

Stenographic Transcript
Before the

Subcommittee on Strategic Forces

COMMITTEE ON
ARMED SERVICES

UNITED STATES SENATE

HEARING TO RECEIVE TESTIMONY ON THE
DEPARTMENT OF ENERGY ATOMIC ENERGY
DEFENSE ACTIVITIES AND PROGRAMS IN
REVIEW OF THE DEFENSE AUTHORIZATION
REQUEST FOR FISCAL YEAR 2017 AND THE
FUTURE YEARS DEFENSE PROGRAM

Tuesday, February 23, 2016

Washington, D.C.

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4 THE FUTURE YEARS DEFENSE PROGRAM

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U.S. Senate

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Subcommittee on Strategic

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Forces

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Committee on Armed Services

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Washington, D.C.

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The subcommittee met, pursuant to notice, at 2:33 a.m.

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in Room SR-232A, Russell Senate Office Building, Hon. Jeff

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Sessions, chairman of the subcommittee, presiding.

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Subcommittee Members Present: Senators Sessions

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[presiding], Fischer, Graham, Donnelly, King, and Heinrich.

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1 OPENING STATEMENT OF HON. JEFF SESSIONS, U.S. SENATOR
2 FROM ALABAMA

3 Senator Sessions: Our meeting will come to order.

4 We expect Senator Donnelly to arrive any moment, but I
5 would go on and share a few opening remarks.

6 This Strategic Forces Subcommittee convenes to hear
7 testimony on the Department of Energy Atomic Defense
8 Activities and Programs in Review for the Defense
9 Authorization Request for Fiscal Year 2017 and the Future
10 Years Defense Program.

11 Leading the panel of witnesses is retired General Frank
12 Klotz, Under Secretary of Energy and Administrator for the
13 National Nuclear Security Administration.

14 We thank you, General Klotz. And you know that we
15 admire your leadership.

16 He is joined by Brigadier General Stephen Davis, Acting
17 Deputy Administrator for Defense Programs; Ms. Anne
18 Harrington, Deputy Administrator for Defense Nuclear
19 Nonproliferation; and Admiral James Caldwell, the Deputy
20 Administrator for Naval Reactors. They are joined by Mrs.
21 Monica Regalbuto, Assistant Secretary of Energy for
22 Environmental Management; and Mr. David Trimble, Director of
23 United States/International Nuclear Security and Cleanup in
24 the Government Accountability Office, GAO.

25 So, we are pleased to learn that the budget request for

1 NNSA weapons activities in fiscal year 2017, some 9.2
2 billion, is consistent with the President's commitment made
3 in 2010 to secure support for the New START Treaty. We will
4 examine carefully the particulars of this request, but I
5 would agree with our colleague, Senator Jim -- Congressman
6 Jim Cooper, the ranking Democrat on the House Armed Services
7 Committee, who observed, when you were before his
8 subcommittee 2 weeks ago, these programs are the
9 Department's top priority and are going to be fully funded
10 on a bipartisan basis.

11 Nevertheless, there is reason for some concern.
12 According to the January 12th, 2016, report in the Wall
13 Street Journal, Secretary of Energy, Secretary Moniz,
14 expressed concern to the Office of Management and Budget
15 that, quote, "Without an additional 5.2 billion for out
16 years 2018 through 2021, the budget will," quote, "lack
17 credibility with Congress and stakeholders." And that's us.
18 Secretary says this budget isn't -- may not have credibility
19 with us -- and that, quote, "Failure to address these
20 requirements in the near term" -- now -- "will put NNSA
21 budget in an untenable position by fiscal year 2018," which
22 isn't far away -- 2018. So, the subcommittee will want to
23 examine this and see where we stand.

24 Constrained national defense budgets will like -- will
25 be likely toward the future. There will be a lot of tough

1 choices having to be made. But, we must ensure that the
2 critical warhead life extensions remains on schedule and
3 within cost, that facility construction is reasonable and
4 can be justified, and that these programs benefit from
5 stable, sufficient funding over the years -- we don't want
6 to be up and down, causing you more cost than you need; you
7 need to be able to know what you've got -- which is why
8 Congress needs to look carefully at the administration's
9 recent decision to pursue development of a repository for
10 high-level defense waste, separate of the development of a
11 repository for civil commercial spent fuel. By altering the
12 longstanding policy of maintaining a common nuclear waste
13 repository, we are concerned that billions of dollars could
14 be added to the defense cost, potentially squeezing out
15 modernization and new weapon systems. Some have -- I've
16 heard the future \$15- to \$40 billion is possible for this.
17 That's a stunning number.

18 So, with that, I'd like to turn to my able Ranking
19 Member, Senator Donnelly, for his opening comments.

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1 STATEMENT OF HON. JOE DONNELLY, U.S. SENATOR FROM
2 INDIANA

3 Senator Donnelly: Thank you, Mr. Chairman.

4 And I want to thank our witnesses for appearing today.

5 I understand Assistant Secretary Regalbuto and
6 Brigadier General Davis are new before our subcommittee. I
7 welcome you.

8 This hearing touches on some of the most complex
9 problems in our government. We will hear testimony from
10 Administrator Klotz on rebuilding our nuclear weapon
11 stockpile to ensure we can deter existential threats to our
12 Nation. Meanwhile, Assistant Secretary Regalbuto will
13 describe how we will treat and dispose of some 55 million
14 gallons of radioactive waste that borders the Columbia River
15 in Washington, with a similar amount at the Savannah River
16 site in South Carolina. I want to understand whether you're
17 meeting the milestones and cost estimates that you have
18 outlined to us in prior hearings and budgets. The
19 Department has, for a number of years, been on the GAO's
20 Major Program High-Risk List, and it is imperative that
21 progress be made in getting off of this list. It won't
22 happen overnight, but I hope that hearings such as these
23 maintain the proper focus on the ability to do so.

24 As always, let me thank Senator Sessions and his staff
25 for holding this hearing. They've been great partners, and

1 we look forward to today's discussion.

2 Senator Sessions: Thank you.

3 I will just introduce you all here at once:

4 Lieutenant General Klotz has been the Department of
5 Energy's Under Secretary of Nuclear Security and NNSA
6 Administrator since April of 2014. He's responsible for the
7 management and operation of NNSA, as well as policy matters
8 across the Department of Energy and NNSA enterprise in
9 support of the President's nuclear security agenda.

10 Dr. Regalbuto has been Assistant Secretary for
11 Environmental Management at the Department of Energy since
12 August of 2015. She provides the leadership necessary to
13 continue the safe cleanup of the environmental legacy
14 brought about from five decades of nuclear weapons
15 development and government-sponsored nuclear energy
16 research. And that's a big deal, and it's expensive, and we
17 need to see where we stand.

18 Mr. Trimble is the Director of U.S. and International
19 Nuclear Security and Cleanup at the GAO, and provides
20 oversight and leadership on international nuclear security
21 and cleanup issues.

22 Admiral Caldwell is the Director of Naval Nuclear
23 Propulsion Program, dual-hatted with the Department of
24 Energy and the Department of Navy. Have you melted down
25 over having --

1 [Laughter.]

2 Senator Donnelly: If so, let us know, so we can --

3 [Laughter.]

4 Senator Sessions: It doesn't look like it. You look
5 fine.

6 So, he's responsible for the command and safe, reliable
7 operation of the Navy's Nuclear Propulsion Program and for
8 all the current U.S. naval reactors deployed for usage, as
9 well as all facilities needed to ensure safe operations.

10 Ms. Harrington has been the Deputy Administrator for
11 Defense Nuclear Nonproliferation since October 2010.

12 We welcome you back.

13 She manages NNSA's billion-dollar Nuclear
14 Nonproliferation Program to secure vulnerable nuclear
15 material around the world, stop nuclear smuggling, and
16 prevent the proliferation of weapons of mass destruction,
17 which I'm -- we're all nervous about.

18 And Brigadier General Davis is Acting Deputy
19 Administrator for Defense Programs at the NNSA. He's also
20 Principal Assistant Deputy Administrator for Military
21 Applications for the NNSA, ensuring the Nation sustains
22 safe, secure, and effective nuclear weapons.

23 General Klotz, you want to lead off?

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1 STATEMENT OF HON. FRANK G. KLOTZ, UNDER SECRETARY FOR
2 NUCLEAR SECURITY, DEPARTMENT OF ENERGY

3 General Klotz: Yes, sir, I'd be delighted to.

4 Chairman Sessions, Ranking Member Donnelly, Senator
5 Fischer, Senator Heinrich, thank you for the opportunity to
6 present the President's Fiscal Year 2017 Budget Request for
7 the Department of Energy's National Nuclear Security
8 Administration.

9 We provided a -- the subcommittee a written statement,
10 and respectfully request it be submitted for the record.

11 Senator Sessions: We will make it part of the record.

12 General Klotz: We value this committee's leadership in
13 national security as well as its robust and abiding support
14 for the missions and the people of NNSA.

15 Our budget request, which comprises more than 40
16 percent of the Department of Energy's total budget, is \$12.9
17 billion, an increase of nearly 357 million, or 2.9 percent,
18 over the fiscal year 2016 enacted level. The budget request
19 continues the administration's unwavering commitment to
20 NNSA's important and enduring missions. These missions are
21 defined in the NNSA Strategic Vision, which we released just
22 last year. These include to maintain a safe, secure, and
23 effective nuclear weapon stockpile; to prevent, counter, and
24 respond to the threat of nuclear proliferation and nuclear
25 terrorism; and to support the capability of our nuclear-

1 powered Navy to project power and to project American and
2 allied interests around the world.

3 To succeed, NNSA must maintain crosscutting
4 capabilities that enable each of these core missions, again,
5 as defined in our Strategic Vision. These crosscuts focus
6 on advancing science, technology, and engineering,
7 supporting our people and modernizing our infrastructure,
8 and developing a management culture focused on safety,
9 security, and efficiency, adopting the best practices and
10 use across the government and in the commercial world.

11 If you'd like, I'd be pleased to offer a copy of this
12 document, the Strategic Vision document, for the record, as
13 well.

