been pretty aggressive at times, but I think they
- 21 have not prevailed in the battle of ideas. And so their
- 22 hopes to derail modernization plans by claiming that nuclear
- 23 modernization is unaffordable or a distraction from more
- 24 pressing nuclear capabilities has not prevailed. So we will
- 25 address this claim today.

- 1 But I would note that according to CBO estimates -- and
- 2 I think, colleagues, this is important -- funding to
- 3 maintain and modernize DOE and DOD nuclear programs will
- 4 account for roughly 5 to 6 percent of the national defense
- 5 budget funding 050 during the peak funding years. And this
- 6 is out there 2024-2025. There are a few years it peaks out
- 7 there, but it is, I think, about less than 3 percent today.
- 8 If we examine only modernization cost, the cost of
- 9 replacing existing delivery systems, missiles, planes, subs,
- 10 and costs for life extension of the warheads, CBO estimates
- 11 that during the period 2024 to 2030 modernization costs
- 12 would average about \$15 billion per year. According to OMB,
- 13 national defense funding during that time would be over \$806
- 14 billion in 2024, \$15 billion out of \$806 billion, which
- 15 means that nuclear modernization will account for less than
- 16 2 percent of the defense spending during that period of peak
- 17 funding. So the nuclear warheads themselves are a
- 18 particularly small part of the budget. Considering the
- 19 decades of decline in spending on nuclear forces, this level
- is not only affordable but certainly necessary.
- 21 So, Senator Nelson, glad to have you with us and any
- 22 comments you would like to have. Welcome back to that seat.
- 23 You have held it and chaired this committee over the years,
- 24 and you have full experience in all of these issues.

25

1	STATEMENT OF HON. BILL NELSON, U.S. SENATOR FROM
2	FLORIDA
3	Senator Nelson: And I am standing in for Senator
4	Donnelly today who is away at a funeral.
5	But you remember those old times. The two of us got
6	along on very controversial issues. And miracles never
7	ceased. I used to persuade you to my position.
8	[Laughter.]
9	Senator Sessions: I always gave in to you whenever you
10	were right, which was normal.
11	Senator Nelson: I want to get on. So what I am going
12	to do is just insert my statement into the record. Thank
13	you.
14	[The prepared statement of Senator Nelson follows:]
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Τ		Sena	tor i	Se	ssions:	'I'ha	ank y	you.					
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- 1 STATEMENT OF HON. FRANK KENDALL III, UNDER SECRETARY
- 2 OF DEFENSE FOR ACQUISITION, TECHNOLOGY, AND LOGISTICS; HON.
- 3 BRIAN P. McKEON, PRINCIPAL DEPUTY UNDER SECRETARY OF DEFENSE
- 4 FOR POLICY; MICHAEL S. ELLIOTT, DEPUTY DIRECTOR FOR
- 5 STRATEGIC STABILITY, STRATEGIC PLANS AND POLICY DIRECTORATE
- 6 (J-5), JOINT CHIEFS OF STAFF; ADMIRAL CECIL D. HANEY, USN,
- 7 COMMANDER, U.S. STRATEGIC COMMAND; AND LIEUTENANT GENERAL
- 8 FRANK G. KLOTZ, USAF (RET.), UNDER SECRETARY FOR NUCLEAR
- 9 SECURITY, DEPARTMENT OF ENERGY, AND ADMINISTRATOR, NATIONAL
- 10 NUCLEAR SECURITY ADMINISTRATION
- 11 Mr. Kendall: Yes, Mr. Chairman. Thank you for your
- 12 kind remarks at the beginning.
- 13 Chairman Sessions and I guess it is Acting Ranking
- 14 Member Nelson, distinguished members of the subcommittee, on
- 15 behalf of Admiral Haney, Lieutenant General Klotz, Honorable
- 16 McKeon, and Mr. Elliott, thank you for the opportunity to
- 17 appear before you today.
- We are or we represent the statutory members of the
- 19 Nuclear Weapons Council. The Nuclear Weapons Council, NWC,
- 20 is a joint Department of Defense and Department of Energy
- 21 National Nuclear Security Administration forum established
- 22 to facilitate priorities between the two Departments as they
- 23 fulfill their dual agency responsibilities for the United
- 24 States nuclear weapons stockpile.
- 25 We look forward to discussing both the role of the NWC,

- 1 the status of life extension programs, infrastructure,
- 2 delivery platform modernization programs, sustainability of
- 3 the stockpile and all other responsibilities charged to the
- 4 council, as well as the challenge that we face.
- 5 Sir, I would like my written testimony which provides
- 6 more detail -- if I could ask it be admitted to record,
- 7 please.
- 8 Senator Sessions: We will make it a part of the
- 9 record, without objection.
- 10 Mr. Kendall: Thank you, sir.
- Our nuclear deterrent plays a unique and critical role
- in ensuring our national security. The Departments of
- 13 Defense and Energy and the NWC have a fundamental and solemn
- 14 obligation to responsibly manage this capability, to ensure
- 15 its effectiveness and safety not only for today but into an
- 16 uncertain and challenging future.
- 17 The fundamental role of our nuclear forces is to deter
- 18 a nuclear attack on the United States and our allies, and no
- 19 other military capability we possess is more important and
- 20 deserving of our focus and attention more. For over 3
- 21 years, I have had the privilege to serve as chairman of the
- 22 NWC, along with other professionals representing our nuclear
- 23 enterprise such as those here with me today. During this
- 24 period, the NWC has responded to policy direction, including
- 25 the Nuclear Posture Review, the implications of the New

- 1 START treaty, technical developments in the aging of the
- 2 stockpile, the Defense Department reviews of the nuclear
- 3 enterprise conducted last year, and other developments.
- 4 The strategy for our nuclear stockpile that forms the
- 5 basis for our plans has remained constant during this
- 6 period. That strategy known as the 3 Plus 2 strategy
- 7 envisions three interoperable nuclear explosive packages for
- 8 ballistic missiles, ground-based and sea-based, and two air-
- 9 delivered warheads. A nuclear warhead strategy is tied to
- 10 the Defense Department's delivery system modernization
- 11 plans, which include the Ohio replacement submarine, a
- 12 replacement for our Minuteman III ICBM's, a new long-range
- 13 strike bomber, and the replacement for the air-launched
- 14 cruise missile. It is also tied to our plan to modernize
- 15 the Department of Energy's infrastructure for plutonium,
- 16 uranium, and tritium and the plan to sustain the science and
- 17 engineering base that ensures our stockpile of nuclear
- 18 weapons is safe, secure, reliable, and effective.
- 19 The 3 Plus 2 strategy addresses stockpile sustainment
- 20 and modernization and meets policy objectives of sustained
- 21 deterrence through a smaller stockpile with fewer weapons
- 22 types and a modernized, responsive nuclear infrastructure
- 23 capable of addressing the technological and geological
- 24 surprises that we may face.
- 25 Making nuclear explosive packages interoperable on

- 1 different delivery systems will reduce the number of
- 2 different systems that must be maintained and provide
- 3 sufficient diversity among our deployed systems.
- 4 Over my 3 years as NWC chairman, budget constraints,
- 5 particularly the implementation of sequestration in fiscal
- 6 year 2013, have forced the NWC to annually adjust its
- 7 stockpile maintenance and infrastructure plans to fit within
- 8 the resources appropriated. These adjustments cause delays
- 9 or cancellations, reduce work scope, or extend development
- 10 or production periods. Today we have reached a point where
- 11 all flexibility from nuclear weapons life extension programs
- 12 has been removed.
- We have worked with the U.S. Strategic Command to
- 14 adjust stockpile requirements where possible. We
- 15 continuously strive to strike the best balance between the
- 16 science and engineering required to certify the stockpile,
- 17 the program's plan to extend the life of the stockpile, and
- 18 the plans for a responsive infrastructure. Achieving our
- 19 plans for tomorrow's stockpile will require adequate
- 20 resources, national commitment, and balanced investments.
- 21 The NWC remains committed to our responsibility to ensure a
- 22 safe, secure, reliable, and effective nuclear strategic
- 23 deterrent, and we urge continued congressional attention to
- 24 the Nation's essential security needs by sustaining a stable
- 25 nuclear enterprise budget in general and in specific

