

Stenographic Transcript
Before the

Subcommittee on Strategic Forces

COMMITTEE ON
ARMED SERVICES

UNITED STATES SENATE

HEARING TO RECEIVE TESTIMONY ON THE DEPARTMENT OF
ENERGY'S ATOMIC ENERGY DEFENSE ACTIVITIES AND
DEPARTMENT OF DEFENSE NUCLEAR WEAPONS PROGRAMS
IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST FOR
FISCAL YEAR 2024 AND THE FUTURE YEARS DEFENSE
PROGRAM

Tuesday, April 18, 2023

Washington, D.C.

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2 ATOMIC ENERGY DEFENSE ACTIVITIES AND DEPARTMENT OF DEFENSE
3 NUCLEAR WEAPONS PROGRAMS IN REVIEW OF THE DEFENSE
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7 Tuesday, April 18, 2023

8
9 U.S. Senate
10 Subcommittee on
11 Strategic Forces,
12 Committee on Armed Services,
13 Washington, D.C.

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15 The subcommittee met, pursuant to notice, at 4:49
16 p.m., in Room 222, Russell Senate Office Building, Hon.
17 Angus S. King, chairman of the subcommittee, presiding.

18 Subcommittee Members Present: Senators King
19 [presiding], Gillibrand, Warren, Rosen, Fischer, Rounds,
20 and Cramer.

1 OPENING STATEMENT OF HON. ANGUS S. KING, U.S. SENATOR
2 FROM MAINE

3 Senator King: We call today's hearing to order. And
4 I thank the witnesses for appearing, as well as their
5 services to our nation. Before we get going, I want to
6 thank Admiral Caldwell, the Director of Naval Reactors, who
7 will retire after 42 years of service.

8 You are only the 7th Director of Naval Reactors,
9 starting with Admiral Rickover in 1949. You stand in this
10 fearsome giant's shoes upholding his unparalleled tradition
11 of service and excellence that is second to none.

12 You are responsible for the force projection of our
13 aircraft carriers and our submarines, which are the envy of
14 every military in the world. In fact, under AUKUS, we know
15 that they are trying to duplicate that capability.

16 For any nuclear-powered vessel that is ready for sea
17 trials. You are the senior officer that goes to sea with
18 her. I want to thank you and your wife, Kim, for your
19 service. Our nation owes you a gratitude, a debt of
20 gratitude that only six other Navy officers and their
21 spouses can fully understand.

22 Today's hearing has two panels to review the budget
23 request for defense nuclear activities in the Department of
24 Energy and the Department of Defense. We are undertaking
25 our third nuclear modernization.

1 The first two in 1960 and 1980, notice they were 20
2 years apart. The third this time some 43 years apart.
3 Unlike the other two, we now have not one but two nuclear
4 armed near-peer competitors.

5 This is an entirely new paradigm in the defense of our
6 nation. Now more than ever, we are relying on modernizing
7 our triad to perform the essential deterrence mission under
8 this new two near-peer paradigm.

9 I expect not only to hear what is going right now in
10 this modernization cycle -- what is going right, now in
11 this modernization cycle. Admiral Rickover would expect no
12 less. But importantly, I also expect to hear what is not
13 going right and how Congress can help.

14 Mr. White, you perhaps have the toughest of all jobs
15 with the largest backlog of clean up in the Federal
16 Government from Cold War defense activities, which in 2020
17 was estimated at a cost of \$512 billion.

18 I will want to know what you are doing to work your
19 way through this backlog of clean-up, which is a commitment
20 to the communities nearby these sites. After our opening
21 statements from each of our witnesses, we will have five-
22 minute rounds of questions. Senator Fischer.

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1 STATEMENT OF HON. DEBRA FISCHER, U.S. SENATOR FROM
2 NEBRASKA

3 Senator Fischer: Thank you, Mr. Chairman. And thank
4 you to our witnesses for being here today. Admiral, I,
5 too, want to thank you for your many, many years of service
6 and commitment and dedication to this country. You are an
7 example of a true, true patriot and public servant.

8 All of you have a solemn responsibility of ensuring
9 that our nuclear deterrent remains safe, reliable, and
10 effective. Our nuclear deterrent, the weapons themselves,
11 and the delivery systems remains the indispensable backbone
12 of United States National Security.

13 The geopolitical threat environment has significantly
14 degraded since 2010, when our current nuclear force and
15 modernization plan was determined. We need to consider
16 whether the plan remains sufficient to address future
17 threats, and we have to rebuild the capability across the
18 nuclear enterprise to deliver faster.

19 The status quo is not tenable, and I look forward to
20 working with you all in the coming months to find creative
21 solutions to the significant challenges that we face.

22 Thank you, Mr. Chairman.

23 Senator King: Ms. Hruby.

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1 STATEMENT OF HON. JILL M. HRUBY, ADMINISTRATOR,
2 NATIONAL NUCLEAR SECURITY ADMINISTRATION

3 Ms. Hruby: Thank you, Chairman King, Ranking Member
4 Fischer, members of the subcommittee for the opportunity to
5 present the President's Fiscal Year 2024 budget request for
6 the Department of Energy's National Nuclear Security
7 Administration.

8 Chairman King, a written statement has been provided
9 and I respectfully request that it be submitted for the
10 record. NNSA's Fiscal Year 2024 budget request is \$23.8
11 billion, an increase of \$1.7 billion over the Fiscal Year
12 2023 enacted level. This budget request responds to
13 today's challenging global security environment.

14 The Weapons Activities budget request of \$18.8 billion
15 supports the five ongoing weapon modernization programs and
16 continues significant investment in our infrastructure.
17 Infrastructure needs are acute at our production plants as
18 we continue to refurbish and reestablish capabilities.

19 In addition, the request supports two Phase 1
20 exploratory efforts, enhance physical and cyber security,
21 and digital assurance of our weapons and enterprise. It
22 also continues investment in our stockpile research and
23 advances stockpile stewardship. We are actively addressing
24 our biggest challenge in weapon activities, the cost and
25 schedule delays, and large construction projects.

1 Supply chain delays, labor shortages, labor
2 productivity, combined with inflationary pressures, have
3 plagued the uranium processing facility and the plutonium
4 pit production efforts, both at Los Alamos and Savannah
5 River.

6 As a result, we are implementing nationwide trade
7 union recruiting, incentives for labor, housing, and
8 transportation, early starts on long lead procurements, and
9 introduction of new project management models.

10 The Defense Nuclear Nonproliferation budget request is
11 \$2.5 billion, and invest in our nonproliferation, emergency
12 response, and counterterrorism programs. We continue
13 important work to reduce global nuclear risk, progress
14 international partnerships, and advance associated
15 research.

16 To be prepared for the future, programs responsive to
17 nuclear energy expansion and future arms control
18 verification technologies are requested. We remain
19 committed to the Ukraine incident response training and
20 information sharing to detect and respond to a nuclear or
21 radiological emergency.

22 Work to assure allies who might be thinking about the
23 need for nuclear weapons -- we work to assure them that we
24 will be with them and we keep our eye on threats from other
25 weapons of mass destruction with our bio-assurance program.

1 The challenges for NNSA are real but not
2 insurmountable. With your continued support, I am
3 confident we will succeed. Thank you. I look forward to
4 your questions.

5 [The prepared statement of Ms. Hruby follows:]

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Senator King: Admiral.

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1 STATEMENT OF ADMIRAL JAMES F. CALDWELL JR., USN,
2 DEPUTY ADMINISTRATOR FOR NAVAL REACTORS, NATIONAL NUCLEAR
3 SECURITY ADMINISTRATION

4 Admiral Caldwell: Chairman King, Ranking Member
5 Fischer, first off, thank you for your nice remarks. It is
6 an honor to serve. Distinguished members of the
7 subcommittee, thank you for the opportunity to testify
8 today.

9 Your consistent support of naval reactors allows my
10 team to provide the Navy with unmatched power and
11 capability of nuclear propulsion, which provides all of our
12 submarines and all of our aircraft carriers the
13 reliability, mobility, and endurance to carry out National
14 Security missions around the world.

15 Today, nuclear powered warships are operating
16 alongside allies and partners on a global scale, providing
17 forward presence in a world that is increasingly polarized.
18 We recently completed the AUKUS consultation period and
19 have set out on a generational change in sharing critical
20 technologies directly supporting U.S., UK, and Australia
21 trilateral commitment to a free and open Indo-Pacific
22 region.

23 Naval Reactors' investment in research and development
24 over decades has enabled the advanced technology that gives
25 our fleet a competitive advantage in the maritime

1 environment. Now we must step up our research and
2 development to sustain and exploit that advantage.

3 Our future will be built on a solid foundation of our
4 people, our technology, and our facilities. My budget
5 request for Fiscal Year 2024 is for \$1.96 billion and
6 invests in each of these three key areas and two national
7 priority projects. First, my request supports our most
8 important resource, our people.

9 The talented and dedicated people at our headquarters
10 and our field offices are absolutely essential to the
11 strong centralized management and oversight of the
12 important work we do for the nation.

13 Second, the budget request reflects continued
14 investment in research and development to achieve our goals
15 of substantially lowering costs, reducing construction
16 timelines, and adding fleet capability.

17 My request also focuses on investments to modernize
18 our critical infrastructure at my Department of Energy
19 laboratories where this important work is executed and to
20 reduce our legacy environmental liabilities.

21 I am also seeking your support for two national
22 priority projects. The first is the continued development
23 of the reactor plant for the Columbia class ballistic
24 missile submarine, directly supporting the Navy's number
25 one acquisition priority.

1 The second project is the continued construction of
2 the naval spent fuel handling facility in Idaho, which
3 enables long term, reliable processing and packaging of
4 spent fuel from the Navy's nuclear fleet.

5 In closing, your strong and enduring support allows me
6 to carry out Naval Reactor's mission of delivering a
7 nuclear-powered fleet that is unrivaled around the world.
8 I respectfully urge your endorsement of our Fiscal Year
9 2024 budget request, and I thank you for your support.

10 [The prepared statement of Admiral Caldwell follows:]

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Senator King: Mr. White.