14 Senator Sessions: Thank you. We will make that a part
15 of the record.

16 General Klotz: The budget materials and briefings we
17 have provided describe NNSA's major accomplishments last
18 year, 2015, as well as the underlying rationale for our
19 budget proposal for fiscal year 2017. Let me briefly
20 highlight just a few of the points.

21 First and foremost, the United States has maintained a
22 safe, secure, and effective nuclear weapon stockpile without
23 nuclear explosive testing for over 20 years. NNSA's FY2017
24 Budget Request continues the steady increase of the weapons
25 activities appropriation. And, in fact, this account has

1 increased more than 40 percent since the FY2010 Budget
2 Request. As a result of the funding provided by this
3 Congress and supported by this subcommittee and the
4 significant improvements NNSA has made over the last couple
5 of years in program management, all of our life extension
6 programs are on schedule and within budget.

7 NNSA's science and technology base continues to yield
8 critical modeling and simulation data and deploy
9 increasingly capable high-performance computing in support
10 of the stockpile. Last year, for example, the National
11 Ignition Facility at Lawrence Livermore Laboratory increased
12 its shot rate -- that is, the number of experiments it does
13 -- from 191 in 2014 to 356 in 2015, almost doubling,
14 including the first-ever experiments at NIF using plutonium.

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

22 This year's request for the defense nuclear
23 nonproliferation account, Anne's account, is 6.8 percent
24 lower than the fiscal 2016 enacted level, for two reasons.
25 First, prior-year carryover balances are available to

1 execute several programs in this mission space. And,
2 second, we propose terminating the Mixed Oxide Fuel
3 Fabrication Facility Project and pursuing a dilute-and-
4 dispose approach as the fastest, less expensive path to
5 meeting our national commitment and international agreement
6 to dispose of 34 metric tons of excess weapons-grade
7 plutonium.

8 The request for our third appropriations, the Naval
9 Reactors Program, keeps pace with mission needs and
10 continues NNSA's commitment to the three major initiatives:
11 the Ohio-class reactor plant system development, the land-
12 based S8G prototype refueling overhaul in upstate New York,
13 and the spent-fuel handling recapitalization project in
14 Idaho. For each of these missions, NNSA is driving
15 improvements in management and governance.

16 For all of our programs, we have instituted rigorous
17 analysis of alternatives, defined clear lines of authority
18 and accountability, and ensured that Federal project
19 directors and contracting officers have the appropriate
20 skill mix and professional certifications to effectively
21 manage NNSA's work. Our budget request for Federal salaries
22 and expenses reflects an increasing emphasis on improving
23 program and project management across all of our mission
24 pillars.

25 So, in closing, Mr. Chairman, the nuclear security

1 enterprise continues to make significant progress. Through
2 discipline, careful planning, and your continued and strong
3 support, we believe we can make smart investments to build
4 on that progress and meet new challenges in the future.

5 Again, sir, thank you for the opportunity to appear
6 before this subcommittee.

7 [The prepared statement of General Klotz follows:]

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1 Senator Sessions: Thank you.

2 And I believe next we'll go to Dr. Regalbuto --
3 Secretary Regalbuto.

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1 STATEMENT OF HON. MONICA C. REGALBUTO, ASSISTANT
2 SECRETARY OF ENERGY FOR ENVIRONMENTAL MANAGEMENT, DEPARTMENT
3 OF ENERGY

4 Dr. Regalbuto: Thank you.

5 Good afternoon, Chairman Sessions, Ranking Member
6 Donnelly, and members of the subcommittee. I am pleased to
7 be here today to represent the Department of Energy's Office
8 of Environmental Management and to discuss the work that we
9 have already successfully accomplished and what we plan to
10 accomplish under the President's Fiscal Year '17 Budget
11 Request.

12 The total budget request for the EM program is 6.1
13 billion, which includes 673 million of proposed mandatory
14 funding and 5.3 billion for defense environmental cleanup
15 activities. The request will allow EM to maintain a safe
16 and secure posture across the complex while maximizing our
17 work on compliance activities.

18 I would like to take this opportunity to highlight a
19 number of EM's recent accomplishments:

20 At the Savannah River site, the 4,000-canister
21 radioactive glass was recently poured. Achieving these
22 milestones enables the closure of the seventh high-level
23 waste tank.

24 At the Moab site, half of the estimated 16 million tons
25 of uranium milling tailings have been removed and shipped to

1 an engineering disposal cell.

2 And at Hanford, we have completed cleanup of the bulk
3 of the river corridor, including more than 500 facilities
4 and 1,000 remediation sites.

5 The fiscal year '17 budget request will allow us to
6 continue to make progress in an ongoing cleanup priorities.
7 Among EM top priority is the safe reopening of WIPP. EM
8 continues to support recovery from the two incidents at the
9 facility that interrupted the nationwide program for the
10 disposition of transuranic waste. The request will support
11 initiating waste emplacement operations by December of 2016.

12 At Idaho, the request will support the integrated waste
13 treatment unit. This facility is planned to treat
14 approximately 900,000 gallons of sodium-bearing waste.

15 At the Savannah River site, we will complete
16 construction and ramp up commissioning activities at the
17 salt waste processing facility, which will significantly
18 increase our ability to treat tank waste. In addition, we
19 will also continue to receive, store, and process spent
20 nuclear fuel.

21 At the Hanford Office of River Protection, the request
22 supports continued construction of the Low Activity Waste
23 Facility, Balancing Plant, and outfitting of the Analytical
24 Laboratory, which are the centerpiece of the Department's
25 plan to begin the direct feed of low activity waste as soon

1 as 2022.

2 The request for Richland allow us to continue the
3 important work in the central plateau and to complete the
4 demolition of Hanford's plutonium finishing plant, once one
5 of the most dangerous buildings in the complex.

6 At Oak Ridge, the request supports continued design of
7 the Outfall 200 Mercury Treatment Facility at the Y-12
8 National Security Complex and complete the demolition of
9 Building K-27, the last gaseous diffusions enrichment
10 process building. It will mark the first time that a
11 gaseous diffusion enrichment site has been completely
12 decommissioned.

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

22 In closing, I am honored to be here representing the
23 Office of Environmental Management. We are committed to
24 achieving our mission and will continue to apply innovative
25 strategies to complete our mission safely.

1 Thank you. And be happy to answer any questions.

2 [The prepared statement of Dr. Regalbuto follows:]

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1 Senator Sessions: Thank you very much.

2 And, Mr. Trimble, I believe I omitted to introduce you.
3 You are the Director of U.S. International Nuclear Security
4 and Cleanup at the Government Accountability Office, the
5 GAO, and provide oversight and leadership and insight on the
6 United States international nuclear security and cleanup
7 issues to Congress and other institutions.

8 Thank you.

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1 STATEMENT OF DAVID C. TRIMBLE, DIRECTOR, U.S. AND
2 INTERNATIONAL NUCLEAR SECURITY AND CLEANUP, GOVERNMENT
3 ACCOUNTABILITY OFFICE

4 Mr. Trimble: Thank you.

5 Chairman Sessions, Ranking Member Donnelly, and members
6 of the subcommittee, my testimony today is based on past and
7 ongoing work and will address challenges facing DOE's
8 efforts to modernize the nuclear security enterprise, the
9 growing cost of DOE's environmental liabilities, and
10 accomplishments and planning challenges in the
11 nonproliferation program.

12 Regarding modernization efforts, let me highlight three
13 challenges facing DOE: management of the LEPs, oversight of
14 contracts and major projects, and budgetary issues.

15 NNSA estimates that it needs more than \$290 billion
16 over the next 25 years to support its modernization plans.
17 These --

18 Senator Sessions: How much?

19 Mr. Trimble: 290.

20 These plans include executing seven LEPs and depend on
21 the replacement of key plutonium and uranium infrastructure
22 assets. To carry out this work, effective management of
23 these LEPs will be essential.

24 In our February report on the B61, we found that NNSA
25 had adopted improved management approaches and has

1 incorporated some of these into its defense programs. These
2 are positive steps. But, some of these tools are yet to be
3 proven, and the B61 program has faced shortages in program
4 staff. These challenges must be navigated while the B61
5 program is operating on a constrained schedule with little,
6 if any, margin left to deal with program risks.

7 Modernization plans also depend on DOE's ability to
8 effectively manage its contracts and major construction
9 projects. In 2015, we found that NNSA does not have a
10 comprehensive policy for overseeing its M&O contractors.
11 Notably, its key policy document was incomplete, parts were
12 not being followed, and NNSA did not know if it had the
13 staff needed to carry out its oversight approach.

14 DOE has taken actions to improve its project
15 management, such as requiring Department offices to develop
16 project cost and schedule estimates according to best
17 practices. However, in our last high-risk report, we noted
18 that DOE is currently on its third round of corrective
19 action since 2008, and many of the same root causes continue
20 to be identified.

21 DOE also continues to face challenges with some of its
22 major projects. DOE has proposed to terminate MOX after
23 spending nearly \$5 billion, and is proposing to downblend
24 the 34 tons of plutonium and potentially dispose of it at
25 WIPP, which is currently closed. We have ongoing work to

1 assess whether WIPP has the capacity for this volume of
2 plutonium.

3 At Hanford, WTP continues to face longstanding
4 technical and management challenges, and DOE is pursuing two
5 new capital asset projects that will likely cost more than
6 \$1 billion. DOE has proposed adding 17 years to WTP's
7 completion date, but does not know what the final cost will
8 be.

9 Modernization plans are also complicated by questions
10 about the alignment of NNSA's plans with future budgets and
11 future competing demands for funding. In December, we found
12 that NNSA's long-term budget estimates for modernization
13 were \$4.2 billion more than what is in the administration's
14 budget figures for fiscal years '21 through '25. In
15 addition, we found that low-range estimates for four LEPs
16 exceeded estimated budget amounts in some years, meaning
17 that some LEPs could face budgetary shortfalls.