Τ	removing the threat of sequestration.
2	Mr. Chairman, I thank you for your time, and we wait
3	for your questions.
4	[The prepared statement of the Nuclear Weapons Council
5	follows:]
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- 1 Senator Sessions: Thank you.
- 2 I guess I will sum it up and ask all of you -- and
- 3 Secretary Kendall, you are going to answer, I guess, first.
- 4 But do you believe that the basic plans that we have laid
- 5 out that, as I understand, you support in your opening
- 6 statement, a move to modernize our triad and our delivery
- 7 systems and to modernize the aging warheads is a substantial
- 8 need for America? It needs to be funded, and the general
- 9 outline of funds can get this job done?
- 10 Mr. Kendall: Yes, Mr. Chairman, absolutely. It is a
- 11 critical national security need. The funding that we have
- 12 requested for both Departments through the 5-year plan that
- 13 we submitted is adequate to execute our plan during that
- 14 period. After the end of that period, as we start to
- 15 actually produce the systems I talked about, we are going to
- 16 have an affordability program that we have to deal with.
- 17 And you alluded to that earlier.
- 18 Senator Sessions: And your period is what time?
- 19 Mr. Kendall: This will surface in next year's budget.
- 20 In 2021, we are going to start to have a problem finding
- 21 ways to afford these systems. We will work to do that. It
- 22 is a very high priority, and we will work to do that. But
- 23 it is going to be a challenge for us.
- 24 Senator Sessions: And do any of you have any comment
- 25 about that? Do you agree with the essential unity of

- 1 statement of purpose and goal? Any other comments you would
- 2 like to contribute?
- 3 Mr. Klotz: Senator, absolutely I agree with the
- 4 statement. I would add that from the NNSA Department of
- 5 Energy side, we have taken a very careful look at the
- 6 requirements in terms of what it means for our scientific,
- 7 technical, and engineering base at the laboratories and
- 8 production facilities, the workload that they will have as
- 9 we move through the series of life extension programs and
- 10 modernization of our plutonium, uranium, and tritium
- 11 capabilities. And this is a busy -- it is a challenging but
- 12 it is an imminently executable plan that we have laid out.
- With one caveat, just to underscore what Mr. Kendall
- 14 said, one of the most important things is stable and
- 15 predictable funding so that we can ensure that we have the
- 16 right people, the right tools, and the right facilities
- 17 there to execute this program.
- 18 Senator Sessions: Well, Secretary Kendall, you said in
- 19 March I believe of last year, quote, the program is fragile,
- 20 and any funding reductions at this point could pose
- 21 unacceptable risk to the health of the nuclear enterprise.
- 22 And you noted that budget constraints force the Nuclear
- 23 Weapons Council to annually adjust its stockpile maintenance
- 24 and infrastructure plans to fit within the money actually
- 25 appropriated. And, quote, we have reached a point where we

- 1 have removed all flexibility from the nuclear weapon life
- 2 extension programs and have worked with the Strategic
- 3 Command to lower stockpile requirements where possible.
- 4 So what do you mean by "fragile," and how serious do
- 5 you consider stable funding to be?
- 6 Mr. Kendall: It is very important.
- 7 What we have done is we have slipped the first
- 8 production of the new submarine about 2 years, which puts it
- 9 right up against -- and we have to replace the existing
- 10 submarine fleet. There are aging effects on the current
- 11 force structure that are predictable and understood, and we
- 12 have to deal with those. We acquired a lot of the current
- 13 force structure basically at the same time historically. It
- 14 is all aging out at the same time. The submarines are aging
- 15 out.
- 16 Senator Sessions: Yes, submarines. I know one is
- 17 celebrating its 30th anniversary in a few weeks, and others
- 18 are pushing 40 I believe. That is a long time to maintain a
- 19 sophisticated piece of equipment like that.
- 20 Mr. Kendall: It is a long time. Both the hulls
- 21 themselves and the reactors have predictable aging effects
- 22 that have to be dealt with. The rocket motors and our
- 23 ICBM's are similar. We have renewed those but we are going
- 24 to be at a point where we have to modernize those again.
- 25 And there are a lot of older technologies in those systems

- 1 that have to be replaced in the ICBM force. The air-
- 2 launched cruise missile is showing a lot of reliability
- 3 problems right now. It is becoming harder to maintain, and
- 4 it is going to have to be replaced as well.
- 5 What we did in this most recent budget, which you may
- 6 have noticed came in a little bit higher than last year's
- 7 request in the out-years in the 5-year plan, was we were
- 8 able to accelerate the Elkem replacement about 2 years
- 9 because of those aging effects.
- We are also seeing some effects in the nuclear
- 11 stockpile itself. We found some money -- and it is
- 12 mentioned there, the item about the requirement for
- 13 maintaining the stockpile. We found some money to address a
- 14 conventional high-explosive problem in one of our warheads,
- 15 which we had hoped would last longer than is going to be,
- 16 but we are seeing signs that it will not and we have to
- 17 replace that. So that has added a few hundred million
- 18 dollars of cost, which we were able to cover. But we are
- 19 essentially out of room to maneuver in our plan.
- 20 Senator Sessions: Well, I think you are right. We
- 21 have got a chart. Let me just show it.
- 22 [The information referred to follows.]
- 23 [SUBCOMMITTEE INSERT]

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- 1 Senator Sessions: This chart, I think, is pretty
- 2 revealing, and it is produced by the Defense Department I
- 3 believe. But it shows the blue you cannot read there is
- 4 investments, and the red is operation and support for our
- 5 nuclear enterprise, which includes the triad, I mean, our
- 6 launch system, as well as the bombs. So you can see this
- 7 dramatic reduction here in 2002 to 2010. We end up by 2017
- 8 to 2018, we got to start making some changes. This yellow
- 9 is a new submarine, the Ohio class. The new bomber. The
- 10 orange is ICBM and the new SLBM, submarine-launched
- 11 ballistic missile. And then it begins to drop again. It
- 12 drops again in 2034 through 2042.
- So I see that we have been able to go a long time,
- 14 General Klotz, without putting much money in the system, and
- 15 if we can get by and modernize our entire fleet for this
- 16 small a percentage -- maximal is the 15 percent I believe.
- 17 If we can get by at that, then we have not bankrupted the
- 18 country and have still been able to maintain a robust
- 19 nuclear deterrence that I think all of us share.
- 20 Senator Nelson?
- 21 Senator Nelson: Thank you, Mr. Chairman. And I am
- 22 going to yield most of my time to Senator King.
- 23 But let me just say this is a plan that you put out for
- 24 \$35 billion a year for 10 years, which is that blue added
- 25 above the yellow there. Now, in the decade of the 2020's,

- 1 you are expecting to product 50 to 80 pits a year. Is that
- 2 sufficient?
- 3 Mr. Kendall: We would like to have the capacity to
- 4 produce 50 to 80. That number is, in part, a hedge against
- 5 uncertainties of aging effects on the current stockpile. It
- 6 puts us in a position -- if there is a change in the
- 7 geopolitical environment or a problem with our stockpile, we
- 8 can respond to that. We do not know that we will have to
- 9 actually produce that many pits.
- 10 General Klotz can probably address that question more
- 11 fully.
- 12 Mr. Klotz: It does two things for us, Senator. The
- 13 capacity to produce pits -- which, by the way, it used to be
- 14 very substantial during the Cold War period. We had a
- 15 facility in Colorado, Rocky Flats, 30,000 square feet,
- 16 produced thousands of pits, up to 2,000 pits a year. We now
- 17 essentially have 60,000 square feet at Los Alamos in New
- 18 Mexico to do the same thing, and our pit production is way
- 19 down.
- We will have a need, as we move towards the
- 21 interoperable warhead, which will have an explosive package
- 22 that could be used on both an Air Force and a Navy ballistic
- 23 missile in the future that may require us to produce new
- 24 pits, and I would be happy to discuss that in a little more
- 25 detail in a closed session.