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1 STATEMENT OF WILLIAM WHITE, SENIOR ADVISOR FOR
2 ENVIRONMENTAL MANAGEMENT, DEPARTMENT OF ENERGY

3 Mr. White: Chairman King, Ranking Member Fischer, and
4 members of the subcommittee, it is an honor to appear
5 before you today. The Environmental Management Mission
6 reflects the commitment to cleaning up the environmental
7 legacy of national defense programs that helped end World
8 War II and the Cold War.

9 While our mission is tied to the environmental legacy
10 of the past, we are also focused on the future. The
11 cleanup program of today is empowered to support ongoing
12 National Security and science missions, as well as
13 strengthen local communities.

14 Cleanup accomplishments are boosting the clean energy
15 economy in Tennessee and helping the Oak Ridge National
16 Laboratory and the Y-12 National Security Complex prepare
17 for expanding National Security and research missions. Our
18 Idaho team just marked a historic achievement with the
19 startup of a new tank waste treatment capability that has
20 been decades in the making.

21 With support from Congress, the Integrated Waste
22 Treatment Unit is now operational in Idaho. EM has treated
23 over 400,000 gallons of tank waste at the Hanford site, and
24 at Savannah River in South Carolina we are processing
25 record amounts of tank waste.

1 More than 200 transgenic waste shipments from five
2 generator sites were received last year at the waste
3 isolation pilot plant. The budget request for this year
4 positions us for success as we drive risk reduction,
5 progress, skyline changes, and ramp up efforts to tackle
6 tank waste.

7 EM will operate tank waste treatment systems in South
8 Carolina, Idaho, and Washington State. Hanford's 56
9 million gallons of tank waste represent our greatest
10 environmental risk and financial viability.

11 Treatment and disposal are the only way to permanently
12 address the risks posed by this waste. Recognizing that
13 additional delays bring greater risk, exacerbate the
14 impacts of already aging infrastructure, and increase cost,
15 we are focused on moving the entire Hanford tank waste
16 mission forward.

17 We are advancing the system that will stabilize
18 Hanford's low activity waste in glass. The request also
19 ramps up work on the high-level waste facility so that we
20 will be able to address that portion of the Hanford tank
21 waste as well.

22 The waste isolation pilot plant will be modernized to
23 meet the needs of legacy clean up and ongoing National
24 Security programs. Waste shipments will continue and we
25 will ensure there is no backlog of shipments from Los

1 Alamos National Laboratory.

2 We will address excess contaminated facilities and
3 contaminated groundwater across the enterprise. This
4 includes work in Nevada, where we will demolish four
5 buildings this year and further reduce the clean-up
6 footprint for Fiscal Year 2024.

7 As we deliver on these priorities, we are committed to
8 continuous improvement, whether it is investing in R&D,
9 analyzing options to save time and money, achieving
10 regulatory alignment, upgrading infrastructure, or building
11 a pipeline of talent for the future, we are preparing for
12 the future.

13 The budget request for this year supports these
14 efforts. It also supports communities and tribal nations
15 impacted by the environmental legacy of the past. I
16 appreciate the subcommittee's support for the EM mission.
17 I thank you for your time, and I look forward to your
18 questions.

19 [The prepared statement of Mr. White follows:]

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1 Senator King: Thank you. Did you say you processed
2 400,000 gallons last year?

3 Mr. White: At Hanford through our tank side cesium
4 removal system, which is the system we have in place to
5 pre-treat the tank waste that is going into the direct feed
6 low activity waste vitrification plant.

7 Senator King: But there is something on the order of
8 150 million gallons, isn't there -- in various tanks?

9 Mr. White: There are currently -- there are 56
10 million gallons of tank waste. But when you think about
11 the processes required to treat the tank waste, it ends up
12 resulting in about 150 million gallons of liquid needing to
13 be treated over the course of the program.

14 Senator King: I will follow up on that for -- in a
15 couple of minutes. Admiral Caldwell, a couple of
16 questions. Back when the Navy stopped, or when we stop
17 producing additional uranium for fuel back in the 90s, it
18 was assumed that we had enough stockpiled until the 2060.
19 Is that assumption still true in light of Columbia and
20 other programs that are now underway?

21 Admiral Caldwell: Sir, the -- we have looked at this
22 over many years and even recently as we have embarked on
23 this AUKUS consultation period, and currently we have
24 enough fuel stock to support the program out through the
25 2050s, mid to late 2050s.

1 That will depend, of course, on the Navy shipbuilding
2 plan and we will continue to evaluate that going forward.
3 And Ms. Hruby and I have frequent dialogs on this. It is
4 going to be a topic we continue to talk about.

5 Senator King: But the projection hasn't changed
6 radically?

7 Admiral Caldwell: Not radically, no, sir.

8 Senator King: A different question. Did I hear in
9 your testimony you are developing a new reactor for the
10 Columbia? Is this a brand-new reactor or is it a
11 modification of existing?

12 Admiral Caldwell: Sir, to clarify, we have been
13 working on the reactor for Columbia for many years now, and
14 it is a reactor that has been funded by the support of this
15 subcommittee. And it will have a -- the result is a 42-
16 year reactor core to power Columbia through life. That --

17 Senator King: No refueling?

18 Admiral Caldwell: No refueling. And that is
19 important. That allows us to do the mission with 12 versus
20 14 SPNs, and that fact alone saves refueling costs and
21 saves the nation about \$40 billion.

22 So, it is a remarkable achievement. We are building
23 that core right now, and we are on track to deliver that
24 core on schedule.

25 Senator King: But this is a developed technology.

1 You are not inventing something.

2 Admiral Caldwell: We are taking technology that has
3 been built on decades worth of research and work. And in
4 fact, we took the step to design the core for the S8G
5 prototype, a training and research reactor up in
6 Kesselring.

7 We took the step to develop some Columbia components
8 for that core. This was a decision made over 10 years ago.
9 That proved to be a very important decision because it
10 allowed us to de-risk the manufacturing techniques and make
11 sure we had that down before we actually started the
12 Columbia core.

13 So those two projects are actually integrated and both
14 supported by this subcommittee.

15 Senator King: I am sure there is an answer to this
16 question. I also serve on Energy and Natural Resources,
17 where all the talk is about small modular reactors. Why
18 aren't the naval reactors models for that? Is there an
19 utterly different technology or is it cost? What -- why
20 couldn't you park a submarine in the bay and power the
21 city?

22 Admiral Caldwell: Well, first off, the requirements
23 for a warship are significantly different from the
24 requirements for a commercial reactor. We have to be able
25 to withstand shock. We have to be ready to operate in

1 battle damage conditions. We have to be responsive in
2 speed.

3 A lot of the time the submarine or the carrier might
4 be going relatively slow and we have to accelerate rapidly.
5 For power generating reactors, the technology and the
6 requirements for that are very different.

7 So, I don't think that the submarine core would be the
8 right path for some of these small modular reactor
9 concepts.

10 Senator King: Thank you. Mr. White, as I mentioned,
11 there is plenty of work left to do. I understand in
12 Savannah River there are going with a concrete solution as
13 opposed to a glass solution. Is that proving to be
14 feasible, a, and b, is it a more cost-effective solution
15 that could be used at the Hanford site?

16 Mr. White: So, at Savannah River, the capability we
17 have there can ultimately treat about 6 million gallons of
18 the 9 million gallons of tank waste a year. So, I think it
19 is something we should definitely be looking at, at
20 Hanford.

21 And in fact, we are doing that. One of the things
22 that we just did was move forward with the test bed
23 initiative, something that Congress funded over the last
24 couple of years. So as part of that effort, we made a
25 waste determination of about 2,000 gallons of tank waste at

1 Hanford that we are planning to treat commercially offsite
2 with grouting technology and then dispose of it at a
3 commercial facility.

4 Right now, we are working on putting a permit together
5 to submit that to the State of Washington, and then once
6 they have approved that, about a year after that, we should
7 be able to move forward with this pilot effort.

8 If you think about the cumulative amount of waste we
9 have at Hanford, the vitrification capabilities we are
10 putting in place with the low activity waste vitrification
11 plant and the high-level waste plant, would treat about 40
12 percent of the tank waste that we have at Hanford to treat.

13 That leaves about 60 percent of the supplemental waste
14 that we don't have a clear path forward on. In large part
15 at the urging of this subcommittee, we have had the
16 national laboratories studying the best alternative for
17 treating that supplemental waste, that 60 percent of the
18 waste that isn't covered by those vitrification plants.

19 The National Academies recommended that we consider
20 grouting, that the technology is effective at treating the
21 waste, and it is by far the most cost effective and timely
22 way to deal with the waste, the bulk of the waste at
23 Hanford.

24 So, as we move forward on the vitrification
25 capabilities that we need for the parts of the waste

1 streams that have to be vitrified, while simultaneously
2 working on options to expand our grouting capabilities as
3 well to deal with the bulk of the waste.

4 Senator King: Thank you. Senator Fischer.

5 Senator Fischer: Thank you, Mr. Chairman. Welcome,
6 Administrator. While the NNSA has many competing missions,
7 delivering nuclear weapons to the Department of Defense
8 remains the top priority. With narrowing window time for
9 our current wave of modernization, can you identify your
10 largest source of concern? How are you going to meet those
11 milestones?

12 Ms. Hruby: Yes, thanks for the question. They are --
13 undoubtedly our most challenging programs are our large
14 nuclear construction projects. So, and I say that because
15 our weapons programs are certainly challenging, but we are
16 on track.

17 We understand the long lead, the places where we
18 really need to increase, you know, our regular timelines,
19 start timelines to meet those. But the construction
20 activities have been more fluid in terms of what the issues
21 are, and in part because we started them, you know, pre-
22 COVID and have needed to come out of that, and it is the
23 first time in many generations that we -- this is really
24 the first rebuild of our enterprise since the Manhattan
25 Project.

1 And so that -- to answer your question, we are pulling
2 out all the stops. We are having external reviews. We are
3 implementing recommendations from those reviews. We are
4 changing our approach to procurements to make -- to not
5 only start them earlier, but to have them move along
6 faster.

7 We are breaking projects into chunks. We are pausing
8 some projects in order to focus on others. We have a long
9 list of things that we are doing to try to bring those as
10 far to the left, if you will, as we can.

11 Senator Fischer: If you have any suggestions on how
12 Congress can help you do that to meet those requirements,
13 please let us know.

14 Ms. Hruby: Thank you. I would just, I know this is a
15 big ask, but the most important thing on some of these
16 projects is going to be timely budget appropriations.