18 In addition, funding for modernization activities will
19 take place while its standing and new needs compete for
20 resources. NNSA faces billions in deferred maintenance, and
21 its current spending is below its own benchmarks to keep
22 this problem from getting worse. In addition, DOE is
23 pursuing a new strategy to build a separate repository just
24 for defense waste. DOE's analysis indicates that this
25 approach could cost billions more than using a single

1 repository for commercial and defense waste. DOE's analysis
2 cites some benefits to this approach, but officials have
3 said these benefits cannot be quantified at this time.

4 Regarding DOE's long-term environmental liabilities
5 which future defense budgets will need to fund, DOE faces
6 many challenges. Over the past two decades, GAO and others
7 have pointed out the need for DOE to take a complex-wide,
8 risk-based approach to its cleanup strategy, finding that
9 such an approach could reduce costs while also maximizing
10 risk reduction. Notably, from FY11 to '15, EM spent a total
11 of about \$23 billion on cleanup activities. Over the same
12 time period --

13 Senator Sessions: How much?

14 Mr. Trimble: 23 billion from '11 to '15.

15 Over the same time period, its estimates of its
16 remaining environmental liability rose by 77 billion. In
17 2015, EM estimated that cleanup of former weapons production
18 sites would take until 2075 and cost 240 billion. Our
19 recent ongoing work indicates that this figure is likely
20 understated.

21 Lastly, in regards to nonproliferation, we have found
22 that NNSA has made progress securing nuclear materials
23 around the world and met its targets for removing HEU and
24 downblending LEU. While progress has been made, our work
25 has found some methodological limitations in NNSA's over-

1 the-horizon long-term planning effort to assess threats and
2 trends over the next 5 to 10 years. NNSA agreed with our
3 recommendations in this area and is revising its process.

4 Thank you. I'd be happy to answer any questions you
5 may have.

6 [The prepared statement of Mr. Trimble follows:]

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1 Senator Sessions: Thank you all.

2 Mr. Trimble, while you've given us some, I think, grim
3 points, let's just briefly mention them without going into a
4 lot of detail. So, you're saying we need an overall
5 strategy to contain costs on environmental liabilities, and
6 that, from '11 to '15, we spent 23 billion, but now more
7 accurate later estimates are that we expect to spend 77 more
8 billion than we previously expected to complete the project?

9 Mr. Trimble: Yeas. So, over that time period while
10 we've been spending billions, our overall liability has
11 continued to grow. So, we're sort of not making up ground,
12 if you will.

13 Senator Sessions: And, of course, you say, through the
14 final completion, 2075, we're looking at 200-and-

15 Mr. Trimble: 40 billion.

16 Senator Sessions: -- -40 billion.

17 Mr. Trimble: And our work indicates that that is --
18 understates the actual liability.

19 Senator Sessions: So -- well, we're talking about \$240
20 billion for one part of the defense budget. I guess it
21 would be your recommendation that this would require the
22 most intense evaluation to see if we can make it better.

23 Mr. Trimble: Yeah. We have recommended in the past,
24 and others have as well, to take a risk -- overall risk-
25 based approach across the complex to maximize the return on

1 risk reduction and also cost efficiency.

2 Senator Sessions: General Klotz, the Wall Street
3 Journal reported that Secretary Moniz's letter warning us,
4 that I quoted previously, that without additional billions
5 in the years 2018 through 2021 -- 5.2 billion, in fact --
6 the budget will lack credibility with Congress and could put
7 the NNSA budget in, quote, "an untenable position by 2018."

8 So, let's talk about that. That's 5.2 billion more
9 than we included last year. And we had -- in our FYDP, we
10 thought that we were on path to modernize our nuclear
11 program and that we'd reached a bipartisan consensus that we
12 would support, basically, the President's request to do that
13 job. Do I understand Secretary Moniz to say now we are
14 going to be 5 billion short, and that shortage is going to
15 hit as early as 2018?

16 General Klotz: Thank you for the question, Chairman.

17 First of all, as I indicated in my opening statement,
18 we were very satisfied with the budget request for fiscal
19 year 2017, for the next fiscal year. We think it meets all
20 of the needs we have under our three essential and enduring
21 missions. However, as we look out towards the budget
22 projections for 2018 to 2021, we note they still remain
23 subject to the sequester cap set in the Budget Control Acts.
24 So, as -- added onto that, one of the things that we have
25 been working very hard on in the Department of Energy and in

1 NNSA is looking across the enterprise and trying to identify
2 those things which we are going to need to sustain, not just
3 in the NNSA area, but in the science area and environmental
4 management. We have a very old infrastructure, many
5 buildings that go back to the early days of the Cold War,
6 even back to the Manhattan Project, that are going to need
7 to be either replaced or significant work done to reduce the
8 deferred maintenance, which are associated with it. Right
9 now, deferred maintenance for NNSA alone is \$3.7 billion,
10 just in the buildings that we have now.

11 Senator Sessions: Well, you say that, General Klotz,
12 but, you know, people get a little dubious about these
13 things. I see one of your complaints are that tiles are
14 falling in the ceiling. It reminds me of schools that say
15 they don't have enough money to have toilet paper, when
16 they're spending \$100 billion on the school -- million
17 dollars -- and it's like, "What kind of management do you
18 have if you don't fix the tiles in your ceiling?" I mean,
19 we're at a tight budget time. Are you sure we need \$3.7
20 billion just to refurbish buildings?

21 General Klotz: That's -- as we add up the work that
22 needs to be done to prevent things like tiles falling or fix
23 water systems that are rusting out or to bring electrical
24 systems up to code, that's -- across the enterprise, that's
25 what it adds up to.

1 Chairman, this is a perennial problem, not just for us,
2 but for the DOD, as well. In my nearly 39 years of Active
3 Duty, I observed, as most people do, that the first dollar
4 always goes for mission and for people. And in very tightly
5 constrained budgets, typically what -- the practice has been
6 to defer those maintenance issues, move them to the right
7 and accept risk. At some point, you know, you just have to
8 stop accepting risk and get on with the business of
9 repairing the facility that you have, because it does create
10 these types of safety or security concerns that falling
11 tiles or other deficiencies in the infrastructure create.

12 Senator Sessions: Well, sometimes it has to be done,
13 and it has to be spent, but -- just briefly, again, so the
14 5.2 billion was not in the last year's FYDP. This is a new
15 request from the Secretary, and he emphasizes
16 infrastructure, which I assume means buildings and that kind
17 of thing.

18 General Klotz: Our emphasis has been on dealing with
19 the -- what we see as a coming bow wave in expenses to make
20 sure that the nuclear security enterprise is able to be
21 responsive for the longer term. We've just -- DOD has
22 talked a lot about the bow wave that it faces. We have a
23 similar bow wave, although, in absolute terms, it's much
24 smaller than the DOD's. But, relative to our overall
25 budget, it's fairly significant.

1 So, that's -- you know, I think the Secretary -- I
2 can't speak to what was in the Wall Street Journal
3 editorial, and I can't speak to what was supposed to be a
4 private letter between the Secretary and the OMB Director,
5 but I can say that --

6 Senator Sessions: So, this was a private leak letter?

7 General Klotz: It --

8 Senator Sessions: You don't know.

9 General Klotz: I don't know. And you know I have to
10 speak to the budget, as presented --

11 Senator Sessions: Right.

12 General Klotz: -- to --

13 Senator Sessions: I understand that.

14 General Klotz: -- by the President to --

15 Senator Sessions: So --

16 General Klotz: -- to this committee.

17 Senator Sessions: Well, I've expressed my concern.

18 We'll just to look at it, because we're in a tight budget
19 time.

20 General Klotz: But, we certainly want to work with
21 your subcommittee, your committee, and your staff as we --
22 now that we have submitted the FY17 budget, we are -- these
23 people are already hard at work on building the FY18 budget.
24 So, you know, I commit to work very closely with you and
25 with your staff as we parse out these various requirements,

1 as we see them, from FY18 on.

2 Senator Sessions: All right. Thank you.

3 Senator Donnelly.

4 Senator Donnelly: Thank you, Mr. Chairman.

5 Ms. Harrington, I noted in the budget a significant
6 decrease in the funding for nonproliferation activities.

7 And when you look at that -- you know, obviously it has to
8 do with the Russians. Could you explain exactly what's
9 driving that and how we got to that point?

10 Ms. Harrington: The decrease of work with the Russians
11 is certainly part of the decrease overall. But, since March
12 of 2014, when Russia illegally annexed Crimea, and the
13 disturbances they have continued to cause in eastern Ukraine
14 since then, violations of the INF Treaty -- and the list,
15 unfortunately, goes on and on, in terms of Russia's recent
16 behavior -- part of that behavior has been to declare that
17 they are no longer in need of cooperative work with us to
18 secure their facilities. We continue to work, where we can,
19 on prior-year money. But, as you know, in 2015 and 2016, we
20 have a prohibition, in our authorization, against using any
21 appropriated funds for projects in Russia.

22 Senator Donnelly: Do you think that this slowdown --
23 these actions by the Russians -- do you think it increases
24 the risk portfolio that's out there as to us?

25 Ms. Harrington: We believe, absolutely, that that is

1 the case.

2 Senator Donnelly: Okay.

3 General Klotz, in regard to the plutonium facilities at
4 Los Alamos, what is the status at the present time? Do we
5 have the funding, over the next 5 years, we need for the
6 modules necessary to achieve a sustainable range of 50 to 80
7 pits per year?

8 General Klotz: The short answer is no, not yet. But,
9 let me say that we are in the process of doing a significant
10 amount of work at Los Alamos in order to get out of the old
11 chemical and metallurgical building where we've been doing a
12 lot of the analytical chemistry and material
13 characterization associated with plutonium operations.
14 There are two buildings there. One's called PF4, the other
15 one's called the Radiation Laboratory, which we are
16 repurposing the space that's there, moving things around so
17 that we can get out of that building by 2019.