- 1 But also as Chairman Kendall said, this is also part of
- 2 having a responsive infrastructure and a capability to
- 3 respond to unforeseen political developments or unforeseen
- 4 technical challenges within the stockpile. It is a
- 5 capability that we need and that we are in the process of
- 6 pursuing through a plutonium strategy which has been
- 7 approved by the Nuclear Weapons Council in a collaborative
- 8 fashion. In fact, Chairman Kendall and I came up and
- 9 briefed Members of the Hill, and it has been approved in the
- 10 appropriations and authorization bills.
- 11 Senator Nelson: Well, I thought I was going to yield
- 12 to Senator King, but the time has just about run.
- 13 Let me just say -- Admiral Haney, the fiscal year 2016
- 14 budget begins a life extension of the air-launched cruise
- 15 missile. Is there a military requirement for replacing our
- 16 current air-launched cruise missile?
- 17 Admiral Haney: Senator, absolutely. And as mentioned
- 18 by Chairman Kendall, the fact of the matter is the current
- 19 air-launched cruise missile has reliability problems. It is
- 20 well over its life, designed for about 10 years, and we are
- 21 well over the 30-year point for the current missile system.
- 22 It is important from a deterrence in warfighting
- 23 requirement, given that we need to have for our air leg, our
- 24 flexible deterrent part of the triad, the ability to have
- 25 standoff capability now and well into the future.

- 1 Senator Nelson: Thank you.
- 2 Senator Sessions: Senator Fischer?
- 3 Senator Fischer: Thank you, Mr. Chairman.
- 4 Gentlemen, I was pleased to see in the budget request
- 5 this year that it moved up the development and the
- 6 production of the replacement cruise missile to 2025. And,
- 7 Secretary Kendall, previously the council had decided to
- 8 delay that to 2027. Is there a consensus now among the
- 9 members that 2025 is the date that you are anticipating and
- 10 that you probably will stay with?
- 11 Mr. Kendall: Thank you, Senator. Our preference was
- 12 always to start that program earlier. Budget realities
- 13 would not allow us to do it last year. We did, as I
- 14 mentioned, come in with a slightly higher budget
- 15 particularly in the out-years after 2016 in our 5-year plan.
- 16 That allowed us to move it back up 2 years. There was very
- 17 strong -- and Admiral Haney may want to address this. There
- 18 was very strong interest in accelerating that program if we
- 19 could find a way to do it, and we did so.
- 20 Senator Fischer: Thank you, Mr. Secretary.
- 21 And, Admiral, if you can clarify there, there is a
- 22 difference between the nuclear cruise missiles and the
- 23 nuclear gravity bombs and what they do in their missions.
- 24 Can you enlarge upon that and why we need them?
- 25 Admiral Haney: When we look at our air leg, the

- 1 flexible leg of the deterrence, it is important as we look
- 2 at today the B-2 capability, and part of that comes with the
- 3 bomber -- bomb piece. It does not have currently the
- 4 capability to do an air-launched cruise missile. The B-52
- 5 platform requires the air-launched cruise missile to provide
- 6 that standoff capability, unlike the B-2, designed with
- 7 stealth. Very important. This platform, the B-52, will be
- 8 around until around 2040. So we have more decades to come
- 9 in its utilization, and as a result, we need to be able to
- 10 have a reliable air-launched cruise missile, the long-range
- 11 strike option we talk about today, in order to address,
- 12 particularly as we look at how countries are developing more
- 13 and more anti-access, access denial type of capability, to
- 14 give us further reach and to make more complex their
- 15 decision matrix associated with escalating their way out of
- 16 a conflict.
- 17 Senator Fischer: And it offers our commander in chief
- 18 more options as you provide advice when conflicts may arise.
- 19 Correct?
- 20 Admiral Haney: That is correct.
- 21 Senator Fischer: Thank you.
- 22 Mr. Elliott, if you could comment on this as well.
- 23 These systems are not redundant. Are they? The two
- 24 systems. They are specific in their missions?
- Mr. Elliott: They are, Senator. I would add on the

- 1 bomb, for example, the B-61 that will replace the existing
- 2 inventory of those is carried by our dual-capable aircraft
- 3 also. They do not have a capability to carry the cruise
- 4 missile. They do not have the capability to carry some of
- 5 our larger weapons like the B-83. So it is critically
- 6 important that we get that for both the dual-capable
- 7 aircraft and for the strategic systems like the B-2, and it
- 8 will be available for long-range strike bomber later on.
- 9 At the same time, aging systems like the B-52, which
- 10 when the first Elkem came off the inventory or into the
- 11 inventory, was already 20 years old, now past 50 years old,
- 12 is no longer able to penetrate those defenses. Yet, it has
- 13 significant capabilities and a replacement air-launched
- 14 cruise missile, LRSO in this case, will extend its utility
- 15 to the plan in its primary role of deterring attacks on the
- 16 United States. So they are equally important and serve a
- 17 very different purpose in our plans.
- 18 Senator Fischer: Thank you.
- 19 And, General Klotz, thank you once again for allowing
- 20 Senator King and I to come and giving us a very thorough
- 21 tour of the facilities. We appreciated it and learned so
- 22 much.
- 23 But if you could comment on moving the warhead up, and
- 24 does it stabilize the load for the NNSA?
- 25 Mr. Klotz: Thank you very much for joining us out

- 1 there in New Mexico. I am sure Senator Heinrich would say
- 2 you visited two of the finest of the labs, but we love all
- 3 our children in NNSA.
- 4 Senator Fischer: We do, we do.
- 5 Mr. Klotz: If I could just make one point to what Mr.
- 6 Elliott just said. On the gravity bombs, the B-61, they, in
- 7 addition to the strategic bombers, also go into these dual-
- 8 capable aircraft. Those are fighter aircraft that can
- 9 conduct both conventional and nuclear missions. And that
- 10 capability is so essential to our overall policy of extended
- 11 deterrence, in other words, providing that nuclear umbrella
- 12 to our allies and partners across the globe. So that is why
- 13 it is very important.
- On the issue with moving the date to the left for the
- 15 long-range standoff, we looked at that very carefully. This
- 16 actually fits in very well with our workload projections.
- 17 We will be in the phase of two other life extension programs
- 18 where if we did not have work to do, we would have a gap in
- 19 work for our employees at the laboratories, as well as the
- 20 production plan. So by moving that a couple years to the
- 21 left, it actually has a positive, beneficial effect by
- 22 smoothing out the workflow, not having to go through letting
- 23 some people go and then hiring them back at a later date.
- 24 Senator Fischer: Thank you very much.
- Thank you, Mr. Chairman.

- 1 Senator Sessions: Thank you.
- 2 Senator King?
- 3 Senator King: I am not sure who to address this
- 4 question to, but I note that a lot of our nuclear force
- 5 calculations are based upon applying the terms of the New
- 6 START treaty. And my question is, is Russia abiding by the
- 7 terms of the New START treaty, and do we know that?
- 8 Mr. McKeon: Senator King, what we are seeing is that
- 9 Russia is abiding by the New START treaty. The main,
- 10 central limits of the treaty do not come into effect until
- 11 February of 2018, but the assessment of the intelligence
- 12 community at the moment is that we expect that they will
- 13 fulfill their obligations under the treaty.
- We also have ongoing inspections and verification
- 15 mechanisms in place with mutual inspections, and those are
- 16 proceeding without any violations.
- 17 Senator King: Thank you.
- 18 Mr. Kendall, when I hear the word "interoperable," it
- 19 gives me a sort of uneasy feeling because I next think of
- 20 the word "Joint Strike Fighter." Execution is as important
- 21 as vision. "Interoperable" sounds good. Are there
- 22 practical problems? Please reassure me that we are not
- 23 going to make something more expensive and difficult by
- 24 trying to make it interoperable.
- Mr. Kendall: We have completed a fair amount of study