17 Senator King: Yes. It shouldn't be a big ask. It
18 will be routine.

19 Senator Fischer: It should be what we do, yes.
20 Meeting the requirement of 80 plutonium pits per year
21 remains a challenge. And can you provide us with an update
22 on NNSA's efforts to achieve that full production is as
23 close to 2030 as possible?

24 Ms. Hruby: Absolutely, thanks. We, as you know, we
25 are proceeding with our two-site solution at Los Alamos and

1 Savannah River. Los Alamos is the first up, if you will.
2 We started it earlier, but also is an existing plutonium
3 facility that we are modifying for the pit production
4 activity that we have.

5 And that, we have completed a lot of equipment
6 installation. We are aiming to get to -- the first project
7 we are calling 30 base, making 30 pits per year. We have
8 done about 40 developmental pits over the time we have been
9 doing this project.

10 We are getting closer to WR certification, to weapon
11 certification --

12 Senator Fischer: You say, developmental pits. So
13 those aren't certified?

14 Ms. Hruby: Those are not yet certified and they are
15 not going to get certified for --

16 Senator Fischer: How long a process to get them
17 certified? What do you have to do --?

18 Ms. Hruby: We are expecting that we will have our
19 first certified pit at the end of 2024. And so then let me
20 also cover Savannah River. So, we are about 50 percent way
21 through the design of the Savannah River pit production
22 facility.

23 We are also doing parallel activities to modify the
24 MOX facility and take out equipment that we don't need. We
25 are doing site preparation work. We are preparing to build

1 a high-fidelity training center there.

2 The point of the training center is to make sure that
3 as soon as we have the construction complete, we can go as
4 fast as possible to get to making certified pits. That
5 will be a few years, even if we are really fast.

6 And so, and we are doing a lot of pre-buys of
7 equipment. So, we are staging our design so that the
8 equipment is designed first so we can get those out for
9 procurement while the rest of the facility design is being
10 done.

11 Senator Fischer: Has the -- the pre-buying equipment,
12 has that been an effective tool for you to be able to have
13 that capability and to continue to move along so you don't
14 have to wait months or a year or two and a half years for
15 --?

16 Ms. Hruby: Yes, absolutely. It is particularly
17 important for gloveboxes, which is, there is a limited
18 capability in the United States and all of our facilities
19 need them.

20 Senator Fischer: Thank you. Thank you, Mr. Chairman.

21 Senator King: Senator Cramer.

22 Senator Cramer: Thank you, Mr. Chairman. Thank you
23 to the witnesses. Administrator, first of all, thank you
24 for this morning's briefing as well. Very, very
25 informative. Appreciate the detail of it all.

1 But when we talk about modernization, we always talk
2 about, of course, our own, and then we talk about our
3 biggest adversaries, but we rarely talk about allies or
4 other places other than Russia and China and the United
5 States.

6 Can you enlighten us a little bit with what might be
7 going on in other places, if anything, that, you know,
8 might be instructive to how we view the future with regard
9 to us, plus, if that makes sense?

10 Ms. Hruby: Well, I will say that by far our closest
11 ally on things nuclear is the UK. And not only are we
12 doing what Admiral Caldwell talked about in terms of the
13 AUKUS program with them, we are also working on the W93
14 program with them, and we are working on materials
15 availability with them.

16 And so that -- by far our strongest ally. We do work
17 nonproliferation programs with all of our other allies,
18 both NATO allies and Pacific allies. And that is useful
19 not only for the purpose of the nonproliferation program,
20 but it keeps us in close coordination and communication
21 with those allies in terms of their nuclear capabilities,
22 so I consider those very important programs.

23 Senator Cramer: You know, along those lines, and
24 maybe you could comment or you, Admiral, for that matter
25 too, on how, with regard to that relationship that you just

1 outlined -- I guess I can say I worry a little bit about
2 the reputational risk that has been associated with the
3 events of the last, you know, some say a couple of years,
4 us being seen as once the reliable umbrella ally that we
5 are -- am I wrong to be concerned about that or -- and
6 again Admiral, maybe you want to speak to that a little bit
7 as well.

8 Ms. Hruby: I will start and then let Admiral Caldwell
9 talk about the naval part. I am fond of saying if
10 everybody -- if anybody ever asked you if you want a
11 Russian, a Chinese weapon, or a U.S. weapon, say U.S.

12 We still have, despite -- we are very transparent
13 about our issues, but we still have an incredible
14 capability in this country. And our, you know, our weapons
15 are second to none and we are making sure that they stay
16 that way. So, I would say, you know, the NATO allies are
17 actually here this week.

18 They will be at Lawrence Livermore on Friday. I will
19 be with them for that meeting. So, we are doing a lot of
20 assurance meetings and they are always very impressed to
21 see what capabilities we have and to see the commitment to
22 the enterprise that we have.

23 Senator Cramer: Admiral, anything you would add to
24 that?

25 Admiral Caldwell: Sir, I want to make sure I

1 understand your question. Is your question about our
2 sharing and relationship with the UK in particular, or how
3 our allies and partners view the viability of our nuclear -
4 ?

5 Senator Cramer: Yes, so I think it is -- I would add
6 a third category and that is that their trust that we have
7 the political will as well as the capabilities to continue
8 to be -- to provide that umbrella that helps you control
9 some of the issues you have talked about, Administrator.

10 Admiral Caldwell: I don't have as many interactions
11 maybe as some of the other Navy leaders with those key
12 allies. I can tell you we have a strong interaction with
13 the UK. I think there is absolutely trust there.

14 I just returned from a trip to Japan where I spoke
15 with Japanese leaders. And clearly, if you look at their
16 National Defense Strategy and National Security strategy,
17 the U.S. plays a huge role in their future as they have
18 laid it out in clear language.

19 And so, I think there is a lot of faith and confidence
20 in the U.S. war plan, and our ability and commitment to
21 follow through on that.

22 Senator Cramer: Maybe, Mr. Chairman, I am more
23 concerned about our ability to persuade our own
24 constituents sometimes of this. But thank you, both of
25 you, for your answers. Thank you, Mr. Chairman.

1 Senator King: Senator Gillibrand.

2 Senator Gillibrand: Thank you. Admiral Hruby --

3 Administrator Hruby -- yes, just, sorry. It would be nice

4 to be an Admiral. Administrator Hruby, inertial

5 confinement fusion facilities, including the Omega Laser

6 facility at the University of Rochester's Laboratory for

7 Laser Energetics have not had major infrastructure

8 investment since the 2000s.

9 The demand on these world's leading high energy

10 density science facilities continues to grow. Is the

11 Fiscal Year 2024 budget request sufficient to cover

12 critical sustainment activities while meeting increased

13 operational demand on the facilities? And are you

14 including sustainment costs in your five-year future budget

15 plan?

16 Ms. Hruby: Well, thank you for that question. The

17 Omega facility, the Laser Energetics lab, is a very

18 impressive facility and frankly, has made just very

19 important contributions to our programs, including ignition

20 at NIF, because we are able to do many experiments faster

21 there and try things out.

22 We have produced a report which we have submitted that

23 talks about all the investments we need to make at all of

24 our fusion sites in the U.S., and it is a significant

25 amount of money.

1 We are trying to execute that plan in this budget and
2 our five-year budget, our request for Rochester is higher
3 this year than it was last year. But we will -- it will be
4 a journey, a long-term journey to make the investments in
5 science and technology that we need, including at this
6 facility.

7 Senator Gillibrand: Thank you. Admiral Caldwell, the
8 breakthroughs in December at the National Ignition Facility
9 have significant implications for nuclear energy
10 production. What are the implications of inertial
11 confinement fusion on the future of the U.S. nuclear fleet?

12 Admiral Caldwell: My team pays close attention to
13 development in the nuclear field, but as we see it, the
14 viability of nuclear fusion is still many decades away.

15 And as we think about putting ships to sea, I need to
16 make sure that the reactors and the components and things
17 we build into the submarine are absolutely reliable. We
18 are a proven technology.

19 And that, when you when you build a ship and you put
20 the reactor in and it is going to stay there for 30 plus or
21 40 years for Columbia, it has got to work correctly first
22 time and every time. We are just not there with fusion.
23 But we keep close tabs on what is going on in science and
24 technology throughout the United States.

25 Senator Gillibrand: Thank you. Mr. White, we are

1 increasingly looking towards expanded nuclear capacity and
2 small modular reactors for energy production as we try to
3 meet our net-zero goals.

4 At the same time, we are still struggling to figure
5 out how to manage existing radiological waste. As we
6 balance our energy needs and our defense needs, what
7 policies or mechanisms do we need to adopt to ensure that
8 we are properly disposing of nuclear waste products?

9 Mr. White: Certainly, when I think about the
10 importance of the clean-up program -- and I mentioned
11 earlier that, you know, I think it is extraordinarily
12 important for our National Security and scientific research
13 missions.

14 And part of the reason for that is, I think our
15 ability to safely and effectively dispose of nuclear waste
16 and treat that waste underlies our ability to also move
17 forward in the nuclear security and nuclear energy realms.

18 From a policy perspective, certainly for the clean-up
19 program, the biggest thing outstanding is our ability to
20 dispose of high-level waste. We have an inventory of high-
21 level waste in the cleanup program that we manage for the
22 Energy Department, and the absence of a capability for
23 disposal of that waste certainly impacts our cleanup
24 program.

25 Senator Gillibrand: Thank you. And, Administrator

1 Hruby, your agency is tasked with the managing
2 nonproliferation efforts. Where do you foresee
3 nonproliferation efforts trending in the next decade now
4 that Russia has withdrawn from the New Start? What effect
5 will China's expansion of nuclear capabilities have on our
6 current nonproliferation regime and the Nonproliferation
7 Treaty?

8 Ms. Hruby: Yes, well, the nonproliferation efforts,
9 and this is a little bit to the question addressed earlier,
10 we are doubling down with our allies on nonproliferation
11 activities to make sure that we are collectively supportive
12 of nonproliferation programs, including the programs around
13 the hot zones right now.

14 Obviously, Ukraine, but there are other regions that
15 we want to make sure that we still have detection of
16 materials that could be lost or stolen from countries that
17 have nuclear materials. With Russia and China, you know,
18 we would really like to be in strategic stability dialogs,
19 but we aren't.