18 For the longer term, we are convinced that we will need
19 an approach to have additional space and safety basis in the
20 buildings to do -- to meet the congressional requirement to
21 do -- show a capacity of 50 to 80 pits by 2027. So, we --
22 I have signed out, this past year, a -- what we call a
23 mission need, critical decision zero document, saying that
24 we need to have an -- the additional capacity. We are
25 launching an analysis of alternatives, one of which might be

1 the modules.

2 For that reason, the money that you see in the out
3 years under the plutonium lines within our budget basically
4 show a wedge for what would be necessary to build the
5 modules, of 12 million a year. We will have to come back to
6 the OMB, to the Congress, after we have done this analysis
7 of alternatives, and after we have done the independent cost
8 reviews of what it would cost to do what alternative we feel
9 is the best, before we can load in significant numbers that
10 have some credibility.

11 Senator Donnelly: Thank you.

12 Admiral Caldwell, we are in the middle or working on
13 the design and engineering of the reactor and the fuel for
14 the Ohio replacement submarine, which will have a 40-year
15 life of core fuel and electric drive. In regards to this
16 program, how are we doing on the timeframe right now, on
17 schedule, and when do you expect completion?

18 Admiral Caldwell: Sir, thanks for the question. I
19 would like -- just like to say, this is my first opportunity
20 to appear before this subcommittee.

21 Senator Donnelly: Oh, we have a bunch of questions --

22 [Laughter.]

23 Admiral Caldwell: I'm so honored to be here.

24 We have enjoyed great support from the subcommittee.

25 That's enabled the success of the Naval Reactors Program.

1 And your future support will be very important to us to
2 continue that path of success. And additionally, we have a
3 great relationship with members of the subcommittee and, as
4 well, the staff. And I endeavor to maintain those strong
5 relationships.

6 Now, with regards to your question of the Ohio
7 replacement-class submarine, we are -- at the top, we are on
8 track to support the Navy's requirements. And those
9 requirements are to start construction in 2021, to finish
10 that construction in 2028, and to send that ship to sea in
11 2031. That's a tight timeline, especially when you consider
12 the size and the scope of building a ship as big as Ohio
13 replacement. It's two and a half times the size of a
14 Virginia-class submarine, and we're going to build it in the
15 same timeframe as the initial Virginia-class, of 7 years.
16 So, that's a tall order. And it's a national priority to
17 make sure that we do not gap our strategic deterrence
18 coverage at sea.

19 Now, Naval Reactors' responsibility is the design and
20 eventual procurement of the components for the reactor plant
21 and the engine room. To that end, we are progressing well.
22 The first challenge is to build the life-of-the-ship core.
23 That core, we have done design work and we're actually going
24 to de-risk the manufacturing of that by installing a
25 technology demonstration core in the prototype in New York

1 in 2019. And so, we're on a good path to lead us down to
2 getting that life-of-the-ship core, which will last 42
3 years.

4 Additionally, the design work that we've done to date
5 is putting us on a good path to procure the heavy equipment
6 in 2019. And the other big challenge is the design and
7 eventual construction of the electric drive, which will
8 power the submarine. We're on a path now with the design
9 work, building on decades of experience and knowledge, to
10 prototype the electric drive unit and start actual full-
11 scale testing in FY18. Those are significant milestones for
12 us. We're on a good path to get there. And the FY17 budget
13 allows us to continue to progress along these timelines.
14 And your support will be essential in our ability to meet
15 the Navy's goal of starting construction in 2021.

16 Senator Donnelly: Thank you, Admiral.

17 Admiral Caldwell: Sir.

18 Senator Sessions: Admiral, just briefly, the Ohio --
19 current Ohio-class has to be refueled how often?

20 Admiral Caldwell: The current Ohio-class has to be
21 refueled once in its lifetime, and we're progressing through
22 those steadily. That class of ship is now -- we're going to
23 take the life of those ships out to 40 years. We've
24 sharpened our pencils, done the study, and we're going to
25 eek out as much life as we can from those ships.

1 Now, for the Ohio replacement, not having to refuel
2 that submarine will save the Nation approximately \$40
3 billion and will restore the operational availability to
4 keep those ships at sea where we need them to meet our
5 national commitments in terms of strategic deterrence. It
6 also allows us to meet our requirements with 12 instead of
7 -- with 12 submarines instead of the current 14. And again,
8 your support from this committee has allowed us to have the
9 technical base and do the design work that's enabling all of
10 these things to happen.

11 Senator Sessions: Thank you.

12 Admiral Caldwell: Yes, sir.

13 Senator Sessions: Well, we're glad that looks like to
14 be a practical and good solution.

15 Senator Heinrich.

16 Senator Heinrich: Thank you, Chairman.

17 Let me start, General Klotz, by just saying thank you
18 sincerely for coming out to Albuquerque for the interchange
19 between SCMC and small businesses last week. We got a lot
20 of very positive feedback on that.

21 And, to Dr. Regalbuto, fair warning, I may be asking
22 for something similar to happen in the future at WIPP.
23 People think we're a small State, but we're very, very
24 large. And so, it's hard to cover those bases sometimes in
25 a very territorially large State with two labs as well as

1 the WIPP facility.

2 I want to jump on something that the Chairman brought
3 up with regard to this old infrastructure and deferred
4 maintenance, just to put a very fine point on the reality of
5 where some of these very talented folks at NNSA are working.

6 General Klotz, you and I had a chance to look at the
7 Albuquerque-area complex, someplace that approximately 1200
8 NNSA employees work at, last week. It's a complex that was
9 largely built as dormitories for the Air Force back in 1951.
10 There is asbestos problems. We saw hundreds of broken
11 windows. This is not a matter of just replacing a few tiles
12 in the ceiling. Can you talk a little bit about what some
13 of the factors were that drove your decision to seek
14 authorization to deal with some of the deferred maintenance
15 and look at a new building to replace the NNSA's Albuquerque
16 complex?

17 General Klotz: Thank you very much, Senator, for the
18 opportunity -- yeah -- thank you again for the opportunity
19 to come out and interact with the small business leaders in
20 the State of New Mexico. It was both productive and
21 actually quite enjoyable to engage with them. And thank you
22 also for coming over to visit the Albuquerque complex.

23 As you saw, and as you said, we have buildings that
24 were essentially 1950s-era Air Force dormitories that we
25 converted into office space, so there are multiple problems

1 associated with asbestos, with the HVAC systems that don't
2 work. You saw the sprinklers that were kind of dropped down
3 from the ceiling that are corroding. It's just not the kind
4 of place that you expect a quality workforce to have to work
5 in. We need quality work spaces for our quality workforce.

6 We had considered, over the years, a number of
7 potential options to get better working conditions for our
8 people in Albuquerque. One of the things we had pursued for
9 the while was the potential of a lease option. That's where
10 I came into the picture. And one of the things that the
11 Secretary -- as Mr. Trimble has pointed out -- has insisted
12 upon, in terms of our project management, a very structured,
13 disciplined approach, in terms of how we decide to do
14 projects and how we manage projects. One of those is to
15 make sure we do an analysis of alternatives. So, I
16 immediately called for an analysis of alternatives for
17 Albuquerque complex, and it worked out that actually buying
18 -- the government constructing a facility there made a lot
19 of sense, because we can save money, because the land we'll
20 use is land already owned by the government. It is, as you
21 know, adjacent to Kirtland Air Force Base, so once
22 construction is finished, you can move the fence around, and
23 you save on the cost of perimeter security. So, there are a
24 lot of reasons to go forward and do that.

25 So, I appreciate your support in getting some money

1 recolored in the FY16 omnibus bill, which allowed us to use
2 \$8 million to begin the initial design. We're requesting,
3 in FY17, an additional 15 million for completing that
4 design. We have a wedge in there, in '18, of about 50
5 million, but it's going to cost a lot more than that. But,
6 we'll -- again, that's part of --

7 Senator Heinrich: Well --

8 General Klotz: -- coming to, you know, these
9 independent cost estimates to make sure we've got the best
10 value.

11 Senator Heinrich: Exactly. And I look forward to
12 working with you on that. One of the things I learned,
13 local government, in working with rating agencies and bond
14 counsel, is that deferred maintenance is not fiscal
15 responsibility, it is a growing blackmark on your balance
16 sheet that you have to deal with.

17 I want to switch gears real quick to the M&O contracts
18 coming up at Sandia and Los Alamos. And one of my concerns
19 is just to ask you what your thoughts are on making sure
20 that both of these labs are able to remain competitive in
21 hiring and retaining the top scientists and engineers in key
22 fields, particularly those fields, like cybersecurity and
23 others, where the same talent is going to be sought by the
24 private sector, and sending the right signals to be able to
25 attract that talent in the midst of a new request for

1 proposals for M&O contracts.

2 General Klotz: Thank you, Senator. That's a very good
3 question. And I've had an opportunity to read the letter,
4 which the three laboratory directors independently have sent
5 to you, and they, all three of them, touch on this concern,
6 whether it's at Sandia or Los Alamos or at Lawrence
7 Livermore. And, as I think you will have read in there, you
8 know, one of the key things is LDRD, laboratory-directed
9 research and development. You know, this is a program which
10 allows the lab directors to have brand new graduates of our
11 top physics, chemistry, engineering programs do work at the
12 lab while they wait for their security clearances, while
13 they get integrated into the work of the laboratory. There
14 has been pressure over the past to reduce the amount of --
15 the percentage of overhead which can be used for laboratory-
16 directed research and development. And I would -- thanks to
17 your leadership, we've kind of staunched the problem there.
18 But, again, this is something that we need to work at.

19 There are other things in the contracts that we
20 typically write with our laboratories. We give them
21 flexibility to offer hiring bonuses, retention bonuses,
22 incentives, and to engage in other activities, like teaching
23 at the University of New Mexico, as some of our people do.

24 And finally, on these two particular -- if and when we
25 get to competition on both of these laboratories, one of our

1 new procedures in NNSA over the past couple of years is that
2 we will send out a draft request for proposal before we send
3 out the final request for proposal. And that is the
4 opportunity for all stakeholders, whether it is the local
5 community, local academic institutions, Members of Congress
6 and their staff, contractors -- potential contractors -- to
7 comment on what we have put into the draft RFP before we
8 send it out. And we'll do that with any M&O contracts that
9 we do from now on.