- of options for a common word that could be used by either of
- 2 the ballistic missiles. And while we have delayed that 5
- 3 years now in our plan -- it does not start until late in the
- 4 5-year plan -- we do think that is technically feasible, and
- 5 it will lead to significant cost savings as well. So
- 6 "interoperable" in this case I think is a very, very
- 7 different matter, the idea of three largely common variants
- 8 of aircraft which is what we tried to do in the F-35.
- 9 Senator King: Command and control, a crucial part of
- 10 the nuclear deterrent. How do you feel about where we are
- in command and control particularly in light of the
- 12 developing cyber threat?
- 13 Mr. Kendall: It is a concern. I co-chair a body with
- 14 the Vice Chairman of the Joint Chiefs, Admiral Winnefeld,
- 15 which by statute now oversees the nuclear command and
- 16 control enterprise.
- We have taken some steps over the last 2 or 3 years to
- 18 put some modernization funds into that part of the
- 19 structure. Our chief information officer is currently doing
- 20 a review of that and he is going to be reporting out very
- 21 shortly to us. From the preliminary indications I have from
- 22 him, we do have some additional things that we have to pay
- 23 attention to. A lot of that infrastructure, like other
- 24 parts of the nuclear enterprise, has been aging, and the
- 25 cyber threats are getting much more severe over time. So we

- 1 have to pay close attention to that.
- 2 Senator King: We had a hearing a week or so ago with
- 3 some deep thinkers on these issues, and one of the things
- 4 they talked about was the Soviet -- sorry -- the Russian --
- 5 that is the second time I have made that mistake.
- 6 Mr. Kendall: I do that all the time too.
- 7 Senator King: The Russian stockpile of tactical
- 8 nuclear weapons. Is this a gap, if you will, in our
- 9 deterrent? We are talking here about strategic weapons. If
- 10 we are talking about deterrence, it is important, it seems
- 11 to me, to have something to deter the tactical usage.
- 12 Mr. Kendall: That is a cause for concern. The
- 13 Russians are changing their doctrine and they are pursuing
- 14 an approach that we took at one time in the 1950's. We had
- 15 a lot of small-yield, short-range nuclear weapons. The
- 16 Russians seem to be going down a similar path and their
- 17 doctrine is changing consistent with that. That would
- 18 suggest a more willingness to use those to try to control
- 19 escalation.
- 20 I would like to ask Secretary McKeon to address that
- 21 because I know Policy has been looking at that very closely.
- 22 Mr. McKeon: Senator, I probably cannot get into the
- 23 numbers in this forum, but it is not a secret that Russia
- 24 has more tactical nuclear weapons than we do. I think we
- 25 still are of the view that our conventional and nuclear

- 1 forces, taken together, provide us adequate capabilities to
- 2 deal with that disparity in tactical nuclear weapons.
- 3 Admiral Haney may also have a view on that.
- 4 Senator King: Ironically it appears that the world was
- 5 turned upside down in terms of perceptions. We had them
- 6 because we perceived the Red Army as a massive conventional
- 7 threat, and I gather they now consider us to have a more
- 8 severe conventional threat and therefore they are moving
- 9 toward the tactical weapons that we were relying upon.
- 10 Mr. McKeon: That is our assessment of why they have so
- 11 many. It is because of what they perceive to be our
- 12 overwhelming conventional spear.
- 13 Senator King: A question about deterrence. The whole
- 14 theory of deterrence rests upon rational state actors, and
- 15 we are now in a world of irrational non-state actors. How
- 16 do we develop a doctrine that is equivalent to deterrence?
- 17 Deterrence was a very effective doctrine for 50, 60, 70
- 18 years. But how do we deter somebody who, A, does not
- 19 represent a country and, B, does not care about dying?
- 20 Let the record show they pointed at each other.
- 21 [Laughter.]
- 22 Mr. Kendall: It is a policy question, and I would like
- 23 Secretary McKeon to address it. But that is a cause for
- 24 deep concern, and that is why counter-proliferation is so
- 25 important to us. We do not want one of these groups, who is

- 1 exactly as you described them, get their hands on a weapon
- 2 of mass destruction of any type.
- 3 Mr. McKeon: I do not have much to add to it. Under
- 4 Secretary Kendall said there are certain people who cannot
- 5 be deterred. We keep a close eye on terrorist groups and
- 6 others who are trying to get either nuclear weapons or
- 7 nuclear material, and we have a lot of programs in this area
- 8 that both our Department and the Department of Energy work
- 9 on, and they are also a critically important part of our
- 10 budget.
- 11 Admiral Haney: The only piece I would add, Senator, is
- 12 that as we look at the art of deterrence and the cost and
- 13 benefit ratio, it is the whole-of-government kind of
- 14 approach associated with that. And as a result, as we look
- 15 at that, although you might argue that rational thought and
- 16 terrorism, for example -- are they congruent or not? I
- 17 would just say in terms of a reactor state or not, there are
- 18 costs and there are benefits, and we have to get at that in
- 19 terms of the deterrence calculation.
- 20 Mr. Klotz: Can I pick up on a point that was raised
- 21 earlier? And that is, a very, very important part of our
- 22 overall nuclear security strategy also deals with making
- 23 sure that would-be proliferators and would-be terrorists can
- 24 never get their hands on the special nuclear materials which
- 25 they would need to either make a bomb or to fashion a

- 1 nuclear or radiological device that they could use in a
- 2 terrorist scenario.
- 3 So a large part of what we do and a large part of our
- 4 budget requests, beyond the weapons activity, has to deal
- 5 with putting in place systems to prevent proliferators or
- 6 terrorists getting that material, if somehow they do,
- 7 countering what they can do with that material, and then,
- 8 God forbid, if anything ever actually happened, being able
- 9 to respond to the consequences of that. So that is a very,
- 10 very large part of what NNSA does, drawing upon the
- 11 scientific, technical, engineering capabilities that are
- 12 resident in our network of laboratories and production
- 13 facilities.
- 14 Senator King: Thank you, Mr. Chairman.
- 15 Senator Sessions: Thank you.
- 16 Senator Heinrich?
- 17 Senator Heinrich: Thank you, Mr. Chair.
- And I want to thank you for bringing up the technical
- 19 nuke issue. I think it is something we need to put a lot of
- 20 thought into.
- 21 General Klotz and Under Secretary Kendall, I understand
- 22 that you are already working to address some of the
- 23 congressional advisory panel's recommendations for NNSA
- 24 governance reform, and I wanted to ask on the specific issue
- of NNSA's structure, is that something you plan to address

- 1 or do you think that this committee should be looking at
- 2 legislation to improve on the current organization of NNSA
- 3 within the Department?
- 4 Mr. Kendall: I am going to let General Klotz deal with
- 5 that question because it is a DOE organizational question.
- 6 But I will say that I think our relationship with NNSA
- 7 has been very good. It has been very collegial. We have
- 8 worked very closely together to try to address problems
- 9 together. I think how the Department of Energy organizes
- 10 itself and how the Congress chooses to have that
- 11 organization in place -- we will find a way to work together
- 12 and get the job done in any arrangement. But I think the
- 13 current arrangements are working fine from our point of
- 14 view. I think my colleagues from the Defense Department
- 15 would agree with that.
- 16 Mr. Klotz: Well, Senator, first of all, we appreciate
- 17 the work that was done by the panel. They are a panel of
- 18 distinguished Americans, many former Members of Congress
- 19 represented on that, and they gave a lot of thought and
- 20 spent a lot of time coming up with a very comprehensive list
- 21 of recommendations.
- Many of the recommendations that they make,
- 23 particularly in the area of management, cost estimation,
- 24 analysis of alternatives, project oversight, are things,
- 25 quite frankly, which the Department under Secretary Moniz's

