

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 DEFENSE ACTIVITIES AND PROGRAMS
IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST
FOR FISCAL YEAR 2020

Wednesday, May 8, 2019

Washington, D.C.

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

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15 The subcommittee met, pursuant to notice, at 2:44 p.m.
16 in Room SR-222, Russell Senate Office Building, Hon. Deb
17 Fischer, chairman of the subcommittee, presiding.

18 Subcommittee Members Present: Senators Fischer
19 [presiding], Rounds, Hawley, Heinrich, King, and Jones.

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

3 Senator Fischer: The hearing will come to order.

4 Good afternoon. I would like to welcome everyone to
5 the Strategic Forces Subcommittee's fourth open hearing of
6 the 116th Congress and our final hearing before the
7 committee markup for its 2020 National Defense Authorization
8 Act.

9 We meet today to receive testimony on the Department of
10 Energy's atomic defense activities and programs.

11 Appearing before the subcommittee, we have the
12 Honorable Lisa Gordon-Hagerty, Administrator of the National
13 Nuclear Security Administration; the Honorable Anne Marie
14 White, Assistant Secretary of Energy for Environmental
15 Management; and Admiral James Caldwell, Deputy Administrator
16 for Naval Reactors at NNSA.

17 Thank you all for your service and for being with us
18 today. We look forward to hearing from each you. Your full
19 statements will be made part of the record.

20 We are in the middle of votes right now. The ranking
21 member, Senator Heinrich, is waiting to take the second vote
22 before he returns here to the hearing room. But at this
23 time, we will hear your opening statements. Administrator,
24 if you would like to begin.

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1 STATEMENT OF HON. LISA E. GORDON-HAGERTY,
2 ADMINISTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION

3 Ms. Gordon-Hagerty: Chairman Fischer and members of
4 the subcommittee, thank you for the opportunity to present
5 the President's fiscal year 2020 budget for the Department
6 of Energy's National Nuclear Security Administration. It is
7 an honor to appear before you today proudly representing the
8 extraordinary team at NNSA, a team that is indispensable for
9 our U.S. national security.

10 I am also delighted to share this hearing with my
11 colleagues, Admiral Frank Caldwell, my Deputy Administrator
12 for Naval Reactors, and Assistant Secretary Anne White.

13 Since I last testified before this committee, NNSA has
14 been diligently executing our three enduring missions: one,
15 ensuring the safety, security, and reliability of our
16 nuclear weapons stockpile; two, reducing the threat of
17 nuclear proliferation and nuclear terrorism around the
18 world; and three, providing nuclear propulsion for the U.S.
19 Navy's fleet of aircraft carriers and submarines.

20 The President's fiscal year 2020 budget request for
21 NNSA is an investment in these missions, our infrastructure,
22 and our people. My priorities with this crucial funding are
23 to revitalize the U.S. defense plutonium capabilities and
24 other essential infrastructure, to keep our stockpile life
25 extension programs on schedule and on budget, and to recruit

1 our workforce of the future. My focus is on setting the
2 conditions today for a resilient and responsive nuclear
3 security enterprise for the next 50 years and beyond.

4 The 2018 Nuclear Posture Review provided a realistic
5 view of our world, with an evolving and uncertain political
6 environment. The Nuclear Posture Review states that there
7 is no margin for further delay in recapitalizing the nuclear
8 security enterprise, an enterprise comprised of eight
9 laboratories, plants, and sites and a dedicated workforce of
10 almost 44,000 employees.

11 NNSA's \$16.5 billion budget request is a necessary
12 investment when you consider the stakes. Russia and China
13 are pursuing entirely new nuclear capabilities. North
14 Korea's intentions remain unclear. And we face the most
15 complex and demanding global security environment since the
16 end of the Cold War. Accordingly, our fiscal year 2020
17 budget request represents the largest increase for our
18 nonproliferation, counter-proliferation, and
19 counterterrorism programs in the last 5 years.

20 During my nomination hearing last year, I stated that
21 my highest priority was plutonium pit manufacturing, and
22 that has not changed. For the next several decades, NNSA
23 will rely on a combination of newly manufactured pits and
24 the judicious use of existing pits to modernize the existing
25 nuclear weapons stockpile. A modest pit manufacturing

1 capability is necessary to ensure the safety and security of
2 refurbished warheads while maintaining high confidence in
3 stockpile effectiveness. Consistent with the NPR, the NNSA
4 is committed to producing no fewer than 80 pits per year by
5 2030 to meet military requirements.