20 So, what we are doing in the Department, in NNSA is
21 working on verification technologies so that when we -- for
22 these new weapons, many new weapon systems, so that when
23 there is a window open again for discussion, which
24 hopefully someday there will be, there won't be a barrier
25 associated with not having proper verification technologies

1 developed.

2 Senator Gillibrand: Thank you. Thank you, Mr.
3 Chairman.

4 Senator King: Senator Rounds.

5 Senator Rounds: Thank you, Mr. Chairman. And thanks
6 to all of you for your service to our country. This is an
7 unclassified discussion and I appreciated the opportunity
8 that we have had to have classified discussions on this.

9 I kind of got to thinking, you know, the vast majority
10 of folks that are probably watching or listening to this
11 discussion, they are wondering kind of maybe some of the
12 basics. And I would like to take a few minutes, just kind
13 of work our way through the basics of why this is so
14 important to our country.

15 And I must start with Administrator Hruby. Let's talk
16 about, you know, we are talking our national defense is
17 really based upon a nuclear deterrence. But the nuclear
18 deterrence means not just land based. It means submarine
19 based, and it means air carried weapons that have a nuclear
20 weapon on them, whether it be a bomb or a missile tip.

21 Can you talk a little bit about what it means when we
22 -- we are talking here about plutonium pits and so forth.
23 Can we just take a minute here and perhaps explain a little
24 bit about the concern that we have got about the number of
25 plutonium pits that we actually do per year and so forth?

1 Talk to us a little bit and maybe explain that in a
2 level that I could understand, about third grade level or
3 so, here.

4 Ms. Hruby: Well, I know you understand more than
5 that, because I know you -- I have been in our model room
6 with you and you asked great questions. So, but let me try
7 to address your question.

8 To make a nuclear weapon, which is the core of our
9 deterrence in the United States, we have to be able to work
10 with nuclear materials, both plutonium and enriched
11 uranium, and many other materials that are difficult to
12 work with.

13 And we have to be able to have physics packages that
14 we are absolutely confident will work when we want them to
15 and not work at any other time. And that requires a lot of
16 engineering of non-nuclear components.

17 And these -- we use in the United States a captive
18 production complex where we do buy parts from commercial
19 supplies, but mostly these materials -- this is something
20 we have to do ourselves. And it is perhaps the only
21 captive production complex in the United States, make
22 sense, the way you make nuclear weapons.

23 And so, we have to have a very strong understanding of
24 the science. We have to turn that into manufacturing
25 capabilities and we have to deliver weapons on time to the

1 Department of Defense.

2 Senator Rounds: So, but the different weapons that we
3 have, they basically have a system inside of them that,
4 when triggered, create a nuclear reaction that is the bomb
5 or the missile tip.

6 What sizes -- can you talk a little bit about what
7 that means to somebody in the American public about the
8 size? How huge these weapon systems are?

9 Ms. Hruby: The physical size of the weapon system --?

10 Senator Rounds: Not so much the physical size, but
11 the impact -- the size of the blast, sort to speak.

12 Ms. Hruby: Yes. Well, we have weapon systems that
13 have yields from tens of kilotons --

14 Senator Rounds: Tens of kilotons, meaning in high
15 explosive, like a big bomb that you would -- a conventional
16 bomb --

17 Ms. Hruby: Right, right --

18 Senator Rounds: That would be the size of how big of
19 a bomb? Ten kiloton?

20 Ms. Hruby: Let's -- maybe the easiest way to say this
21 is our lowest yield weapons today are about the size of the
22 weapon at Hiroshima.

23 Senator Rounds: Our smallest. And they move up from
24 there.

25 Ms. Hruby: And they move up from there.

1 Senator Rounds: And these are both fission and
2 fusion.

3 Ms. Hruby: They are thermonuclear weapons, right.

4 Senator Rounds: And now, I think there is a question
5 out there about what that means. Let's just -- I have got
6 a minute left, but let's walk our way through that a little
7 bit.

8 Ms. Hruby: The physics.

9 Senator Rounds: Yes, let's talk about that.

10 Ms. Hruby: Yes, the plutonium pit and the weapons is
11 imploded by high explosives. It produces a blast that is
12 captive inside the weapon that goes to the secondary, and
13 implodes the secondary, and the secondary makes the large
14 yield from the weapon.

15 Senator Rounds: And when you just say the secondary,
16 you mean the actual material that surrounds a -- or that is
17 next to a plutonium pit. The plutonium pit is really the
18 trigger mechanism.

19 Ms. Hruby: The plutonium is a trigger mechanism. The
20 secondary is a uranium base.

21 Senator Rounds: And when we do that, we are concerned
22 about plutonium pits because we have to have those in order
23 to make every one of these new weapons systems, these
24 modern weapons systems that we want to deploy.

25 Ms. Hruby: Right.

1 Senator Rounds: And we can't make a lot of those per
2 year, can we?

3 Ms. Hruby: No, but we do have pits that are -- can be
4 reused. Not all of them, but some of the pits that we
5 already have can be reused.

6 Senator Rounds: But it is still -- that is a critical
7 component --

8 Ms. Hruby: Absolutely.

9 Senator Rounds: In terms of our national defense,
10 when we are talking about new facilities to modernize or to
11 be able to do those, it is a critical part of our national
12 defense in terms of deterrence.

13 Ms. Hruby: Yes.

14 Senator Rounds: Thank you. My time has expired.
15 Thank you, Mr. Chairman.

16 Senator King: Senator Warren.

17 Senator Warren: Thank you, Mr. Chairman. And thank
18 you to our witnesses for being here today. Thank you for
19 the work you do. So, a key component of modernizing our
20 nuclear weapons involves the construction of new plutonium
21 pits. And these pits are the central cores of nuclear
22 weapons that are used to trigger the nuclear explosion.

23 Congress mandated that NNSA produce at least 80 of
24 these pits by 2030. However, it is clear, perfectly clear
25 that NNSA will not be able to meet this requirement. NNSA

1 has a terrible track record of waste and mismanagement over
2 the years and failing to come even close to budget
3 estimates.

4 So, it is important to me that we not see taxpayer
5 dollars wasted again. Now, the Government Accountability
6 Office, GAO, recently released a report in January. They
7 found that NNSA has still failed to establish even a cost
8 estimate for the production of these pits.

9 Administrator Hruby, last year, when you came before
10 the subcommittee, you may remember you and I had this
11 conversation. We talked about how there were no clear cost
12 estimates for this program.

13 The GAO is now estimating that at least part of the
14 program will cost \$18 to \$24 billion, and that the total
15 program will be much higher if, and I want to underline the
16 word if, it ever even ends up being completed.

17 So, I am glad that GAO is working hard to try to keep
18 you honest on this, but it is NNSA's job to estimate these
19 costs. So why have you not established a lifecycle cost
20 estimate for this program?

21 Ms. Hruby: Well, thanks for your question. The -- we
22 agree with the GAO report, and we also have agreed in our
23 response to the GAO report that by April of this year we
24 will have our initial lifecycle cost estimate. This is the
25 cost for everything. That is the whole point of --

1 Senator Warren: Wait, April of this year? That is
2 like two more weeks?

3 Ms. Hruby: Oh, April -- I am sorry, April of '24. I
4 am sorry, April of '24 -- April of '24, we will have -- we
5 are in '24 budget request. So, it is April of '24, we will
6 have the initial cost estimate. And then in '25, we will
7 have an improved cost estimate.

8 Senator Warren: Okay. So let me just say, you didn't
9 have the numbers last year. You don't have the numbers
10 this year.

11 And the best answer I can get is we are going to have
12 them a year from now, which means that Congress and the
13 public has to wait just for another year before we even get
14 a basic cost estimate on what this program is going to
15 cost?

16 Ms. Hruby: There are many elements of the overall
17 plan. Most of those elements have had cost estimates
18 released. The life cycle cost estimate referred to in the
19 GAO report is the total cost for everything involved with
20 making pits. Some of those are still pretty immature
21 designs and therefore it is very difficult to do the entire
22 cost estimates --

23 Senator Warren: Okay, so I get it. This is hard. I
24 understand that it is hard, but this is a long time and we
25 keep allocating money into this program.

1 So, it looks like we are not going to know how much
2 this staggeringly expensive program is going to cost us for
3 a while, so let me ask you a different question. Let's
4 look at whether NNSA has a good plan to control costs in
5 the meantime.

6 So best practice for budgeting these types of complex
7 programs is to develop what is called an integrated master
8 schedule, an analysis that is going to break down the
9 project into steps, resources, and budget needed to
10 complete it. Sort of budgeting 101.

11 The GAO first raised this in 2020, that is three years
12 ago, and found that NNSA did not have such a plan in place.
13 GAO now put out a new report saying that NNSA still does
14 not have such a plan in place. According to GAO, the plan
15 you do have is, "not a reliable plan."

16 So, we see here again that NNSA is not following just
17 basic budgeting standards and planning for this program.
18 So, with total program costs running somewhere in the tens
19 of billions of dollars, we are talking about significant
20 cost risks if things get off schedule or run into problems.

21 And the plan you have doesn't even tie budget
22 resources to activities. So, Administrator Hruby, when
23 will NNSA have an IMS that meets budgeting 101
24 requirements?

25 Ms. Hruby: Again, on the individual projects we have

1 IMS. We -- the GAO report is looking at their overall
2 plan. We have been doing -- we have improved our overall
3 planning for the items that we know there is a tight
4 connection like gloveboxes.

5 But within -- so within the Los Alamos pit production
6 facility plan, it is very -- it is a highly integrated
7 plan. We are still working on developing the plan across
8 the entire --

9 Senator Warren: So, I am sorry. So, what was the
10 answer to my question? When will NNSA have an IMS that
11 meets basic budgeting requirements -- when?

12 Ms. Hruby: The plan -- it will go along the -- around
13 the same time as the life cycle plans, because we are still
14 -- we are still in the design phase of the Savannah River
15 pit production --

16 Senator Warren: Can I just suggest that it is not a
17 plan if you are making it up as you go along and just kind
18 of integrating this. You know, you have information on
19 this program because you are making budget requests for it.

20 So, you must know something because you are coming to
21 us asking us for money. But the current plan doesn't even
22 have the information on the resources that you will be
23 using for the few activities that you have included and
24 asked for money for.