- 1 leadership -- he has been in the saddle between a year and a
- 2 half-2 years. And now with confirmed leadership in key
- 3 positions at NNSA, we are already moving out very smartly on
- 4 in terms of enhancing the rigor and the discipline and the
- 5 process which we use for life extension programs,
- 6 construction projects. And many of the things that the
- 7 Secretary is doing and the Department is doing we can do
- 8 within existing authorities which the Secretary or the
- 9 Administrator of NNSA already have, and we are moving out on
- 10 that.
- In legislation that came out at the end of last year, I
- 12 am required to submit a report by March 17th, and we will
- 13 lay out in some detail our views and our responses to each
- 14 of the 19 overall recommendations and 63 sub-
- 15 recommendations. I do not think, however, we will comment
- 16 on how the Congress should organize itself as the panel
- 17 suggested we do.
- 18 Senator Heinrich: Everyone else does. You might as
- 19 well.
- [Laughter.]
- 21 Senator Heinrich: General Klotz, I want to continue
- 22 with another issue. I am a strong supporter of a modest
- 23 set-aside of funding for laboratory-directed research and
- 24 development, or LDRD. LDRD investment in high-risk, high-
- 25 payoff activities supports the national security mission

- 1 while allowing the lab scientists to pursue innovative
- 2 solutions to some of our Nation's most challenging energy as
- 3 well as national security problems. One of the things that
- 4 this really helps with is attracting the best and the
- 5 brightest talent. And I actually believe that a set-aside
- 6 for LDRD of 8 or even 10 percent can be justified.
- 7 I wanted to ask you more broadly. Do you agree that
- 8 Congress should maintain a robust LDRD program?
- 9 Mr. Klotz: Absolutely, Senator. I could not have said
- 10 it any better than you did. It has payoffs both in terms of
- 11 the basic research that is necessary to maintain the
- 12 stockpile but, more importantly, to recruit and retain the
- 13 best and the brightest out of STEM programs at our leading
- 14 colleges and universities by giving them the opportunity to
- 15 work on leading-edge scientific and engineering work to
- 16 establish their bona fides with their colleagues around the
- 17 country. And once we allow them to do that, we find they
- 18 get very intrigued by the other things that are going on in
- 19 the laboratory, and we can hold --
- 20 Senator Heinrich: We suck them in and they are there
- 21 for 30-plus years, which is really the goal. Some of our
- 22 most amazing scientists have been intrigued by these issues.
- 23 And it is one of those things that for not only retention,
- 24 but just attracting them in the first place has been
- 25 incredibly powerful.

- One of the things that I would encourage my colleagues
- 2 to do, as they get a chance to visit some of the labs, is to
- 3 ask for a specific brief on some of the things coming out of
- 4 LDRD because I have always been amazed. Not only is it
- 5 really important for this sort recruitment and retention
- 6 piece, but some of the most innovative things that spin off
- 7 and end up helping our warfighters, really saving lives,
- 8 doing things in the cyber field that we did not think was
- 9 possible just a short time ago come out of these projects.
- 10 And it is fascinating to see that window. And so I would
- 11 encourage you all to do that.
- I want to move on to Los Alamos really quickly. Your
- 13 submitted testimony says that we reinforced NNSA's need to
- 14 fully develop responsive and productive plutonium and
- 15 uranium capabilities for this Nation. Today these
- 16 capabilities and their enabling infrastructure are at great
- 17 risk and rank among our highest priority infrastructure
- 18 challenges. General Klotz, can you explain to the
- 19 subcommittee how important it is to ensure that the
- 20 replacement for the plutonium facility is built and that we
- 21 get that rolling in order to address some of the issues that
- 22 my colleagues brought up regarding pit production and
- 23 unforeseen future events?
- Mr. Klotz: Thank you, Senator. As I said earlier, we
- 25 have gone down dramatically in terms of our ability as a

- 1 Nation to produce pits either for future systems like the
- 2 interoperable warhead or in response to a technical
- 3 challenge that we have to deal with. Much of that work is
- 4 going to be done at Los Alamos. There is also work done at
- 5 our other labs and our other production facilities, but the
- 6 heart and soul of that is at Los Alamos.
- We have a plutonium strategy which this whole Nuclear
- 8 Weapons Council has agreed to that will result in
- 9 repurposing and reusing some of the space that is in the
- 10 PF-4 and at the rad lab, and also later this year, we will
- 11 establish a mission need statement regarding building
- 12 additional modules which will allow us to move some of the
- 13 work that requires the highest degree of security and safety
- 14 and free up more space within PF-4 to actually do pit
- 15 production.
- 16 Senator Heinrich: So it is important again that we
- 17 keep this on track. And we have had great support from this
- 18 committee and other committees on the Hill in terms of
- 19 moving forward. I look forward to working with you on that.
- Thank you, Mr. Chairman.
- 21 Senator Sessions: Senator Nelson?
- 22 Senator Nelson: First of all, I want you all to know
- 23 how much we appreciate what you do. It is not in the press,
- 24 and it is absolutely super important to the national
- 25 security of this country. And you all do it in a

- 1 collaborative fashion, and the results speak for themselves.
- 2 So thank you. Thank you.
- 3 Mr. Kendall, since you chair the council, it is my
- 4 understanding that as an acquisition body that works with
- 5 the NNSA to set requirements and develop planned warhead
- 6 activities as you collaborate, do you think it needs to be
- 7 expanded to include other groups such as the services or set
- 8 requirements for DOD delivery platforms?
- 9 Mr. Kendall: The short answer is, no, I do not. The
- 10 council operates by consensus, and if you expand the group,
- 11 it is harder to achieve consensus. I think we have the
- 12 right people here before you, Admiral Winnefeld represented
- 13 by Mr. Elliott, to represent the policy and the acquisition
- 14 aspects from the Pentagon, as well as the operational
- 15 aspects and the services through the Joint Staff and, of
- 16 course, the Department of Energy through NNSA's Director.
- I just want to make the comment that we do include in
- 18 Nuclear Weapons Council meetings all the relevant
- 19 stakeholders whenever we meet. So we have people there from
- 20 our comptroller, financial side of the house, from our cost
- 21 analysis and program evaluation, CAPE, organization, from
- 22 each of the military departments, and frequently from the
- 23 national security staff or perhaps OMB as well if they are
- 24 engaged on the issue. So we are very inclusive. We include
- 25 people. We hear their points of view. We take them into

- 1 account, and I think the membership is suitable as it is
- 2 today.
- I would invite my colleagues to comment on that if they
- 4 would like to as well.
- 5 Mr. McKeon: I agree with what Under Secretary Kendall
- 6 said. Everyone is in the room who needs to be in the room.
- 7 In my short time in the Department -- I just got there in
- 8 August -- my impression is it all works pretty well at our
- 9 level. There may be some skirmishes amongst our staff, but
- 10 by the time it gets to us, we come together on
- 11 recommendations. I do not get the sense that any of the
- 12 services feel like they do not have an adequate voice in
- 13 that forum.
- 14 Senator Nelson: Well, let me ask you something. You
- 15 all have identified in your report, titled "The Report on
- 16 Balance in Nuclear Weapons Programs," that you need to
- 17 certify and maintain the current stockpile, that you need to
- 18 perform the life extensions and you need to prepare to
- 19 respond to future uncertainties. Can you explain each of
- 20 those functions?
- 21 Mr. Kendall: Sure. Our stockpile -- because we cannot
- 22 do any underground testing anymore, we have to keep track of
- 23 the safety and security and reliability of the stockpile.
- 24 So surveilling the stockpile, testing it, looking for any
- 25 aging effects that might have been predicted is one activity

- 1 that we have to do.
- 2 There are aging effects that take place that we
- 3 understand, and those require us -- and also, because there
- 4 is some obsolescence of technology, we have to upgrades to
- 5 the weapons over time. The B61, for example, is responding
- 6 in part to some very obvious aging effects, which we
- 7 understand and are aware of, and we are in a bit of a race
- 8 against time to get that program and other programs like it
- 9 done. So those two aspects deal with that.
- 10 We also have to consider any needs in the future in
- 11 terms of production and have the infrastructure in place
- 12 that will support those needs. Part of this, of course, is
- 13 the life extensions programs. We need production for that.
- 14 But if we were called upon to do more in the case of a
- 15 geopolitical change or something we did not foresee, the
- 16 infrastructure needs to be there to produce weapons as well
- 17 as to meet the needs that we do foresee.
- 18 So those are the basic three pieces.
- 19 Frank, do you want to add to that?
- 20 Mr. Klotz: If I could add just a bit, Senator.
- 21 Sometimes some people will make a distinction between
- 22 production on the one hand and science, engineering, and
- 23 research on the other. In my view, it is not an either/or
- 24 situation. In order to do surveillance of the current
- 25 stockpile and also understand those aging effects, we have