10 Senator Heinrich: Great.

11 Mr. Chair and Ranking Member Donnelly, I'm pleased that
12 General Klotz brought up LDRD. And one of the opportunities
13 that we have is to fix the sort of double-dinging them for
14 overhead on this LDRD, which is really key for attracting
15 new scientists into the complex. And I think we have a good
16 work -- working proposal for that, either through the energy
17 bill, where I'm working on an amendment, or potentially
18 through the NDAA. And I look forward to working with you on
19 that.

20 Senator Sessions: Very good.

21 Senator Heinrich: Thank you.

22 Senator Sessions: I know you're on top of this issue.

23 Senator Fischer.

24 Senator Fischer: Thank you, Mr. Chairman.

25 And thank the panel for being here today.

1 General Klotz, it's good to see you again.

2 In the FY2017 budget request, General, for the W80-4
3 Life Extension Program, we're looking at about 92 million,
4 or 30 percent, less than the amount that was projected in
5 last year's FYNSP. The justification documents note that
6 the program, quote, "will ramp up at a slower pace, and
7 planned technology maturation activities will be reduced,
8 but the slower ramp-up is not expected to impact planned FPU
9 in 2025."

10 With respect to that statement about the technology
11 maturation activities, we know, from previous lessons
12 learned, that that early technology -- those maturation
13 activities, they do reduce the risk over the life of a
14 program. And so, I'm questioning when we are looking at
15 cutting back on those -- would you say that's cost avoidance
16 or cost deference?

17 General Klotz: If I could, Senator, let me offer a --
18 an initial response to that, and then if I could ask General
19 Davis, since we brought him all this way --

20 [Laughter.]

21 General Klotz: -- and he is the expert on this.

22 Senator Fischer: Okay.

23 General Klotz: First of all, one of the reasons why
24 the ramp is not as steep as it was -- as we projected last
25 year is, quite frankly, what programmers would call a fact

1 of life. The amount of money we were authorized and
2 appropriated in fiscal year '15 was \$10 million. We had
3 asked for \$195 million to begin the program in earnest in
4 fiscal year 2016, but, as you'll recall, we were in a CR
5 for, you know, a good 3 months of that. As a result, we
6 could only spend -- we were -- annually, 10 million, but
7 what that worked out to was 2.5 million for that 3 months,
8 because it's allocated quarterly. So, thankfully, and
9 thanks to your support, the Congress passed the full
10 appropriations we had requested of 195 million for 2016,
11 but, since we're already 3 months into the fiscal year and
12 we had only been able to spend 2.5, we know we're going to
13 have a significant amount of carryover. So, given the fact
14 that we had to balance a lot of programs against -- in our
15 portfolio against a cap, we chose to use -- cash flow that
16 into FY17, and so the ramp will pick up again in our
17 submission for FY18.

18 So, that's -- that was the thinking. It was just a
19 business decision. We weren't sending any kind of signal.
20 It's still an increase in the overall request for the W80-4,
21 because we think both the W80-4 and the long-range standoff
22 capability that the Air Force is pursuing are
23 extraordinarily important programs for America's strategic
24 deterrence.

25 Senator Fischer: Before the General speaks -- so,

1 you're looking at, still, I think, a decrease in what's
2 needed, though, correct?

3 General Klotz: We still think --

4 Senator Fischer: And doesn't that put the completion
5 date out even further?

6 General Klotz: There will be some increased risk, but
7 we're still fairly confident. And I noticed that one of the
8 laboratory directors indicated that, as well, in her letter,
9 that we're still confident we can meet the FY2025 first
10 production unit.

11 Senator Fischer: Okay.

12 General.

13 General Davis: Senator, I'd just add a couple of
14 points to General Klotz's comments.

15 First, we certainly agree that the value of putting
16 money in tech maturation is very important. It reduces risk
17 to programs across the portfolio. And, had we had the
18 money, we certainly would have liked to -- applied it to
19 technology maturation.

20 In this particular case, the cut in FY17 of \$90 million
21 actually help us to fund other technology maturations across
22 the NNSA enterprise.

23 Senator Fischer: Now, is that due to the carryover --

24 General Davis: Well, that is due --

25 Senator Fischer: -- that was --

1 General Davis: -- to the carryover. So, the program
2 couldn't spend it, so we basically harvested it from the
3 W80-4, in the short term, to apply to technology maturation
4 and surveillance activities in FY17. I would also add that,
5 in FY20 and '21, we will add money back into the program.

6 Senator Fischer: So, you're basically hoping that the
7 cost -- the revenue will come out in the out years, then,
8 for it.

9 General Davis: Well, I mean --

10 Senator Fischer: You're kind of banking on that in
11 order to complete the project in the future by having more
12 revenue --

13 General Davis: Well, in this case, the impact to the
14 80-4 is really based on the delay of funding and not based
15 on the FY17 cut. The FY17 cut is really a fact of life.
16 There's only so much money that we can spend on the program
17 in FY17.

18 Senator Fischer: General --

19 General Klotz: But --

20 Senator Fischer: -- you want to speak, I can see that.

21 General Klotz: But, full and consistent funding is
22 absolutely critical. And, if I can say it now, I've got --
23 we've said up here before -- long-running CRs also can play
24 havoc with schedule on any of these programs, because that's
25 money that our laboratories cannot use to staff up to do the

1 types of work -- the procurement -- long-lead procurements
2 that they need to do.

3 Senator Fischer: If I could, Mr. Chairman.

4 When you speak about the impact of the CR and staffing
5 up, could you -- do you have any idea, just off the cuff
6 here, on how many positions that you would be losing due to
7 a CR and not being able to move ahead on programs?

8 General Klotz: I'd -- Senator, I think we would have
9 to look at that by individual programs. I know, in the case
10 of the W80-4, a lot of that money in the 195 was for
11 Lawrence Livermore to begin to staff up to do the work on
12 the W80-4. So, they had to delay some of that until they
13 had the money in the bank to do that. And then, oh, by the
14 way, there's also an issue with a backlog of security
15 clearances, as well. So, you know, that's the fact of life
16 that they have to deal with.

17 Senator Fischer: Okay. Thank you.

18 General Klotz: And as you get further -- as the
19 program gets more mature, then it becomes an issue of, you
20 know, procuring items that you need to actually do -- to do
21 the work.

22 Senator Fischer: Thank you.

23 Senator Sessions: Senator King.

24 Senator King: Thank you, Mr. Chairman.

25 I'm going to take it from the detail to much higher

1 level.

2 One of the common questions I get in Maine, people are
3 all concerned about the deficit and the debt that we're
4 leaving our children. And it's scandalous, but that's
5 another discussion. But, one of the questions I get is, Why
6 are we modernizing nuclear weapons? Why are we building
7 brand new submarines, new bombers? I think I know the
8 answer to that, but, General Klotz, you want to take a pass
9 at that? You're talking at a -- you know, to a group of my
10 constituents in Topsham, Maine. Tell them why we need to be
11 spending all this money, \$12 billion just in your budget,
12 and that doesn't count Ohio-class replacement, long-range
13 strike bomber. You know, and they say, "Well, the Cold War
14 was over a long time ago. Why are we doing this?"

15 General Klotz: Well, Senator, it's true, the Cold War
16 was over a long time ago, but we still live in a very
17 dangerous, complex world, and nuclear weapons still exist in
18 other countries besides the United States. And as long as
19 those nuclear weapons exist, we need to maintain a
20 capability to deter their possible use against the United
21 States or our friends and allies across the world. And the
22 way you deter the use of nuclear weapons that we've -- we
23 have -- the path we have followed for several decades is to
24 have the -- a nuclear deterrent of our own to act as a
25 repose to that. As long as you have nuclear weapons, you

1 have to make sure that -- as I've said earlier, they have to
2 be safe, we have to have confidence that they will not --
3 there will not be accidents resulting with them, that
4 they'll be secure, that nobody can steal them, and they have
5 to be effective, because a deterrent is only credible if it
6 can be -- if it's capable of being carried out.

7 So, these weapons that we have now -- I'll just talk
8 about the warheads, but not the delivery systems -- our
9 stockpile, average age, is the oldest it's ever been since
10 the beginning of the Atomic Age. And nuclear weapons, you
11 know, are made up of an -- you know, inert material, but
12 it's still material that's subject to age and the various
13 effects associated with age.

14 Senator King: And, of course, it's complicated by the
15 fact that we can't test them.

16 General Klotz: We can do a pretty good job now, by
17 virtue of the Stockpile Stewardship Program, where we
18 conduct diagnostic experiments on various components
19 associated with the nuclear weapons. We put that data,
20 along with the data from 1,054 nuclear tests that we did
21 conduct when we were still actively testing, up until 1992,
22 and put them together, put them in algorithms that we run on
23 high-performance computers, and we have a very good sense,
24 based on that, on how these weapons age or, if we make a
25 decision that we have to manufacture a particular

1 subcomponent of a nuclear weapon because the original
2 manufacturer is out of business or the material they use is
3 no longer available, or there's a cheaper, faster way to
4 make it, that we can certify that -- using that component as
5 we do a Life Extension Program.

6 Senator King: I appreciate your answer. And that's
7 essentially the answer I give. But, I think it's important
8 for policymakers at a high level to have this discussion so
9 the public does understand -- the only thing worse than
10 nuclear weapons is not having them and have other people
11 have them and use them, and the deterrent -- deterrence has
12 worked for 80 years -- 70 years.

13 Admiral Caldwell, let me turn to a different question.
14 On questions of modernization, and particularly with the
15 Ohio-class submarine, it concerns me that these projects are
16 now taking so long from conception to construction that they
17 are obsolete the day they come off the line. To what extent
18 are you all considering that fact and building -- the term I
19 use is modularization -- I don't -- there may be a better
20 term -- but, ways that we can upgrade easily without having
21 to go back and say, "Well, we need a third generation of
22 Ohio-class submarine"? Do you see what I'm saying? A
23 platform that can be changed out and modernized without a
24 new platform being conceived and built. Is this part of
25 your design strategy?