25 And I just have to say, I am concerned that this looks

1 like it is just hiding information from the public and from
2 Congress. Either you don't know or you do know when you
3 are not telling us and that is a problem. So, I will just
4 wrap up because I know I am over time.

5 But I just want to say here that the Defense
6 Department is full of a lot of really high-priced items.
7 But even in that rarefied environment, NNSA run some of the
8 most shockingly expensive programs. So, it is deeply
9 concerning when just basic budgeting is out of whack here.

10 At a minimum, we need to know how much resources we
11 need for a project before we start implementing it. And I
12 am deeply concerned that we are just going to use this as
13 an excuse to drag out the timeline even further and jack up
14 the cost overall.

15 It is not unreasonable for Congress to ask you to tell
16 us how long a project is going to take and how much it is
17 going to cost in exchange for our forking over billions of
18 dollars. And I suggest that that is what NNSA be required
19 to do before we give them another penny. Thank you. Sorry
20 for going over.

21 Senator King: Thank you, Senator. I would point out
22 that Northrop Grumman has given us a fixed price contract
23 for the entire rebuilding of the Sentinel program, one of
24 the most complex undertakings in the history of the world.

25 And I understand the point that the Senator is making,

1 that having this vague assurances with no real firm cost
2 estimates or timeline is not -- this is a difficult
3 challenge, I understand, but I don't think it is more
4 complicated than rebuilding the entire Sentinel program.
5 Any further questions on this round? Yes, sir, Senator
6 Rounds.

7 Senator Rounds: When you submit the budget for the
8 production facilities, does it go through Energy or does it
9 go through DOD? Where does that come through at?

10 Ms. Hruby: The appropriations go through Energy and
11 Water.

12 Senator Rounds: I am sorry?

13 Ms. Hruby: Energy and Water.

14 Senator Rounds: Yes. So, it would come under the
15 Department of Energy. But the products that you are
16 producing are critical to the national defense because this
17 is the location where the pits, a significant number of
18 these pits would be produced for the Department of Defense.

19 Ms. Hruby: Well, the responsibility for making
20 nuclear weapons is with the Department of Energy. Has been
21 since the Atomic Energy Commission, since the Manhattan
22 Project. And philosophically, the reason for that is so
23 the weapons are not produced by warfighters.

24 They are produced by people with deep scientific and
25 technical knowledge of the weapons and the materials in

1 them.

2 Senator Rounds: So, and if I could just -- I will
3 wrap up. If the Department of Energy had a similar access
4 or could use a management plan similar to what was designed
5 for the Sentinel program, but also for the B-21, where
6 there was a fixed price basically involved in it, has that
7 been something that has been discussed within the
8 Department of Energy?

9 Ms. Hruby: We discussed this with the Department of
10 Defense all the time. So, we do have cost estimates and
11 independent cost estimating capabilities. We review this
12 with the Nuclear Weapons Council in detail on a regular
13 basis.

14 We are quite transparent in what we know and what our
15 uncertainties are. What we don't have in the GAO report is
16 the total cost to -- for the entire enterprise, because we
17 are still in the process of designing a major part of that
18 enterprise.

19 So, we have cost ranges and we have completion date
20 ranges because we don't yet have the amount of information,
21 we need to nail down a projected cost.

22 Senator Rounds: Thank you. Thank you, Mr. Chairman.

23 Senator King: One quick follow up question, Mr.
24 White. Are we processing waste on an ongoing basis, or are
25 we adding to the backlog? In other words, is the waste

1 that is being produced being processed as it comes, or is
2 the backlog growing larger?

3 Mr. White: Make sure I understand your question,
4 Senator. For a specific site or just in general?

5 Senator King: No, just in general, the waste that is
6 being produced by the entire enterprise. There is waste
7 being produced on a year-to-year basis. Is it being
8 processed or is it being processed on a current year to
9 year basis, or is it going into a repository for processing
10 at some later date?

11 Mr. White: So, when we look at this, the terms we use
12 are newly generated waste and our legacy waste. And so,
13 for the most part, I think we are keeping on top of our
14 newly generated waste at the same time that we are bringing
15 down the inventory of our legacy waste.

16 Senator King: So, we are not digging the hole deeper.

17 Mr. White: Right.

18 Senator King: Correct.

19 Mr. White: Right.

20 Senator King: Thank you. Go ahead, Senator Fischer.

21 Senator Fischer: Thank you, Mr. Chairman. Admiral, I
22 am curious on the AUKUS, the agreements that we are
23 reaching there and really the outstanding potential, I
24 think, that we are going to see. It is a tremendous
25 opportunity that we can increase the capabilities of one of

1 our closest allies.

2 It, I believe, also strengthens deterrence in the
3 Indo-Pacific, that we are able to do that. Can you provide
4 us with an update on how discussions with the Aussies and
5 the Brits are going, and how that looks since this 18-month
6 consultation period is concluded?

7 Admiral Caldwell: Yes, ma'am. I can -- can you hear
8 me?

9 Senator Fischer: Yes.

10 Admiral Caldwell: I can talk about our experiences
11 over the 18 months, and then tell you that -- and where we
12 are headed now. Over the 18 months, we have had incredible
13 interactions with both of our allies.

14 One of the foundational dialogs has been stewardship,
15 to make sure that we understand this incredible technology,
16 but we treat it with respect. That has been just inherent
17 in every part of the dialog that we have had.

18 So, as we think about the different phases of AUKUS,
19 we built the optimal path so that Australia could learn,
20 grow. That includes embedded opportunities here in the
21 United States and in the UK, and eventually grow toward
22 where they not only understand the technology, but they are
23 ready to own and operate. It includes governance and
24 regulatory structures as well.

25 So, I would -- I want to leave you with the view that

1 these dialogs have been rich. They have been strong. We
2 have a lot of work ahead of us. I think we have laid an
3 excellent groundwork. But to give you some sense, I have
4 right now six Australian officers attending nuclear power
5 school down in Charleston.

6 They will graduate from that program and then they
7 will go into our U.S. fleet and they will serve initial
8 junior officer tours there, qualify as engineer officer,
9 and then we are going to find opportunities for them to
10 continue to serve in our Navy.

11 Likewise, we are considering embedded opportunities in
12 our shipyards, in our squadrons, and other areas where we
13 can continue to teach, mentor, train, develop their
14 leaders, and they are absolutely committed to this.

15 The same thing is true with the UK. So, we have
16 completed the consultation period. We have described the
17 optimal path. Now we are after the details to really make
18 this happen. It is exciting, but there is also a lot of
19 work ahead of us.

20 Senator Fischer: Thank you. And Administrator,
21 before the next panel, I would like to highlight the
22 phenomenal work by the men and women at Lawrence Livermore
23 to achieve that ignition last December.

24 I recall being there and visiting NIF in I think it
25 was 2014, and this is a huge accomplishment. Can you share

1 with the committee really the significance of the
2 breakthrough?

3 I know the Admiral said it is going to be a long time,
4 and we have all read the articles, it is going to be a long
5 time before we can really put this into practice. But
6 gosh, how cool. Tell us.

7 Ms. Hruby: Yes, thank you for that. It was very
8 cool. And it speaks to the ingenuity of the scientists and
9 engineers, and frankly just the grit. There were a lot of
10 people that didn't think it could be done.

11 And not only did we do it, but we did it first. And
12 so, I think it provides evidence of the power of science
13 and technology in the United States of America. For us, so
14 for us in the NNSA, this allows us to reach regimes,
15 physics regimes for -- to study nuclear weapons in ways we
16 haven't been able to do in the lab before.

17 That is our interest. Of course, the interest of the
18 American public and others is the ability to produce
19 boundless energy. And there is still a lot of work to do
20 to get there, but this gives us hope.

21 Senator Fischer: Thank you very much. Thank you, Mr.
22 Chair.

23 Senator King: Thank you. This concludes the first
24 panel, and we will not take a break. We will have the
25 second panel come to the table and move forward. Thank you

1 all very much. Dr. Adams, you are in the center. You want
2 to lead us off?

3 Mr. Adams: I would be happy to.

4 Senator King: Thank you.

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1 STATEMENT OF HON. MARVIN L. ADAMS, DEPUTY
2 ADMINISTRATOR FOR DEFENSE PROGRAMS, NATIONAL NUCLEAR
3 SECURITY ADMINISTRATION

4 Mr. Adams: Chairman King, Ranking Member Fischer, and
5 distinguished members of the subcommittee, thank you for
6 the opportunity to discuss the President's Fiscal Year 2024
7 budget request for NNSA.

8 As Deputy Administrator for Defense Programs, I am
9 committed to working closely with you, our other partners
10 in Congress, and the DOD to advance the nuclear security
11 mission. The Fiscal Year 2024 budget request for Weapons
12 Activities is \$18.8 billion. This is a \$1.7 billion
13 increase over Fiscal Year 2023 enacted levels.

14 This budget will enable us to continue fielding safe,
15 secure, reliable nuclear warheads, and an effective nuclear
16 deterrent force. NNSA is executing five nuclear warhead
17 modernization programs. Two of them are in full rate
18 production now and delivering on schedule to the Navy and
19 the Air Force.

20 The other three are making steady progress while
21 remaining aligned with the DOD platform programs. These
22 modernization programs address weapon aging, technology
23 obsolescence, and changes in delivery platforms.

24 As you know, much of this country's infrastructure for
25 manufacturing nuclear warheads has atrophied or

1 disappeared. And NNSA is engaged in a massive effort to
2 rebuild this infrastructure, an effort that will determine
3 our capabilities for decades to come.

4 As Administrator Hruby says, we have to get this
5 right. Our budget request will enable this rebuilding to
6 proceed at an aggressive but executable pace. NNSA's world
7 class computational, experimental, and test capabilities
8 are used every day to execute our mission. We can't do
9 without them.

10 They also attract outstanding individuals and help
11 them develop the expertise and judgment that we need in our
12 stockpile stewards. They add credibility to our nuclear
13 deterrent by demonstrating world leading expertise, as with
14 the recent fusion ignition experiment at the National
15 Ignition Facility.

16 And they enable us to maintain confidence in our
17 weapon performance without nuclear explosive testing. Our
18 budget request will allow us to keep these vital
19 capabilities up to date. Our tasks are urgent and
20 challenging, but with continued support from Congress, we
21 will succeed.