- 1 to do some pretty leading-edge science and engineering,
- 2 particularly as these systems age. As the components, the
- 3 uranium, the plutonium, the tritium age, we need to
- 4 understand that. The way we understand it is by doing
- 5 diagnostic experiments and then putting the data from those
- 6 experiments and past test data into high performance
- 7 computing platforms which allow us to understand the effects
- 8 of aging. They also allow us to understand the effects of
- 9 changing components perhaps using new materials because the
- 10 old materials are no longer manufactured or available.
- 11 Mr. Kendall: If I could make a comment. I would
- 12 encourage all of you to find an opportunity to come see
- 13 nuclear weapons, come see what is in those designs. They
- 14 are not simple devices. They are extremely complicated
- 15 devices. And if you look at some of the technology that is
- in some of our older weapons and you compare that to some of
- 17 the newer life extension program designs, there is a
- 18 remarkable difference. I think it will be very obvious to
- 19 you why we need to do this work.
- The other thing I want to say is that we have devices
- 21 which are critical to national security which are terribly
- 22 destructive that we cannot test, and we have maintained
- 23 them. If you look at the chart that you have up there, this
- 24 is largely the platform side, but there is a similar set of
- 25 charts for the weapons side. We built a lot of weapons. We

- 1 tried to keep them for about 40 years. We want to be sure
- 2 that those weapons are safe, they will not go off
- 3 accidentally. We want to be that if they ever are asked to
- 4 go off, that they will go off reliably. These are very
- 5 stringent requirements. This is a very stressing,
- 6 difficult, technical task. It demands the best from our
- 7 scientists and engineers. And you should see for yourselves
- 8 what we are doing with these systems. This is a very
- 9 difficult task. And what we are doing in the science and
- 10 engineering program, other aspects of it are all necessary
- 11 to ensure the safety, security, and reliability of that
- 12 force structure.
- 13 Senator Nelson: Admiral Haney, in your opinion do we
- 14 need new nuclear weapons, or can we do the job with the
- 15 existing stockpile?
- 16 Admiral Haney: We can do the job with the existing
- 17 stockpile, Senator, as long as we work this 3 Plus 2
- 18 strategy, we work the life extension programs, as we have
- 19 been talking about here. Those are critical for us to be
- 20 able to sustain ourselves through the future. So I cannot
- 21 say enough about staying on track with the 3 Plus 2
- 22 strategy.
- 23 Senator Sessions: Well, thank you, Senator Nelson.
- 24 Sort of to follow up on that and Senator Heinrich's
- 25 questions, the 2015 STRATCOM report on balance in the

- 1 nuclear weapons program suggests that due to the current
- 2 funding emphasis on certifying the nuclear stockpile and
- 3 performing life extension programs on aging weapons, there
- 4 may be insufficient funding in science activity to respond
- 5 to future uncertainties. In other words, there is concern
- 6 about losing, quote, a full design and production
- 7 capability, close quote, which is, quote, a critical
- 8 component of the U.S. nuclear deterrent.
- 9 Maybe Admiral Haney and General Klotz, you can comment
- 10 on that.
- 11 And it also relates to the idea that we do not want to
- 12 have legislation and funding so restricted that the good
- 13 scientists who come up with good ideas are not even able to
- 14 research and test them. Of course, Congress is not going to
- 15 allow something new to be done that they have not ultimately
- 16 approved. But do you feel like that is a problem? And
- 17 would there be benefits derived from directing our
- 18 scientists and engineers to gain practice and experience by
- 19 designing at least, if not building, a new prototype weapon
- 20 as we determine -- as we go forward in the future?
- 21 Mr. Klotz: Thank you, Senator, for the question.
- I am not a nuclear physicist. I am in awe of nuclear
- 23 physicists. But when I visit the laboratories and when I
- 24 visit the production plants, it seems to me that the work
- 25 that our people are doing requires and imbues in them a very

- 1 thorough understanding of the engineering and the operation
- 2 of these very sophisticated, complicated devices. And they
- 3 are fully engaged and fully employed in that. And without
- 4 going into the details of all that that means because of the
- 5 level of sensitivity, I sense our people understand that.
- We are, of course, concerned about the fact that a lot
- 7 of our workforce is aging. Many of them came of age the
- 8 same time I did, and they are about ready to pass the torch
- 9 on to the next generation. So we have to provide them
- 10 challenging work to do, but I think they have a full slate
- 11 of challenging work to do.
- The other important thing, as far as legislation is
- 13 concerned on this or any other area -- we have a broad
- 14 consensus in the Nuclear Weapons Council that this is the
- 15 right path that we are on. I think there is a broad
- 16 consensus based upon authorization and appropriations on the
- 17 Congress that we are on the right path. It seems to me that
- 18 holding that consensus about the body of work that we have
- 19 to do both on delivery systems and warheads that we have
- 20 outlined in the 3 Plus 2 strategy is important to preserve.
- 21 Mr. Kendall: Mr. Chairman, if I may. I am not a
- 22 nuclear physicist either, but I am an engineer. And I think
- 23 the scientific and engineering challenge that we have placed
- 24 upon our people does certainly give them the experience to
- 25 be confident of their products.

- I do not think we need to do new designs. We have very
- 2 state-of-the-art modeling and simulation capabilities. We
- 3 are doing laboratory testing and other testing, to the
- 4 extent we can, to verify the performance of our systems and
- 5 the components that we are upgrading or redesigning within
- 6 the existing weapons design framework basically I think is
- 7 adequate to keep the expertise at a reasonable level. I do
- 8 not think we need to do new designs.
- 9 Senator Sessions: Admiral Haney?
- 10 Admiral Haney: Chairman, I would also add the fact
- 11 that when you look at the intricacies associated with these
- 12 life extension programs that are underway or planned, those
- in themselves are challenging to the workforce and to such
- 14 an extent that I think it also helps keep them proficient in
- 15 terms of if there was ever a need for a new design, that we
- 16 would have the workforce we need to do that, from the visits
- 17 I have had. This business of reuse, refurbishment, and then
- 18 the electronics associated with it is not trivial stuff, as
- 19 Frank Kendall mentioned, and I just want to sound off that
- 20 that in itself keeps them very gainfully not just employed
- 21 but requiring significant thinking and cranial power.
- 22 Senator Sessions: Well, let us just say it this way.
- 23 There is a consensus in the Congress, and when you say a
- 24 consensus among yourselves, I think you mean you consider a
- 25 little bit of the political world you live in when you make

- 1 those statements that you have made.
- 2 The lab directors, as I understand, are concerned about
- 3 having full design and production capability. They think
- 4 that is a critical component to a nuclear deterrent because
- 5 there could be future uncertainties and other developments
- 6 by other countries.
- 7 So I am not rocking the boat. We are not going to rock
- 8 the boat and say what some have said like if we are going to
- 9 refurbish this thing, why do we not just build a new one.
- 10 It will be safer, smaller, more capable, and more flexible,
- 11 and probably cost less money.
- So we are just going to update the ones we have got.
- 13 That is the consensus that we have got.
- But I think you do not want to hold your people back
- from if not doing design, doing work on possible new systems
- 16 in the future. Would you agree with that? Maybe we could
- 17 at least do that, Secretary Kendall?
- 18 Mr. Kendall: I think we are constrained in what we can
- 19 do, but I do think, as we said, that the work that we give
- 20 our people is adequately challenging to maintain their
- 21 expertise.
- 22 Mr. McKeon: If I can add one thing, Senator.
- 23 Senator Sessions: Yes.
- Mr. McKeon: I was in a meeting in the first term with
- 25 the Vice President, my old boss, and Secretary Chu and the