1 Admiral Caldwell: Well, sir, I think -- I can talk
2 about the Naval Reactors portion of this.

3 Senator King: Right.

4 Admiral Caldwell: And then I can give you some
5 thoughts on my experience as a submariner.

6 I think the proof is in the history of what Naval
7 Reactors has done. Our platforms, we are using them much
8 longer today than we ever intended to. For example, I
9 talked about the current Trident class that was not designed
10 to be around as long as it is today, but we designed it with
11 toughness and high quality, and it -- we're taking that out
12 to 42 years of operation. I said 40 earlier. I meant --
13 it's 42 years. And so, that's longer than we've operated
14 any class of submarines before. And likewise, with our Los
15 Angeles-class submarines, we've been able to extend the life
16 on those ships, as well. We have a few in the inventory now
17 that are out at 36 years and still operating. These were
18 ships that were built at the -- during the Cold War,
19 designed to run in the Cold War, and are now operating all
20 around the world, answering the Nation's needs. So, I think
21 -- and then I'll give you one final point on that. The two
22 prototype reactors we operate in Charleston, where we train
23 students, those are 52 years old. We are operating those
24 plants much longer than we ever thought, in a way we never
25 thought we were going to, to train students. They're the

1 oldest pressurized water reactor plants in the world, and
2 they're operating well. I've inspected them personally.

3 Senator King: -- would probably recognize them if he
4 stumbled into the --

5 Admiral Caldwell: Well, they're -- no, I would dispute
6 that. I think they are in great shape, and they're -- they
7 look terrific. I've inspected them myself. And they're
8 still turning out students. And this is all because we
9 built them toughly, we designed them the right way, and
10 we're manning them and maintaining them the right way. So
11 -- and the reactor plant, I can tell you, we build them to
12 last, and we -- and we're doing that with the Ohio
13 replacement, as well. We're taking the lessons that we've
14 learned, and we're making it better.

15 On the forward end of the ship, we've done things like
16 taking off-the-shelf technology -- commercial off-the-shelf
17 technology. Our sonar, fire control, and electronic support
18 systems are all upgradable. We're taking an old submarine,
19 like the one I served with when I commanded Jacksonville --
20 that ship has a modern fire control and sonar system that
21 would rival any submarine in the world. So, I think we're
22 on a good path, sir.

23 Senator King: Good.

24 Thank you, Mr. Chairman.

25 Senator Sessions: Thank you.

1 Senator Graham.

2 Senator Graham: Thank you, Mr. Chairman.

3 Let's talk MOX.

4 [Laughter.]

5 Senator Graham: Okay.

6 General Klotz: I'm not surprised.

7 Senator Graham: All right. So, let's inform the
8 committee --

9 Senator Sessions: There was a gasp when you came in
10 the room.

11 [Laughter.]

12 Senator Graham: Yeah. Yeah.

13 General Klotz: We were doing so well.

14 [Laughter.]

15 Senator Donnelly: Actually, Senator Sessions said to
16 me, "Here comes Justice Graham."

17 [Laughter.]

18 Senator Graham: Yeah. General Sessions. I like that.
19 You know, you used to be attorney general.

20 [Laughter.]

21 Senator Graham: The MOX program is designed to take 34
22 metric tons of weapons-grade plutonium and turn it into
23 commercial-grade fuel. Is that right?

24 General Klotz: That's correct.

25 Senator Graham: And that 34 metric tons of weapons-

1 grade plutonium could create thousands of warheads.

2 General Klotz: Yes.

3 Senator Graham: Is that right?

4 General Klotz: Yes.

5 Senator Graham: The Russians are going to take 34
6 metric tons of weapons-grade plutonium and do what with it?

7 General Klotz: Under the Plutonium Management
8 Disposition Agreement, which you are very familiar with,
9 Senator, that we signed with the Russians around 2000, they
10 will do the same.

11 Senator Graham: They going to MOX it?

12 General Klotz: They're going to --

13 Senator Graham: Fast breeder reactor, right?

14 General Klotz: Yeah, fast breeder reactor. Or --

15 Senator Graham: Okay. So, they're going to dispose of
16 it, but just a different way.

17 General Klotz: Yeah, we -- we're going to use light
18 water -- pressurized water --

19 Senator Graham: Right.

20 General Klotz: -- reactors to burn MOX fuel.

21 Senator Graham: So, this is a good thing.

22 General Klotz: Getting rid of 34 metric tons of --

23 Senator Graham: Yeah.

24 General Klotz: -- plutonium is a good thing.

25 Senator Graham: Yeah, it's a good thing for Russia to

1 dispose of their excess weapons plutonium. It's a good
2 thing for us to do that.

3 General Klotz: Yes.

4 Senator Graham: Probably one of the biggest
5 nonproliferation success stories in modern times?

6 General Klotz: It is -- certainly ranks up there.

7 Senator Graham: Okay. In 2010, we signed an agreement
8 with the Russians, right?

9 General Klotz: We modified an agreement --

10 Senator Graham: Modified an agreement.

11 General Klotz: -- in 2010.

12 Senator Graham: In 2010, they said they would use the
13 fast breeder reactor system, and we said okay.

14 General Klotz: Yes, Senator, that is correct.

15 Senator Graham: And we told them we were to MOX it.
16 We're going to take the plutonium pits, we're going to send
17 everything to South Carolina, create a MOX facility, lend
18 the weapons-grade plutonium down to commercial-grade fuel,
19 and that was our pathway forward, right?

20 General Klotz: Yes, sir.

21 Senator Graham: Okay. Now we come to find that the
22 MOX program is, by some -- in some people's estimation,
23 cost-prohibitive. Is that right?

24 General Klotz: That is correct.

25 Senator Graham: Who, in 2010, picked this program?

1 And why did they not know it was cost-prohibitive in 2010?

2 And has anybody been fired?

3 General Klotz: That, I don't know. I was doing other
4 things --

5 Senator Graham: Okay.

6 General Klotz: -- in 2010.

7 Senator Graham: So, here's what I want the committee
8 to understand. We had an agreement that's really good for
9 the world. We picked a methodology, to dispose of the
10 plutonium, that had been vetted for about a decade. MOX was
11 chosen because it was a option that would work. The
12 Russians were okay with the MOX program. And our
13 government, in Republican and Democratic administrations,
14 chose MOX over all other alternatives. Five years later,
15 we're talking about canceling the program when it's 60
16 percent complete.

17 Have we talked to the Russians at all about what would
18 happen if we changed the disposition plan?

19 General Klotz: We have had informal discussions with
20 our counterparts in Rosatom.

21 Senator Graham: Who makes the decision in Russia as to
22 whether or not they would accept a change?

23 General Klotz: I can only base that based on having
24 served in Moscow for 2 years in our Embassy, and I would
25 say, like in the United States, it would be an interagency

1 process that would involve Rosatom --

2 Senator Graham: So, we don't know who the final
3 approval authority is.

4 General Klotz: I would suspect it would be the
5 Ministry of Foreign Affairs --

6 Senator Graham: Okay, right.

7 General Klotz: -- because they're the ones who
8 negotiated at -- with the State Department.

9 Senator Graham: Okay. The new disposition plan is
10 what?

11 General Klotz: The new -- our preferred approach,
12 because we think it's faster and cheaper, would be to dilute
13 the excess plutonium in a --

14 Senator Graham: Would that require the Russians to
15 agree to that change?

16 General Klotz: The Plutonium Management Disposition
17 Agreement says that you will dispose of this by irradiation
18 or other means, as agreed by the --

19 Senator Graham: Does that require their approval?

20 General Klotz: That's -- a reading -- a fair reading
21 of the --

22 Senator Graham: We'd have to get the Russians to sign
23 up. When you dilute it down, where do you send it?

24 General Klotz: We would send it to a -- either WIPP or
25 a repository like WIPP. We already have --

1 Senator Graham: Where is that at?

2 General Klotz: The weapon -- the Waste Isolation --

3 Senator Graham: What State?

4 General Klotz: -- Pilot Project --

5 Senator Graham: What State is it in?

6 General Klotz: In the great State of New Mexico.

7 Senator Graham: Have you talked to anybody in New
8 Mexico about would they accept this material?

9 General Klotz: Yes.

10 Senator Graham: What did they say?

11 General Klotz: You will find the local communities are
12 quite willing to --

13 Senator Graham: Do the local communities decide?

14 General Klotz: I can't speak to all of New Mexico's --

15 Senator Graham: All I'm telling the committee is,
16 you're talking about sending it to New Mexico, and people in
17 Mexico are at least divided. Have you talked to the two
18 Senators in New Mexico?

19 General Klotz: I personally have not.

20 Senator Graham: Don't you think it would be important
21 to get their input?

22 General Klotz: And that's where we are now.

23 Senator Graham: Okay. It's only cheaper if it works.

24 General Klotz: Well, we -- that is a fair point, but
25 we -- we're quite confident this will work. There's already

1 --

2 Senator Graham: Well, are you quite confident that
3 people in New Mexico will accept the product?

4 General Klotz: There's already 5 million metric -- 5
5 metric --

6 Senator Graham: That's not the question.

7 General Klotz: -- 5 metric tons there.

8 Senator Graham: Are you confident that the people in
9 New Mexico will buy into what you're proposing?

10 General Klotz: If you're asking Frank Klotz's personal
11 opinion, the answer is yes.

12 Senator Graham: Okay. So, tell me what the two
13 Senators said when you talked to them about it.

14 General Klotz: No, I said I had not yet talked to them
15 --

16 Senator Graham: Well, how in the world can you say
17 that Mexico -- New Mexico's okay, when you haven't talked to
18 the two Senators? Because I've talked to both of them, and
19 they're not okay. So, we're going to go from one extreme to
20 the other. What law has to be changed to make this happen?