22 Our mission is vital and our workforce is determined.
23 Thank you and I look forward to your questions.

24 [The prepared statement of Mr. Adams follows:]

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1 Senator King: Thank you, sir. General.

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1 STATEMENT OF GENERAL THOMAS A. BUSSIERE, USAF,
2 COMMANDER, AIR FORCE GLOBAL STRIKE COMMAND

3 General Bussiere: Chairman King, Ranking Member
4 Fischer, and distinguished committee members, I am honored
5 to be here today to represent the men and women of Air
6 Force Global Strike Command and provide you an update on
7 our mission, our Airmen, our modernization programs, and
8 the challenges we face in sustaining our legacy weapons
9 systems.

10 As you all know, the world is a very different place
11 than it was in 2009 when this command was activated. Air
12 Force Global Strike Command was created to ensure the Air
13 Force dedicated the appropriate leadership and oversight of
14 our nation's nuclear mission.

15 As the Commander of Air Force Global Strike Command, I
16 intend to make sure no one forgets why this command exists.
17 For the first time in history, the U.S. faces two major
18 nuclear strategic competitors.

19 China continues to expand, modernize, and diversify
20 their nuclear forces, and is the foremost country
21 positioned to reshape its region and the international
22 order to comply with its authoritarian purposes.

23 Meanwhile, President Putin has engaged in reckless
24 rhetoric about the use of nuclear weapons as Russia
25 persists in their unprovoked attacks on Ukraine in an

1 attempt to expand their power and influence. Air Force
2 Global Strike Command remains the bedrock of our nation's
3 defense and the international insurance against these
4 threats.

5 I would like to thank the members of this committee
6 for your steadfast support as we continue to modernize our
7 weapons systems. I will briefly highlight some of our
8 ongoing initiatives. We continue to maintain and operate
9 our current minimum three ICBMs, and we are already
10 preparing our wings in their surrounding communities to
11 receive the future ICBM, the Sentinel.

12 Additionally, our bomber fleet, including the B-1s and
13 our dual capable B-2s and B-52s, are being sustained with
14 innovative solutions as we prepare for the future bomber
15 fleet, including the B-21 Raider and the B-52 Juliet. In
16 addition to ICBM and bombers, we continue our efforts to
17 modernize our nuclear command and control communications,
18 or NC3.

19 NC3 is integral to the national military command
20 system used to exercise and conduct continuous survivable
21 and secure nuclear command and control. To maintain the
22 security of our nation and our allies and partners, the
23 U.S. must ensure our weapons are capable and ready.

24 Our Airmen are empowered and equipped. The Airmen of
25 Air Force Global Strike Command fulfill our mission with

1 discipline, excellence, and pride. However, a number of
2 our Airmen also face personal challenges, including health
3 concerns, housing and childcare availability, and we are
4 working tirelessly to develop prompt and comprehensive
5 solutions to ensure our Airmen are getting the care and
6 support they deserve.

7 Last December, I was honored to be confirmed by you to
8 be the Commander of Air Force Global Strike Command. There
9 is no other place I would rather be. Strategic deterrence
10 and long-range strike are foundational to our nation's
11 defense, and Air Force Global Strike Command is the
12 backbone of these mission sets.

13 With our legacy platforms, our modernized forces, and
14 our devoted Airmen, we safeguard our nation now and, in the
15 decades, to come. Thank you for this opportunity. I look
16 forward to your questions.

17 [The prepared statement of General Bussiere follows:]

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1 Senator King: Thank you, General. Admiral Wolfe.

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1 STATEMENT OF VICE ADMIRAL JOHNNY R. WOLFE, JR., USN,
2 DIRECTOR, NAVY STRATEGIC SYSTEMS PROGRAMS

3 Admiral Wolfe: Chairman King, Ranking Member Fischer,
4 and distinguished members of the subcommittee, thank you
5 for the opportunity to testify on the Department of the
6 Navy's budget priorities for nuclear forces.

7 I would like to thank the subcommittee for its
8 continued support of the Navy's nuclear deterrence mission.
9 The mission of my command, Strategic Assistance Programs,
10 is to provide credible and affordable strategic solutions
11 to our warfighter.

12 To quote from the Administration's 2022 Nuclear
13 Posture Review, I quote, "in a dynamic security
14 environment, a safe, effective nuclear deterrent is
15 foundational to broader U.S. defense strategy and the
16 extended deterrence commitments we have made to allies and
17 partners." For nearly seven decades, the Navy has provided
18 unwavering support to the sea-based leg of the nuclear
19 triad.

20 This coming year we will build on this remarkable
21 history. Later this year, the Navy will conduct the final
22 demonstration and shakedown operation for an Ohio class
23 ballistic missile submarine. Alongside our partners in the
24 United Kingdom, we will celebrate the 60th anniversary of
25 the Polaris Sales Agreement.

1 In coordination with our colleagues at NNSA, we will
2 continue to ensure the W93/Mk7 program remains on schedule.
3 As this work shows, we must continue to sustain today's
4 deterrent while modernizing for the future.

5 The Navy continues to manage the nuclear strategic
6 weapons system across three main mission priorities.
7 First, sustaining the weapon system D5LE through Ohio end
8 of life. Second, developing the strategic weapon system in
9 the future, D5 Life Extension II for the Columbia class.

10 And thirdly, safeguarding our special relationship
11 with the United Kingdom, embodied in the Polaris Sales
12 Agreement. First and foremost, we must maintain the
13 current D5LE missile inventory and provide the necessary
14 operational support to sustain Ohio class submarines
15 through their end of life in the early 2040s.

16 All of our life extension programs remain on track,
17 and our current program will support the deployment of all
18 existing warheads. We must also recapitalize our
19 supporting Navy nuclear deterrence mission infrastructure
20 to support and sustain nuclear weapons and SSBN operations
21 that enable sea based strategic deterrence.

22 Secondly, along with PEO SSBN, we must continue to
23 transition between Ohio class and Columbia class submarines
24 and make sure they stay on schedule. For PEO SSBN, this
25 means delivering the largest, most capable, and most

1 advanced submarine ever produced by our nation,
2 representing a generational recapitalization of the SSBN
3 force.

4 For my command, this requires a seamless transition of
5 the current Trident II D5LE weapon system and missile
6 inventory onto the new Columbia class ballistic missile
7 submarine. We have already started the work on the next
8 variant of Trident D5LE II and its corresponding weapon
9 system. D5LE II will be necessary to out load the Columbia
10 class SSBN, starting with the 9th hull, ensuring that
11 Trident remains credible until at least 2084.

12 Finally, one of the greatest advantages the United
13 States has is its alliances and partnerships. For decades,
14 U.S. policy has recognized the contribution of an
15 independent British nuclear deterrent and how it adds to
16 NATO and global security, and SSP will continue to support
17 this most important relationship.

18 Execution of these three mission priorities is only
19 possible through investment in our people, our
20 infrastructure, and our industrial base. Nuclear
21 modernization will take time, so sustained resourcing and
22 enterprise effort is absolutely essential. We can no
23 longer put off recapitalization -- recapitalizing our
24 nuclear triad.

25 Our adversaries are not idle. Russia's and China's

1 nuclear arsenal is our nation's biggest existential threat.
2 It is only through your continued support that the
3 Department's top modernization priorities can be achieved
4 and the Navy can deliver a reliable, sea based strategic
5 deterrent capability.

6 As the 14th Director, it is my highest honor to
7 represent the men and women of SSP. My personal number one
8 priority is to ensure that they are poised to execute the
9 mission with the same level of success, passion, and rigor
10 that has characterized our workforce since our program was
11 founded in 1955.

12 Thank you for the opportunity to testify today on
13 behalf of the dedicated Americans that make deterrence of
14 major power conflict their life's work. I look forward to
15 your questions.

16 [The prepared statement of Admiral Wolfe follows:]

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1 Senator King: I think your last statement is very
2 important in terms of the basic strategy of this country,
3 which is deterrence. The best way to prevent a war is to
4 be sure that adversaries know that they will pay an
5 unacceptable price for an attack on this country, and that
6 is what has, in fact, worked to deter -- nuclear deterrence
7 for over 70 years.

8 So, I think that is an important overall, overarching
9 concept of this hearing, and in fact, our entire military
10 strategy. Admiral Wolfe, we heard General Caldwell talk
11 about a new or a modified reactor.

12 Are you talking about modernization of the D5 missiles
13 for the new -- for the Columbia class? And is that a later
14 development or is that part of the current schedule?

15 Admiral Wolfe: So, what we have requested, sir, as
16 part of SSP's strategy going forward in schedule to make
17 sure that we have what we call D5 Life Extension II. It is
18 a new missile that will replace aging assets that we have
19 got in the current system.

20 Senator King: Will that be ready when the first
21 Columbia --?

22 Admiral Wolfe: It will not be ready. The plan is for
23 Columbia, in order to reduce risk to the overall deterrent,
24 the decision was made because of where we are at with the
25 Trident weapons system.

1 We are ostensibly picking that system up and we are
2 going to install that onto the first eight platforms of the
3 Columbia class. We have got the missile inventory. We
4 have got the life on the system to be able to do that.

5 In 2039 when we get to the 9th hull, we will have
6 concerns about aging electronics. We will have concerns
7 about quantities of missiles that we have because we flight
8 test every year to prove their reliability --

9 Senator King: I am assuming that the Columbia is
10 going to be designed on a modular basis so that as
11 technology develops you will be able to improve and add new
12 technology without rebuilding the whole platform.

13 Admiral Wolfe: Yes, sir. That is exactly right. So,
14 we already do that today on the shipboard systems. All of
15 our shipboard systems, we are able to modernize them and
16 keep up with technology of what industry is doing and
17 others are doing.

18 Senator King: Let me follow up with another question
19 on the Columbia. We have heard testimony in this
20 subcommittee and in the larger committee and all over
21 Capitol Hill on workforce problems.

22 And we are talking about major workforce demands to do
23 Virginia, Columbia, and now AUKUS. Is it realistic that
24 the yards are going to be able to meet the schedules that
25 we have laid out for those programs, given the challenges

1 of workforce that we have -- that we are experiencing
2 everywhere?