- 1 three lab directors. And General Klotz repeated this point
- 2 the other day. They all said to a person that they have
- 3 learned more in the last 20 years about nuclear weapons
- 4 during the stockpile stewardship program than they did
- 5 through several decades of testing. So you should ask them
- 6 today if they still hold that view. General Klotz said that
- 7 in our prep session the other day. So I think the work they
- 8 have is definitely challenging.
- 9 Senator Sessions: Well, good. I think we can move
- 10 forward the way we are. We will move forward in a
- 11 bipartisan way. Let us do it that way.
- General Klotz, look, I believe we need to complete the
- 13 goals we have got and to refurbish these weapons on the
- 14 timeframe we are. But it is an expensive proposition. We
- 15 talk about how little we spend, but still, it is billions of
- 16 dollars. We are talking about several years there at \$15
- 17 billion a year. I guess what I would say to you and all of
- 18 you is that if we have to have more buildings, more
- 19 infrastructure, let us know, but do not ask for more than we
- 20 need. We are not able to just rebuild whole new nuclear
- 21 laboratories and research things. The initial idea was that
- there were going to be \$8 billion and \$10 billion and \$12
- 23 billion buildings took us all a bit by surprise. So I think
- 24 you are creatively working forward with modular approaches
- 25 that get you the new space you need. So, again, if you have

- 1 to have more, please let us know, but if you can keep that
- 2 cost down, that is going to free up some money that we can
- 3 do things we need to do with.
- 4 Mr. Klotz: Senator, I recall that when we met prior to
- 5 my confirmation, that was one of the things that you
- 6 stressed, and it has been uppermost in my mind ever since.
- 7 And I think you are right in terms of the modular approaches
- 8 we take, but also in terms of repurposing some of the
- 9 existing facilities we have and also looking for processes
- 10 that will allow us to do things more effectively and with a
- 11 greater margin of safety is also a thing that we are
- 12 exploring. But we are focused on bringing discipline, rigor
- 13 that is very much already a part of the DOD into the way in
- 14 which we approach our project management, as well as program
- 15 management.
- 16 Senator Sessions: Thank you.
- 17 Senator King?
- 18 Senator King: Just a couple of follow-up questions.
- 19 One is I think your chart, Mr. Chairman, is very
- 20 informative. It would be even interesting to compare it
- 21 with the decline of the defense budget as a percent of GDP
- 22 because what you have got is a declining share of a
- 23 declining share. The defense budget in 1962 was something
- 24 like 5-6 percent of GDP. It is now at 3.3. So it makes
- 25 this even more dramatic in terms of its cost to the

- 1 taxpayers.
- Senator Sessions: Can I say one thing about that
- 3 chart? The new bomber, as I understand it, is considered
- 4 about three-fourths non-nuclear costs. So we have got the
- 5 full cost of the new bomber in there, which is really a
- 6 little higher. It makes it look a little higher than
- 7 otherwise would be.
- 8 Senator King: I do not think we have talked about this
- 9 directly. All these plans and well laid scenarios and what
- 10 you are going to do with refurbishing -- what does sequester
- 11 do to all that?
- 12 Mr. Kendall: That is a great question, Senator.
- Well, first of all, this is an extremely high priority
- 14 for us. We would, I think, have to reexamine everything
- 15 that both Departments do under sequester. That said, we are
- 16 looking at the percentage of our budget that is involved
- 17 here. We would do our best to protect this area because of
- 18 the strategic deterrence mission area is so vital. I think
- 19 we would have to make some adjustments, but I think we --
- 20 Senator King: Do you have a choice to do so, or would
- 21 sequester require cuts in this area as in all others? Would
- 22 you have that kind of flexibility and discretion under the
- 23 way the law is --
- Mr. Kendall: My understanding -- and I may be
- 25 incorrect about this -- is that after fiscal year 2013,

- 1 there is more discretion in how sequester is implemented,
- 2 and we would have some discretion. I would hope that would
- 3 be the case because doing what we did in fiscal year 2013
- 4 and taking the same cuts from everything essentially was a
- 5 very dysfunctional way to take cuts.
- 6 Senator King: But if you did protect this area, it
- 7 would simply mean that we would have to take it out of
- 8 readiness or end strength or modernization of the other part
- 9 of the Defense Department.
- 10 Mr. Kendall: That is right.
- 11 Senator King: So is it fair to say that sequester
- 12 would be damaging to this program?
- 13 Mr. Kendall: Yes, it is.
- 14 Senator King: Thank you.
- Thank you, Mr. Chairman.
- 16 Senator Sessions: Senator Fischer?
- 17 Senator Fischer: Thank you, Mr. Chairman.
- General Klotz, you were discussing the issues that you
- 19 faced with your workforce, whether they are aging and
- 20 looking at retirement, to make sure that they are challenged
- 21 with their work, to keep a workload even so you do not have
- 22 to have layoffs and lose those people to other industries.
- 23 I would ask Admiral Haney, do you have issues like that with
- 24 your workforce at STRATCOM? Do you share some of those same
- 25 concerns about keeping a workforce that has the abilities

- 1 and the needed knowledge actively employed?
- 2 Admiral Haney: Senator Fischer, absolutely I remain
- 3 concerned. I would say we had the furlough. That was a
- 4 signal to all of our workforce. Quite frankly, we lost some
- 5 people as a result of that.
- 6 You combine that as well as how some of the pundits
- 7 like to talk about this capability we have here in this
- 8 discussion, the strategic nuclear capability, and as a
- 9 result, in some of those discussions, it further devalues
- 10 what this workforce is about that is so important to our
- 11 country.
- 12 So this is an area that we spend time, just as I think
- 13 General Klotz and his team does, in terms of working intern
- 14 programs and what have you to connect this to universities
- 15 to bring in new talent while at the same time working hard
- 16 to retain the talent we have. Headquarters of your
- 17 Strategic Command is about 60 percent civilian, very
- 18 important when you look at the intricacies of the strategic
- 19 deterrent that we keep the right and relevant workforce.
- 20 Senator Fischer: And we had a discussion earlier on
- 21 the effectiveness of our nuclear deterrent and looking at
- 22 the Russians and their tactical weapons. It kind of looked
- 23 like maybe you wanted to join in that discussion. Did you
- 24 have anything you wanted to say with regards to the
- 25 effectiveness of our deterrent and also with the Russian

- 1 tactical weapons and how those affect our outlook to the
- 2 future as well?
- 3 Admiral Haney: I thought our discussion was rich, and
- 4 I agree with everything that was stated relative to our
- 5 whole capability, strategic capability, as well as
- 6 conventional capability that a joint military force operates
- 7 day in and day out.
- 8 The only piece that I would add is when people talk
- 9 about the use of a tactical nuke, I would just say if one of
- 10 those were to go off and our deterrence failed, that
- 11 tactical nuclear weapon or non-strategic nuclear weapon, as
- 12 we sometimes call it, would have a strategic effect, and
- 13 that we can ill afford to have.
- 14 Senator Fischer: Thank you very much.
- 15 Senator Sessions: Senator Heinrich?
- 16 Senator Heinrich: Let me follow up on that question
- just a little bit because with regard to the Russian
- 18 tactical nuclear weapons, or non-strategic weapons, how do
- 19 the rules of deterrence differ for tactical versus strategic
- 20 nuclear weapons in your view? Are more tactical nukes, in
- 21 other words, a better deterrent than maybe the conventional
- 22 forces? How do those general rules -- because I think
- 23 everybody intuitively kind of understands how our doctrine
- 24 and deterrence works with strategic nuclear weapons, but it
- 25 seems to me that tactical nuclear weapons do not exactly