21 General Klotz: There would have to be -- and, of
22 course, Monica, since she has responsibility for WIPP, is
23 probably better --

24 Senator Graham: Would any laws have to be changed to
25 make this accommodation?

1 Dr. Regalbuto: It will require program modification
2 and approval by the --

3 Senator Graham: Okay. Have you told me what it would
4 be? Do we have the votes for it? What does it look like?

5 Dr. Regalbuto: There has been no record of decision to
6 --

7 Senator Graham: Okay.

8 Dr. Regalbuto: -- do any of this.

9 Senator Graham: So, what we're doing is stopping a
10 program that there's questions about the actual cost, we're
11 coming up with an alternative that nobody has any idea if
12 it'll work. The Russians are not on board. Nobody's really
13 run this through the Russian system. New Mexico, which
14 would be the new site for disposal, hasn't been consulted.
15 There are legal changes that I don't know if we could
16 accommodate, or not. And we don't know if it works. Other
17 than that, this is a good plan.

18 General Klotz: We think it's an excellent plan, in --

19 Senator Graham: I think it's a lousy plan.

20 General Klotz: -- in the sense that --

21 Senator Graham: Let me just --

22 General Klotz: Okay.

23 Senator Graham: I think this is going -- this is
24 what's wrong with the government. Somebody 5 years ago --
25 please indulge me --

1 General Klotz: Yes, sir.

2 Senator Graham: -- came up with a disposition plan
3 that now they say costs way too much, and it's 60 percent
4 complete. Who the hell decided that it would work, to begin
5 with? And not one person's been fired. So, 60 percent of
6 it's done. Now we're going to change horses and come up
7 with a plan I don't -- have zero confidence in. Nobody's
8 run this through the New Mexico traps, nobody's talked to
9 the Russians. We don't even know if this is -- has a remote
10 chance of happening, and we're going to stop this program,
11 with no alternative, in my view. This is exactly what's
12 wrong with the government.

13 If you could prove to me there's a better, cheaper way
14 to do this that meets our goals, I'm all for it. But, what
15 you've done to the State of South Carolina is get us to sign
16 up for a pig in a poke. I spent a lot of political capital
17 convincing the people of South Carolina this is a good
18 mission for us and the country, to take 34 metric tons of
19 weapons-grade plutonium, which is not a popular thing to ask
20 your State to do, with the understanding there was a pathway
21 forward, that we would do a certain thing with this weapons-
22 grade plutonium, be good for the site, be good for the
23 Nation. We're 60 percent complete, and they're going to
24 stop it, with no alternative. This is what's wrong with the
25 government.

1 I don't know how we fix this, but somebody needs to be
2 fired for putting this in motion. I have very little
3 confidence that the Russians are going to agree without a
4 heavy price to be paid. This is not the time to go to the
5 Russians and ask for a favor. I've got almost zero
6 confidence that New Mexico's on board, because nobody's
7 really vetted this. And when it comes to changing the
8 program, I just don't know how it would work, legally.
9 You're going to get sued by everybody when you start over.

10 So, we're in a mess. It's not the General's fault,
11 like you all. But, this is an example of the government
12 just completely out of touch with reality. Anybody in the
13 private sector would be fired. If you had a company, and
14 they made this proposal to the company board, and, halfway
15 through, 60 percent through, you said, "Well, it won't
16 work," somebody would be fired.

17 Somebody needs to be fired.

18 Thank you, Mr. Chairman.

19 Senator Sessions: Well, Senator Graham has been
20 involved in these issues for a long time. He has worked
21 with South Carolina to help us save a good deal of money in
22 cleanup.

23 Senator Graham: \$16 billion.

24 Senator Sessions: \$16 billion. And so, we're a long
25 -- this is not a good deal. Maybe, Mr. Trimble, could GAO

1 tell us who made the recommendation, when they made it, and
2 would you report back to us to that effect? Or maybe you
3 know already.

4 Mr. Trimble: I can take that question back. We may
5 have some of the earlier documentation on the Analysis of
6 Alternatives that was done in the past. I have some
7 recollection of seeing it, but I can't recall the answers to
8 that.

9 [The information referred to follows:]

10 [SUBCOMMITTEE INSERT]

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1 General Klotz: But, may I say, this is the President's
2 proposal. And when I used to teach political science at the
3 Air Force Academy, the saying was, you know, "The executive
4 branch proposes, the Congress disposes." This is the
5 proposal that we have made. We've laid out our reasons, in
6 terms of cost and risk associated with it. We've tried to
7 make the best case. So, we've done the best we can do --

8 Senator Graham: General, I'm not blaming you. I mean,
9 you came on after all this happened.

10 General Klotz: Yeah.

11 Senator Graham: Somebody set in motion a system that
12 they completely -- either the people now saying it costs too
13 much don't know what they're talking about or the person
14 that said that it will work didn't know what they were
15 talking about. Somebody's wrong. I want to get to the
16 bottom of it, because we did save \$16 billion, Mr. Chairman,
17 under your leadership, by taking high-level waste and
18 leaving part of it in the tanks. Instead of scraping it
19 completely clean, we accepted some high-level waste by
20 putting concrete in the bottom. It didn't pollute our
21 environment. I had to fight every environmentalist in the
22 Southeast, but it saved \$16 billion, and it was good for the
23 government, it didn't hurt my State. So, I'm very open-
24 minded about being reasonable. I just feel like that we're
25 not being treated fairly. That's all I'm saying.

1 Senator Sessions: I understand.

2 General Klotz -- well, we just had, before you came,
3 testimony that from '11 to '15 we've spent \$23 billion in
4 additional for cleanup, but now we've got a new estimate
5 that said the total cost is going to be 77 billion more than
6 we estimated. So, we didn't make any progress. We're still
7 falling further behind.

8 But, General Klotz, on -- in terms of money expended,
9 what is the percentage of the money, do you know, on the MOX
10 facility in South Carolina?

11 General Klotz: I do. If I could turn to that.

12 First of all, the MOX project is more than just the
13 facility which we've been discussing, which is the MOX fuel
14 fabrication facility. It also includes a number of other
15 facilities, one of which has been completed at South
16 Carolina, called the Waste Solidification Building. So far,
17 we have spent \$4.8 billion on the MOX fuel fabrication
18 facility itself. The estimates of what it will cost to
19 complete that facility alone vary as to whether you're using
20 the Army Corps of Engineers or MOX Services -- that's the
21 contractor -- or a series of about three different reports
22 which have been done over the last couple of years within
23 DOE by a red team chaired by Dr. Tom Mason of Oak Ridge
24 National Laboratory and by Aerospace Corporation. And some
25 of those numbers vary, you know, as high as \$21 billion for

1 the total project cost for that.

2 Now, we estimate costs complete by virtue of --
3 percentage complete -- strictly on cost. I know there's
4 different ways of doing that. So, when we say it's a
5 certain percentage, it is that 4.8 divided by the total
6 amount that is needed for the whole project.

7 Senator Graham: Mr. Chairman, I don't mean to belabor
8 this, but I'd invite everybody to spend -- I can show you
9 this. Seventy six -- 70 percent complete, according to the
10 -- I can show you the facility. It's a big, massive thing.
11 I'll be glad to show it to you. And if there's a better way
12 of doing it, I want to know what that is. And will it
13 actually work?

14 Senator Donnelly: So, we talk about 23 billion spent,
15 77 billion to go, and then we talk about 70 percent
16 complete. How do the numbers match up?

17 Mr. Trimble?

18 Mr. Trimble: I would have to -- to give you an
19 intelligent answer, I'd do it for the record. There's been
20 multiple -- as has been said, there have been multiple
21 estimates in recent years. And you have a challenge of
22 doing apples to apples in comparing those numbers, because
23 they're at different times, and sometimes they're addressing
24 different ranges.

25 [The information referred to follows:]

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1 Senator Donnelly: I understand that, and I understand
2 about inflation, and this and that. But, if we're 70
3 percent complete, how come we still have 75 percent of the
4 cost to go? And --

5 Mr. Trimble: Yeah. Well, I think there's disagreement
6 or difference of opinion whether it's 70 percent complete.

7 Senator Sessions: Well, this is a matter we're going
8 to need to wrestle with. But, what I was saying about the
9 77 billion in estimated increase in cleanup cost, does that
10 include, Dr. Regalbuto, the MOX facility cost?

11 Dr. Regalbuto: No, it does not include the cost of the
12 activity in that facility at the end of mission.

13 Senator Sessions: All right. Well --

14 Senator Graham: I share your --

15 Senator Sessions: We've got to get a grasp on this.
16 What I want you to know, Department of Energy, is that, for
17 \$1 billion, we can maintain 10,000 soldiers. We're giving
18 pink slips to people who want to stay in the military,
19 because we don't have a billion dollars to keep them on
20 duty. And we just waltz in and now we go \$77 billion more
21 than we estimated, 240 billion for cleanup by 2075, and
22 we've got this problem in South Carolina that I think we
23 need to find out how it happened.

24 Senator Graham: Yeah.

25 Senator Sessions: Who -- maybe they've got a perfectly

1 reasonable excuse, but I think we just can't blithely walk
2 on and waltz into this committee and say, "We've just
3 changed our mind." I mean, I just really feel like that.
4 And, General Klotz, I'll let you comment, and anyone else
5 that wants to, but --

6 General Klotz: Well --

7 Senator Sessions: -- we have to stop. But, Senator
8 Graham is correctly challenging and asking some legitimate
9 information. I know our committee will want to look at it.
10 And we may have to make a tough decision and say, Senator
11 Graham, sorry. But --

12 Senator Graham: And I get that, Mr. Chairman.

13 Senator Sessions: -- he's entitled to have a clear
14 answer.

15 Senator Graham: Yeah. And all I'm saying is, if
16 there's better way of doing it, I want to know, Will it
17 work? Stopping the program without an alternative is not
18 saving money, it's just putting in jeopardy all the things
19 we've accomplished. Nobody can tell you, or me, that there
20 is a viable alternative, because they haven't run the traps.
21 Nobody's talked to the people in New Mexico. Nobody knows
22 what the Russians are going to do. And, at the end of the
23 day, nobody knows what kind of legal changes you have to
24 make, and are they possible. Other than that, we're in a
25 good spot. We're stopping a program, whether it is -- go

1 look at it, I'll show you the facility -- and saying we're
2 going to start all over again. How can that happen, and
3 nobody get fired?