3 Admiral Wolfe: Sir, I think to your point, there is
4 no doubt we are going to continue to have challenges.

5 Those challenges are going to go well in the future.
6 I would tell you, I think that the strategy that the Navy
7 has taken with the things that we are doing for industrial
8 base investment, if you look at the request in President's
9 budget '24, it is greater than \$1 billion to invest in six
10 key areas of how we are going to get the industrial base
11 revitalized, how we are going to more rapidly train a
12 workforce, a skilled workforce that the Navy is going to
13 need and the shipyards are going to need.

14 And in our program, we are also very concerned about
15 that workforce as well as we start to ramp up a number of
16 missile development programs, not just for what the Navy's
17 doing, but in parallel for what the Air Force is doing.

18 There are challenges everywhere. But we are working
19 that very diligently with the industrial base to make sure
20 we keep up with that demand.

21 Senator King: I think diligence is the right word.
22 General, you are going to be in charge of managing the
23 Sentinel project, one of the largest, as I mentioned, one
24 of the largest projects ever undertaken by the United
25 States Government.

1 Are you satisfied with the progress -- and this is an
2 unclassified setting. Are you satisfied with the project
3 -- the progress that is being made under that contract?

4 General Bussiere: Chairman King, so far, yes. It is
5 probably one of the most scrutinized and oversighted
6 program in the Department of Defense. Has the direct
7 attention of Honorable Plehn, Honorable Hunter, myself,
8 obviously, the Secretary and the Chief.

9 We do episodic and routine progress statuses with both
10 internal to the Defense Department as well as with the
11 industry partners. It will be one of the major work
12 projects our nation has undertaken probably in the last 50
13 plus years.

14 So, it is not only just the aspects of building the
15 new weapons system itself, but the process of integrating
16 that new weapon system across the fabric of our nation,
17 while we maintain full operational capability with our
18 legacy Minuteman III.

19 Senator King: I know you are aware that one of the
20 great challenges is NC3 also. The whole enterprise won't
21 work if we don't have invulnerable communication.

22 General Bussiere: I couldn't agree more, Chairman
23 King. The underpinning of our deterrence is the ability to
24 command and control our forces.

25 Senator King: Thank you. Admiral Wolfe, one final

1 point. I am running out of time. But we have had
2 testimony in the past on the strategic importance of a sea
3 launch cruise missile that is nuclear tipped.

4 The Congress passed appropriations to support
5 research, and yet there is nothing for it in this budget
6 that has just been submitted. Can you give me your best
7 military judgment about whether the SLCM-N is a significant
8 part of our strategic deterrent?

9 Admiral Wolfe: So, sir, as I alluded to, the '22
10 Nuclear Posture Review, as they looked at the body of the
11 requirements, it was decided that the sea launch cruise
12 missile was not going to be part of the Nuclear Posture
13 Review, not be part of a supported system.

14 The 76-2, which we currently have, was stocked to fill
15 that gap. We are aware, though, and we will comply with
16 the plus ups that Congress has given us, \$5 million in
17 Fiscal Year 2022. We are executing that for research and
18 development.

19 The \$25 million in Fiscal Year 2023, we have developed
20 a plan to continue to look at technologies, to look at what
21 infrastructure would be, to look at how we would integrate
22 into platforms as time goes forward.

23 Senator King: I think we have to take cognizance of
24 the way the world has changed since that Nuclear Posture
25 Review was prepared, particularly given Russia's continuous

1 discussion of the use of tactical nuclear weapons.

2 We don't want to be in a situation where our only
3 response is a massive one, which isn't credible given a
4 lower level of utilization. So, I hope that you will
5 continue to review that issue, and I know we are going to
6 have further discussions in this subcommittee. Senator
7 Fischer.

8 Senator Fischer: Thank you, Mr. Chairman. Admiral, I
9 appreciated our conversation yesterday about the
10 significance of developing new weapons based on proven
11 designs, like the W-93. Can you share with the rest of the
12 committee your assessment of why this is important and
13 necessary?

14 Admiral Wolfe: Yes, ma'am. Certainly, as we look at
15 what the combatant commanders' requirements are, and to
16 Senator King's point, as we look at the changing
17 environment that we now face, we are faced with the
18 challenge of making sure that we have weapons -- first of
19 all, they have to be credible and they have to be from our
20 strategic competitors' eyes reliable that they are going to
21 work.

22 Which is why we talk about in partnership with NNSA,
23 making sure not only what they do with the explosive
24 package, but what we do with the system at large to make
25 sure that if ever called upon, it is going to work every

1 single time. And that is really the essence of deterrence.

2 And so, it is absolutely critical, as our systems
3 start to age, that we stay ahead of that and we never
4 question the reliability or the function of any of those
5 weapons, which is why modernization right now is so
6 important for the entire Department.

7 Senator Fischer: Thank you. General, the chairman
8 touched on NC3. It has become really common terminology
9 within the nuclear enterprise. With Sentinel's integration
10 into our nuclear architecture, can you describe any
11 advances taking place on items that you believe need
12 Congressional support?

13 General Bussiere: Specific to NC3, Senator Fischer?
14 So, the Sentinel weapon system will be fielded with
15 probably the most advanced communication systems that our
16 nation has developed. It will take into account our new
17 carrier pathways, for example, fiber.

18 It will take advantage of our cybersecurity protocols.
19 It will be designed so that, like Admiral Wolfe
20 illuminated, it will be designed so that as technology is
21 developed over the years, it is not difficult to integrate
22 that into the open architecture of our NC2 systems.

23 Senator Fischer: Do you have any specifics on the
24 technologies that you have been briefed on that might be
25 emerging that you are looking ahead that Congress needs to

1 know about?

2 General Bussiere: I don't think we would require any
3 assistance of Congress now, but there may be some
4 technologies in the future that would require that.

5 Senator Fischer: Okay. Can you provide us with an
6 update on the SAOC program?

7 General Bussiere: So, the Survival Airborne
8 Operations Center, as everyone knows, is the replacement to
9 our current E-4B fleet, which is our airborne command and
10 control platform. It is a 747-200 platform now.

11 There are requests out to industry to come back with
12 their proposals and offerings for the SAOC program, and we
13 are optimistic we will see those in the next few weeks, if
14 not months.

15 Senator Fischer: Okay. And then for Admiral and
16 General, how are you both working with NNSA to ensure that
17 the warheads needed for Sentinel and for Trident missiles
18 are delivered on schedule?

19 And then I would like Dr. Adams to respond to that, to
20 look at how -- what the possibilities are that we could
21 accelerate the delivery of those.

22 General Bussiere: So, Senator Fischer, specific to
23 our programs, whether it is the fielding of Sentinel or the
24 fielding of the LRSO weapon system, we work closely with
25 NNSA. We work closely with the Nuke Weapons Council, and

1 the Department of Energy, Department of Defense Forum that
2 really has those oversight responsibilities.

3 We are integral into those discussions. We are
4 confident that the Sentinel will be fielded, as you know,
5 with the W87-0. And so, we will be able to field that
6 weapon system and then transition in the future to the W87-
7 1.

8 We are also confident in NNSA's estimates to get us
9 the required W80-4 for our current schedule for when we
10 field the RSO.

11 Senator Fischer: Thank you. Admiral.

12 Admiral Wolfe: Yes, ma'am. So much like General
13 Bussiere said, we work very closely within NNSA. We work
14 at the Nuclear Weapons Council. I would say for our
15 systems, as Dr. Adams alluded to, we have just come through
16 the life extension for W76/Mk4.

17 We are in the throes of having the deliveries for the
18 W88 alteration that NNSA just completed, and those
19 deliveries are occurring. As we look to the future for the
20 W93/Mk7, Dr. Adams and I work very, very closely together.

21 We are in phase two right now to understand what the
22 options are and what options we want to carry forward, so
23 that as I get into the Navy work and the integration that
24 has to occur, and NNSA gets into the work they have to do,
25 we are absolutely in sync and aligned on schedules, and

1 that we are pushing each other to make sure that we stay
2 true to those schedules.

3 Senator Fischer: And Dr. Adams, your comments?

4 Mr. Adams: Yes, those were the -- [technical
5 problems] -- I am sorry. Do I need to repeat that? Just
6 it was a comment that says that the two programs in
7 production now, we have delivered on schedule to both the
8 Navy and the Air Force.

9 The next one up is the W80-4. We are holding very
10 closely to our scheduled first production unit of 2027.
11 There is some schedule risk. We are monitoring that very
12 closely and putting all hands-on deck to make sure we don't
13 realize schedule risks. Several components are difficult
14 to manufacture and we are working on that. We do remain
15 closely aligned with the LRSO program.

16 The LRSO delivery platform depends on us for hardware,
17 for their part of flight testing, and we depend on their
18 flights for our part of the flight testing. There are a
19 lot of environments that the LRSO is subject to because of
20 a lot of delivery platforms, a lot of aircraft, and we have
21 to design our warheads to make sure they can withstand
22 those environments.

23 The W87-1 is farther out. At this point, we talk in
24 terms of a schedule range. It is quite consistent with the
25 Sentinel schedule ranges that I have seen. We will be able

1 to support the deployed stockpile of that.

2 I am highly confident of that. And we are working
3 hard to make sure that we support the need for the hedge
4 portion of that as well. Details of that are classified.
5 With the W93 farther out yet, as Admiral Wolfe said, we are
6 in phase two, but already -- that is a tightly integrated
7 program.

8 The Mk-7 is under development at the same time that
9 the W93 warhead that will go in it is under development.
10 Our teams work incredibly closely together, and we have
11 also begun working very closely with the UK on their
12 parallel program.

13 Senator Fischer: Okay. Thank you very much. Thank
14 you, Mr. Chair.

15 Senator King: Senator Rosen.

16 Senator Rosen: Well, thank you, Chairman King,
17 Ranking Member Fischer, for holding this hearing. And I
18 would like to thank you all for your service and for being
19 here today. And before I begin, I really want to start by
20 offering my condolences to the families of the Ula miners
21 killed in a car accident last week at the Nevada National
22 Security Site, and to our entire NNSS community.

23 They are a very tight knit group and I know how much
24 this is hurting all of them. So, I want to just give them
25 my condolences. And I am going to move on and continue to

1 talk about Nevada National Security Site, build on some of
2 the importance of NNSA.

3 We have the NNSS and NNSA, all the NNs, but the audit
4 of the Ula complex and the enhancement projects. And so,
5 Dr. Adams, as you and I have discussed, the Nevada National
6 Security Site oversees the Stockpile Stewardship Program,
7 principally the Ula facility.