- 1 operate by the same set of rules.
- 2 Admiral Haney: Well, I would say it is not the weapons
- 3 that operate by the rules. It is the actors, nation states,
- 4 et cetera that have those weapons at their disposal that are
- 5 more of a concern. I think it would be inappropriate for me
- 6 to compare a brigade or a conventional capability and say X
- 7 number of this equals one of that. I do not think that is
- 8 what we are talking about. I think the real key, when you
- 9 look at our strategic nuclear capability, it is to make
- 10 deterrence work so that we do not have any type of nuclear
- 11 weapon utilization, and a whole-of-government approach to
- 12 that has to be part of that equation.
- 13 Senator Heinrich: And a related question sort of
- 14 harkening back to Senator King's mention of non-state
- 15 actors. Do you have any comments about how some of the more
- 16 recent nuclear breakout states, the Pakistans, Indias, fit
- into our overall doctrine of deterrence?
- 18 Admiral Haney: I would just say that -- interesting
- 19 you would ask that question. I had a deterrence symposium
- 20 last year, and I had a Pakistani individual associated with
- 21 their program and he had breakfast with me. And I asked him
- 22 about his program, and he wanted to make sure he was clear
- 23 to me it was not a program against us. However, I would
- 24 just say it is very problematic, as we watch Pakistan
- 25 modernize its capability. And as we have stated before

- 1 here, part of this is being able to prevent more development
- 2 of nuclear weapons in the world and to contain that piece.
- 3 So looking at the modernization programs that Pakistan has
- 4 right now can be troubling as we look into the future and
- 5 how the world could change.
- 6 Senator Heinrich: Thank you.
- 7 Sort of moving back to slightly more mundane issues,
- 8 there has always been a little bit of a -- and I will direct
- 9 this back to, General Klotz -- a perpetual question about
- 10 balancing workload between Lawrence Livermore and Los
- 11 Alamos. And there have been a number of occasions where
- 12 something was developed in Los Alamos and then shifted over
- 13 to Livermore for work balance. I am curious. I would like
- 14 your thoughts on what the future holds for these two labs,
- 15 as you see it, in terms of work balance.
- 16 Mr. Klotz: Thank you, Senator.
- 17 First of all, I think we need both labs.
- 18 Senator Heinrich: For the record, I would agree.
- 19 Mr. Klotz: Thank you, sir.
- 20 One of the key things that has been a part of our whole
- 21 enterprise for the past several decades is the fact that the
- 22 labs conduct peer review with each other. And without
- 23 getting into any of the details, there have been instances
- 24 in the past where, quite frankly, one lab was able to see
- 25 things in a very different way and come up with a slightly

- 1 different solution. On the issue of the W88, which we
- 2 talked about, and the need for CHE refresh, one lab did the
- 3 primary work, and another lab checked their homework. And
- 4 that as very useful to us I think in our deliberations in
- 5 the Nuclear Weapons Council that we had that verification.
- 6 There is work the two labs do together that is very
- 7 similar, and that is where we do a lot of the balancing of
- 8 the work. But there are also some unique capabilities at
- 9 each of the laboratories. Clearly, as I said earlier, Los
- 10 Alamos is the center of excellence for plutonium science,
- 11 chemistry, and operations. It also has facilities like
- 12 DARHT, which are one of a kind. Lawrence Livermore in
- 13 California has the National Ignition Facility, which is
- 14 very, very important to us. And then, of course, Sandia in
- 15 Albuquerque is the systems engineer for the entire
- 16 enterprise. So I think we have got sort of the right mix
- 17 there, and I think the balance is appropriate.
- 18 Senator Heinrich: Thank you very much.
- 19 Senator Sessions: Thank you.
- 20 Just to pursue one a little more. In South Korea, the
- 21 President said nuclear ambitions in the United States and
- 22 Russia -- no. That is a different report.
- 23 Here it is. He said as President I changed our nuclear
- 24 posture to reduce the number and role of nuclear weapons in
- 25 our national security strategy. I made it clear that the

- 1 United States will not develop new nuclear warheads. So
- 2 that is why we have just agreed to agree. And we will not
- 3 pursue new military missions for nuclear weapons. We have
- 4 narrowed the range of contingencies under which we would
- 5 ever use or threaten to use nuclear weapons. He said that
- 6 at Hankuk University in South Korea, and it caused a lot of
- 7 unease among our Korean allies, among others.
- 8 Under Secretary of State Rose Gottemoeller in Prague in
- 9 December of last year said we have seen new and enduring
- 10 pressures on the nonproliferation regime, pressures that
- 11 threaten global stability. We are seeing nations turn away
- 12 from cooperation, turn away from the common good of
- 13 nonproliferation efforts, and cling ever more tightly to
- 14 their nuclear arsenals. I think that is true.
- 15 This is the U.S. National Intelligence Council, Global
- 16 Trends 2030 that was produced in December of 2012. Quote,
- 17 nuclear ambitions in the U.S. and Russia over the past 20
- 18 years have evolved in opposite directions. Reducing the
- 19 role of nuclear weapons in U.S. security is a U.S.
- 20 objective, while Russia is pursuing new concepts and
- 21 capabilities for expanding the role of nuclear weapons in
- 22 its national security.
- 23 It goes on to say, other nuclear powers, such as
- 24 Pakistan and potential aspirants, Iran and North Korea,
- 25 desire nuclear weapons as compensation for other security

- 1 weaknesses. Close quote. So I think that is accurate.
- 2 I asked former Secretary Kissinger at a hearing a few
- 3 weeks ago about the negotiations with Iran, and he actually
- 4 was alarmed. He thought our negotiation position had moved
- 5 too far, that we are accepting too close an ability of Iran
- 6 to have a nuclear weapon, noting that if we were down to 9
- 7 months, he explicitly said Turkey, Saudi Arabia, and Egypt
- 8 he believed would develop or buy a nuclear weapon.
- 9 And so I do not know how we achieve nuclear stability
- 10 around the world. We have had it pretty good for a long
- 11 time. But if we have three or four nations or five nations
- 12 in the Middle East all with nuclear weapons, this is taking
- 13 us in the wrong direction. It really is dangerous, and
- 14 there would be a major expansion of the number of countries
- 15 that would have nuclear weapons.
- 16 So forgive me if I am a bit concerned that de-
- 17 emphasizing our nuclear posture could have the perverse
- 18 effect of lessening confidence or increasing the desire of
- 19 other nations to expand theirs -- well, I do not know that I
- 20 will say any more about that.
- 21 If any of you would like to comment on it, I would be
- 22 -- Secretary McKeon, you are the policy man. Maybe you
- 23 would like to comment on it. But things are not going as
- 24 well as we would like with regard to the risk of nuclear
- 25 proliferation.

- 1 Mr. McKeon: Senator, you have laid out a pretty
- 2 complicated set of statements there. Let me try to address
- 3 some of them.
- 4 On the first one, in terms of the Koreans -- Mr.
- 5 Elliott may be able to add some flavor to this -- we spend a
- 6 lot of time worrying about extended deterrence and our
- 7 commitments both in Europe and in Asia. In fact, Mr.
- 8 Elliott just returned from some extended deterrence talks
- 9 both with our Japanese and Korean partners that he does in
- 10 concert with somebody on my staff, Elaine Bunn, who is the
- 11 Deputy Assistant Secretary. So he can speak to the current
- 12 Korean frame of mind.
- I would agree with Under Secretary Gottemoeller that
- 14 the nonproliferation system is under stress. We have an NPT
- 15 review conference coming up next month where the system will
- 16 be debated. In terms of the Middle East, there is no
- 17 question. It is one of the reasons that the President is
- 18 trying to prevent Iran from getting a nuclear weapon is the
- 19 concerns among proliferation among its neighbors if they
- 20 were to have a breakout capability, which is what these
- 21 talks are about.
- 22 Senator Sessions: Well, thank you.
- Do any of the others have any comments?
- [No response.]
- 25 Senator Sessions: Then we will wrap it up. Thank you

1	all. It was a very excellent panel. I appreciate the good
2	work of what you are doing, and I think it has made a
3	positive impact financially and to our national security.
4	[Whereupon, at 4:50 p.m., the hearing was adjourned.]
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