4 General Klotz: Well, we're concerned about the cost,
5 as well. And, as we look out for the longer term, the
6 reports we've done indicate that, you know, this whole thing
7 -- not just the construction of the facility, but to operate
8 the whole MOX chain -- could cost us anywhere from 800 to a
9 billion dollars a year for many, many years to come.

10 Senator Graham: Why didn't they know that in 2010?

11 General Klotz: Again, I wasn't here, Senator, in 2010.
12 And I share your frustration.

13 Senator Sessions: Ms. Harrington, you were here in
14 2010.

15 General Klotz: But, the --

16 [Laughter.]

17 General Klotz: But, it's a --

18 Senator Graham: I mean, who --

19 General Klotz: But, it's --

20 Senator Graham: -- signed this deal?

21 General Klotz: But, it's an opportunity cost. I mean,
22 this comes out of, as you know, an NNSA budget that's only
23 12 to 13 billion dollars. And there's a lot of other needs
24 in that, as well as in the larger defense 050 accounts.

25 Senator Graham: But, you agree with me, if you don't

1 have an alternative, it's not a good idea.

2 General Klotz: Well, we think we do have an
3 alternative. So, there we --

4 Senator Graham: I've written --

5 General Klotz: -- disagree.

6 Senator Graham: -- a letter about the three questions.
7 Will New Mexico take it? Do you need legal changes? And
8 are they -- can you accomplish it? And do the Russians
9 agree? And, if they don't agree -- if they do agree, what
10 price do we have to pay to get the Russians on board? We're
11 changing an agreement with the Russians. This is a
12 fundamental change in the agreement. I need the answer to
13 those three things before I can go back to South Carolina
14 and tell the people that I represent that we've been fairly
15 treated.

16 Senator Sessions: That it?

17 Well, thank you all.

18 Is there any other question the members of the
19 committee have on any other subject?

20 Senator King?

21 Senator King: And I'm -- I apologize for being late.

22 We had another Armed Services Subcommittee meeting at the
23 same time, on personnel. Easy problem: healthcare.

24 Nothing to that.

25 Is there a timeline and a price tag on the overall

1 nuclear modernization project? In other words, do we have
2 -- does there exist a, "Here's what we have to do. Here's
3 how long it's going to take. And here's how much it's going
4 to cost"?

5 General Klotz: Yes, sir, I believe it is. And I
6 assume you're including the whole -- the DOD part of that,
7 because that's the largest part of --

8 Senator King: Sure.

9 General Klotz: -- of this. I don't have it with me,
10 but I know, when we testified before this subcommittee last
11 year, the DOD came over with a chart that showed their
12 projections of the cost, and ours added into it. I will --
13 I hasten to add that the NNSA portion of that is a very
14 small percentage of the --

15 Senator King: But, I think it would be helpful --

16 General Klotz: Yeah.

17 Senator King: -- for us to see the --

18 General Klotz: Yeah.

19 Senator King: -- the big --

20 General Klotz: There is.

21 Senator King: -- the overall picture of what --

22 General Klotz: Yeah.

23 Senator King: -- what it is that we're biting off,
24 here.

25 General Klotz: Right.

1 [The information referred to follows:]

2 [SUBCOMMITTEE INSERT]

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1 Senator King: Thank you.

2 Thank you, Mr. Chairman.

3 Senator Sessions: Senator Donnelly.

4 Senator Donnelly: Admiral Caldwell, as you look at the
5 design of these reactors, the 40-year reactors, and they're
6 going to be coming out in the years ahead, they're still --
7 do you still have anybody working on looking at it as you go
8 as to potential improvements to make it even better? I
9 mean, you have a design, but -- you know, do you sit down
10 and go, "Okay, here's the design, but we've just discovered
11 this, or we've just discovered that"?

12 Admiral Caldwell: In answer to your question, sir,
13 there are different aspects of the propulsion plant and the
14 reactor plant, and there are different answers to --
15 depending on what section you're looking at. For a ship
16 like Ohio replacement, once we put the fuel in the core and
17 lock it in there, that's going to be in there for the
18 remainder of its life.

19 Senator Donnelly: Right.

20 Admiral Caldwell: So, we're not going to do anything
21 with that. Of course, along the way, like we have done with
22 the Trident-class submarines in the 688s, we have modernized
23 the reactor instrumentation and made improvements along.
24 And this is all founded on a lot of decades worth of
25 experience in the program, and looking at how we make

1 improvements, in terms of maintenance operability, the
2 ability to train folks. All of those things come together.
3 And the way that we do that, sir, is through what is -- what
4 I refer to as our technical base. This is the operations
5 and infrastructure part of our budget, the developmental
6 part of our budget, and the program direction. This
7 technical base is the flywheel or the engine room for
8 everything that we do. It allows us to do the design, the
9 analysis, the lifetime support, all the way through
10 disposal. And so, that's always part of -- that's a big
11 part of our budget submission for FY17, and it enables us to
12 continue to advance the technology to do the research and
13 development, and then to eventually apply this technology to
14 the --

15 Senator Donnelly: When you look at the 40-year life of
16 the submarine, obviously there'll be changes as we move
17 forward during that life, changes in knowledge, changes in
18 methods, changes in materials. And this is not a -- set in
19 stone. But, is that 40-year life something that, at the
20 end, you look and you go, "You know, this boat might well be
21 usable for X number of additional years"?

22 Admiral Caldwell: We could, and we have done that with
23 the Los Angeles class and the Trident class, where we got to
24 the end, and we looked and did the math and did the
25 calculations, looked at the usage on the whole, and looked

1 at the core expenditure, and decided that we could get more
2 out of it.

3 And the other part I would add is that we do ship
4 alterations throughout the life of a ship. We might find a
5 valve design that works better, or a component that needs to
6 be replaced and upgraded. This is the way we do business in
7 the Navy, and it's just part of our due process. As we find
8 a system that works better, that might have been a
9 maintenance challenge or maybe it didn't turn out to operate
10 the way we expected, we'll go back to the drawing board and
11 draw on all this experience, and we'll do a set of ship
12 alterations to modernize the force. And those are going on
13 every day throughout the Navy.

14 Senator Donnelly: Thank you.

15 Thank you, Mr. Chairman.

16 Senator Sessions: Thank you.

17 Well, weapon modernization is going on around the
18 world. Our potential adversaries, let us say, seem to be
19 fully convinced that modernizing and advancing their nuclear
20 weapon capacity is good for them, both in terms of
21 deterrence, both in terms of securing their national
22 identity, and for a whole lot of reasons. We just have to
23 understand that.

24 So, we've done -- we were -- have been the only nation
25 that hasn't been advancing our systems. And we're beginning

1 to. I just think we have to. We've gone this many years.
2 We have got to get this done.

3 We are facing a financial challenge in this country.
4 We don't have a dollar to waste. And if I were running the
5 world, I'd say, "I want to build bombs, and I don't want to
6 build buildings." But, maybe we have to build buildings.
7 So, we'll have to deal with that. But, we need to keep the
8 -- we need to be as limited as we can be on that.

9 And, General Klotz, a modernized weapon would be more
10 effective, more secure and safe, and be able to be protected
11 from terrorists or errors better, too, isn't that true?

12 General Klotz: That's right, Mr. Chairman. Every time
13 we consider how we're going to go about a life extension
14 program for one of our weapons, that's one of the first
15 things we look at. What can we take advantage of, in terms
16 of the latest developments in technology related to safety
17 and related to security that can be injected into the weapon
18 as we extend its life?

19 Senator Sessions: And you have no doubt we'll achieve
20 that as we go through this modernization process.

21 General Klotz: Yes, sir, that's one of our top
22 priorities.

23 Senator Sessions: General Davis, the -- former
24 Secretary of Defense Perry, who chaired the Nuclear Posture
25 Review Commission with Secretary Schlesinger in a very

1 important bipartisan commission on December 8th, said,
2 quote, "Russia is embarked on a major buildup of their
3 nuclear arsenal. It seems likely that they are developing
4 new bombs with new characteristics," close quote. I know
5 this is not a classified hearing. Can you -- what can you
6 tell us about that in an unclassified level?

7 General Davis: Thank you for the question, Senator.
8 So, I'm certainly not an expert, in my current capacity, on
9 -- and I'm not up to speed on the current intelligence, but
10 I can tell you that it's very clear that all of our
11 adversaries are updating their nuclear weapons, along with
12 our allies. So, I would put the Russians, the Chinese, the
13 French, and the U.K. all in the batch of folks that are
14 looking at how to update their nuclear weapons.

15 Senator Sessions: And, to some degree, we've been
16 behind their activities. Is that right? They've been doing
17 this for quite a number of years, most of them.

18 General Davis: Well, so certainly they've been
19 updating their weapons. We are certainly, at this point,
20 updating ours, as well, making them more safe, more secure,
21 and more reliable. The thing that I'd point out -- and you
22 mentioned that that's the focus -- we're in a very different
23 world than we were when we originally designed these
24 weapons. The security environment's completely different.
25 We certainly have better technology. And we need to take

1 the opportunity to incorporate those improvements into these
2 weapons.

3 Senator Sessions: Well, we wish it were different. We
4 absolutely do. We wish that things were continuing to go
5 down, like we hoped and saw for quite a number of years.
6 And the efforts on proliferation, Ms. Harrington, seemed to
7 be making a lot of progress. And now we've got more and
8 more nations expanding what they have, and other nations
9 moving forward to try to develop nuclear weapons. And,
10 unfortunately, it's just a fact of our life and necessary to
11 defend America.

12 Senator Donnelly, you have anything else?

13 Thank you all. It was a very valuable hearing. We'll
14 submit some written questions, I'm sure, and we would
15 appreciate your assistance for the record.

16 Thank you very much.

17 We are adjourned.

18 [Whereupon, at 4:01 p.m., the hearing was adjourned.]

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