8 It is an underground laboratory where scientists
9 conduct subcritical experiments to verify the safety and
10 reliability of our nuclear stockpile without explosive
11 testing. Ula is undergoing a major construction project
12 that will soon host the most capable weapons radiographic
13 system in the world.

14 However, a November 2022 audit by the Department of
15 Energy's Inspector General found that the Ula Complex
16 Enhancements Project has faced unanticipated cost increases
17 and schedule overruns, which are going to threaten our
18 stockpile stewardship goals.

19 And so, Dr. Adams, what actions has the NNSA taken to
20 improve its management of science and technology
21 development projects that are necessary to support the
22 stockpiles through our stockpile stewardship, and what
23 management oversight changes are you putting in place to
24 avoid further cost and schedule changes in the future?

25 Mr. Adams: Thank you for that question, Senator

1 Rosen. We agree with the recommendations made in that IG
2 report, the draft recommendations. We have taken
3 corrective actions.

4 We had taken corrective actions prior to that audit
5 and we have been enhancing our management of these critical
6 activities. Like other construction projects around the
7 country and certainly within the NNSA portfolio, the
8 construction underground at Ula, those projects have
9 suffered from the same kind of supply chain problems,
10 inflation, labor shortages, and labor productivity being
11 lower than expected.

12 Our response to that is manyfold. We have instituted,
13 for example, a lessons learned task force on UPF, which was
14 one of the first construction projects we saw kind of go
15 off of the anticipated cost and schedule a little less than
16 a year ago, that came to light. We are instituting
17 recommendations based on those studies.

18 A lot of those things, Administrator Hruby mentioned
19 in the first panel session. With regards to sort of the
20 big picture of how we are handling those things, given the
21 causes for some of these construction schedule problems and
22 the costs that go along with schedule extensions, our
23 Fiscal Year 2024 budget request reflects the prioritization
24 that we have made to focus our limited labor, supply, and
25 dollars on a smaller number of high priority projects to

1 try to execute in parallel.

2 Those high priority projects include projects
3 underground Ula, the accelerator that you mentioned for the
4 radiography capability, the ASD Scorpius project. We have
5 added money to that in our request for Fiscal Year 2024.
6 And similarly, what is known as the ZEUS testbed is going
7 to require some mining that we didn't expect before and we
8 have asked for the funding to support that.

9 Senator Rosen: Thank you. I have a short amount of
10 time, so General Bussiere, I am going to just ask you a
11 little bit about AFWERX. So, you have a location right
12 here in Las Vegas -- right there in Las Vegas, designed to
13 develop effective solutions to the challenges facing the
14 Air Force by establishing partnerships with the private
15 sector.

16 In a few short years, it has evolved into the
17 innovation engine of the Air Force. Is now part of the Air
18 Force research laboratories, and the Air Force Global
19 Strike Command's innovation hub STRIKEWERX is based on the
20 AFWERX's model?

21 And so, I just have a few seconds left, but I know
22 that with cyber innovation center, STRIKEWERX, we have
23 saved the Air Force over \$248 million. It is nearly a
24 fivefold return on the funding that Congress originally
25 appropriated to fund this agreement.

1 So, I didn't see any discussion of this in your Fiscal
2 Year 2024 budget request, so what are your plans for
3 expanding the command's innovative efforts to take
4 advantage of things like STRIKEWERX?

5 General Bussiere: So, Senator Rosen, thanks for
6 highlighting the CIC and the innovation efforts of Global
7 Strike Command. So, I will briefly kind of give you an
8 overview. We have several different programs that
9 highlight and give our Airmen the opportunity to use their
10 most powerful tool, and that is their ideas.

11 So, we have AFWERX at the Air Force level, as you are
12 well familiar with. We have STRIKEWERX, which was really a
13 smaller scale model of that entry port. We also have
14 innovation cells at all our installations. In addition to
15 our Airmen innovation areas and cells, we also have started
16 a partnership with the help of Congress.

17 It is a commercial capabilities innovation team, which
18 basically does the same things with small business and
19 commercial entities in and around our business. It is
20 sometimes difficult to convince the system that an idea is
21 worthy of a program. But make no mistake, we invest and
22 bring in our Airmen to get ideas.

23 And we use the funding within our current top line and
24 we use our program. Whatever innovation that are saving
25 money is, that is where we would use the program dollars

1 for. But I will take for the record to go back and see
2 what was submitted in '24. I don't have that in front of
3 me and I will get back to you, if that is acceptable.

4 Senator Rosen: Thank you. I appreciate it. Thank
5 you, Mr. Chairman.

6 Senator King: Thank you, Senator. Senator Rounds.

7 Senator Rounds: Thank you, Mr. Chairman. And thank
8 you to all of you for your service to our country. Admiral
9 Wolfe, I would like to begin with you. The -- you
10 mentioned the really special anniversary coming up here,
11 the 60th anniversary of our agreement to Polaris sales of
12 missiles to the United Kingdom.

13 And as part of the Five Eyes group, they clearly are
14 some of our closest allies. But this particular agreement
15 has continued on through the years, and it really has been
16 a way for us to extend our capabilities. Can you talk a
17 little bit about just how critical it is that we continue
18 that relationship with the United Kingdom?

19 Admiral Wolfe: Yes, Senator, thanks for that, because
20 I think you are absolutely spot on, our relationship with
21 the United Kingdom under the Polaris Sales Agreement. I am
22 the U.S. project officer as part of that Polaris Sales
23 Agreement, and what we provide to the United Kingdom is the
24 entire weapon system.

25 It is not just the missiles. And as you look at where

1 we are at right now with the United Kingdom, they are
2 modernizing their entire SSBN force as well to include
3 their replacement of their Vanguard class submarine, which
4 would be the Dreadnought. We work very closely with them,
5 PEO SSBN.

6 We have a common missile compartments. Ostensibly, it
7 looks exactly the same as what the U.S. Columbia will have.
8 And in so doing, what that allows us to do is have -- treat
9 them like an extra four SSBNs in my program.

10 And so, we -- I know the other panel talked about
11 trust. I would tell you that the trust that the UK has
12 with us, and the system that we provide, and the
13 certifications that we give to them really does provide an
14 extension for the United States, it really provides for
15 NATO, and it really leads to global stability.

16 So, it is incredibly important that we continue to
17 support them in everything that they do as they modernize
18 their entire SSBN force. They have recently celebrated
19 more than 50 years of continuous at sea deterrence, which
20 means one SSBN at sea 24 hours a day, 7 days a week for the
21 last 50 plus years.

22 We have a big part in making sure that they continue
23 that record, and we are absolutely all in to do that.

24 Senator Rounds: And that is one less that we have to
25 have in the water at the same time.

1 Admiral Wolfe: Yes, sir. I mean, it is all part of
2 that extended deterrence. Yes, sir.

3 Senator Rounds: Thank you. General Bussiere, the B-
4 21 program is right now one of the shining stars out there
5 with regard to being on time, on budget, and one which the
6 folks in Rapid City, South Dakota, are really looking
7 forward to having it deployed there at Ellsworth Air Force
8 Base.

9 I am just curious with regard to the implementation of
10 its nuclear capability as well that requires a weapons
11 generation facility which will be created there at
12 Ellsworth. Can you share a little bit about the timelines
13 and so forth, and where you are seeing the B-2, in this
14 unclassified section, but at least share a little bit about
15 the development and the future timelines that you can share
16 with the public.

17 General Bussiere: So, Senator Rounds, as you know,
18 the first base for the B-21 raider will be Ellsworth Air
19 Force Base. Construction has already started on several
20 different facilities to support that sixth-generation low
21 observable platform, including adding a weapons generation
22 facility to be able to facilitate its dual docked mission.

23 I think the committee is also familiar that the
24 Secretary of Defense, I think three years ago, directed
25 that the certification of the B-21 Raider for conventional

1 and nuclear certification be closed. So, when we deliver
2 that weapon system to the wings, it will be capable of both
3 missions.

4 Very happy with the way that program is going. Very
5 happy with both industry, as well as the Rapid Capabilities
6 Office, and obviously the nation and the world got a sneak
7 peek at that in December when that weapon system was
8 revealed.

9 Senator Rounds: Great, thank you. And I need to go
10 back just for a minute, Admiral Wolfe, with regard to the
11 situation we have got with trying to deploy the new
12 submarines, as well as keep the existing submarines
13 operational. I go back to the USS Boise as an example.

14 This is a Los Angeles class nuclear submarine, attack
15 submarine, has now been in dry dock or prepared to be in
16 dry dock for its half-life basically, or close to seven
17 years now, if my memory serves me right.

18 But it suggests the bigger problem that we have got in
19 that we are trying to not only maintain and configure the
20 Ohio class, but also another Columbia class. How are we
21 going to right now create the new submarines, maintain the
22 existing submarines, handle the half-lives for the attack
23 submarines.

24 It seems to me that we just simply don't have enough
25 shipyard space and is there a priority for the Columbia

1 class and the Ohio class that is perhaps one of the reasons
2 why the Los Angeles class submarines are sitting at dry
3 dock.

4 Admiral Wolfe: So, yes, sir, I would tell you that
5 from a Navy priority, Columbia class as a new platform is
6 the priority. And I would tell you that PEO SSBN and PEO
7 SSN, both of them frequently meet together to understand
8 what needs to be done to make sure Columbia stays a
9 priority, to your point, so that we have a replacement
10 SSBN.

11 I would also tell you that the good news is, we are
12 about done with all of our -- as I alluded to, we are going
13 to do our last demonstration and shakedown operation on our
14 Ohio class, the USS Louisiana, and that will be the last of
15 the Ohio class that goes through their mid-life refueling
16 overhaul.

17 So those will be past us now. We will still have to
18 do normal maintenance and all the things that we do, but
19 those big availabilities are now going to be completed, and
20 we will continue to work through that capacity challenge as
21 well.

22 Senator Rounds: Thank you. Thank you, Mr. Chairman.

23 Senator King: One thing we learned from Admiral
24 Caldwell was that the Columbia class will never have to be
25 refueled. Gentlemen, thank you very much for your

1 testimony, for your service.

2 Thank you for joining us today and for giving us the
3 forthright answers to our questions. This hearing is
4 adjourned.

5 [Whereupon, at 6:27 p.m., the hearing was adjourned.]

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