6 Last May, the Nuclear Weapons Council endorsed NNSA's
7 path forward to recapitalize a production capability that
8 was shuttered in the early 1990s. Our two-site approach
9 calls for pit production at both Los Alamos National
10 Laboratory in New Mexico and the Savannah River site in
11 South Carolina. Following this strategy, our fiscal year
12 2020 budget calls for nearly a \$500 million investment in
13 plutonium pit manufacturing capabilities at Los Alamos,
14 which will remain the nation's plutonium center of
15 excellence for research and development.

16 Thanks to the strong support of Congress, we have
17 stated construction on the main buildings the uranium
18 processing facility at Y-12 National Security Complex. I am
19 proud to report that this vital undertaking has been on
20 budget and on schedule for the last 6 years.

21 Indeed, all of NNSA's enduring missions are underpinned
22 by the state-of-the-art scientific capabilities. As these
23 capabilities become more important during this time of
24 renewed great power competition, NNSA is working to stay
25 ahead of the technology curve.

1 A future gap in high performance computing is being
2 addressed through a joint effort between NNSA and the
3 Department of Energy's Office of Science. Our contribution
4 to that effort will be undertaken at the Lawrence Livermore
5 National Laboratory and we will deliver a exoscale computing
6 platform to the enterprise in 2023.

7 From the earliest days of the Manhattan Project, the
8 dedicated men and women of the nuclear security enterprise
9 have answered our nation's call. What our team has
10 continued to accomplish is remarkable. We completed the
11 W76-1 life extension program under budget and ahead of
12 schedule. We have held 33 countries plus Taiwan to become
13 free of highly enriched uranium. We routinely deploy
14 nuclear security experts to major public events like the
15 Super Bowl that keep the public safe from radiological
16 threats, and we are lending unparalleled expertise to the
17 U.S. Navy's new Columbia class program to ensure sea-based
18 deterrence capabilities for decades to come.

19 Finally, I would like to emphasize that regardless of
20 the investments we make to modernize our enterprise, the
21 United States must continue its investment in our world-
22 class workforce as requested by the fiscal year 2020 budget.
23 NNSA is requesting that the current 1,690 FTE and 600
24 excepted service personnel caps be eliminated in order to
25 gain flexibility in hiring authorities and to better align

1 our personnel resources to mission priorities. With an
2 aging workforce, NNSA has launched an integrated effort to
3 recruit the next generation of scientists, engineers, and
4 technicians so that we can continue to answer the nation's
5 call and meet tomorrow's challenges. No other government
6 agency can accomplish these unique missions on behalf of our
7 American people, and I could not be prouder to represent
8 NNSA today.

9 Thank you for your continued strong support, the
10 reliable, flexible, and timely budget that you provided NNSA
11 for the current fiscal year, and for the opportunity to
12 testify before you today. I look forward to answering your
13 questions. Thank you.

14 [The prepared statement of Ms. Gordon-Hagerty
15 follows:]

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1 Senator Fischer: Thank you, Madam Secretary.

2 Secretary White, welcome.

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1 STATEMENT OF HON. ANNE MARIE WHITE, ASSISTANT
2 SECRETARY OF ENERGY FOR ENVIRONMENTAL MANAGEMENT

3 Ms. White: Chairman Fischer and members of the
4 subcommittee, thank you for the opportunity to appear today.
5 The fiscal year 2020 budget request of \$6.5 billion
6 demonstrates the administration's commitment to tackling the
7 environmental legacy of nuclear weapons production that
8 helped end World War II and the Cold War.

9 Madam Chair, since EM's inception, our dedicated
10 workforce has cleaned and closed sites, dramatically
11 reducing the EM footprint from 107 sites to just 16.
12 Progress continues at every site.

13 Last month, I was in New Mexico with Ranking Member
14 Heinrich to mark the 20th anniversary of the Waste Isolation
15 Pilot Plant, our key facility for final disposition of
16 transuranic waste across the EM complex. I saw firsthand
17 progress on a number of vital infrastructure projects at
18 WIPP, including upgrades to electrical, fire suppression,
19 and compressed air systems. WIPP not only has an amazing
20 history to celebrate but a very bright future ahead.

21 Over the course of the last year, workers in South
22 Carolina at the Savannah River site consolidated more than
23 400,000 cubic yards of coal ash and ash contaminated soil.
24 They got it done safely and 14 months ahead of schedule,
25 saving \$9 million and earning them the Project Management

1 Institute Award for project excellence.

2 For the first time in the history of the Savannah River
3 site, EM is processing two salt waste streams at the site.
4 With help from the parallel processing systems, now more
5 than 10 million gallons of salt waste have been processed
6 since salt decontamination operations began at SRS.

7 And at Oak Ridge, we took another significant step
8 towards large-scale cleanup at the Y-12 site.

9 During my confirmation hearings, I committed to enhance
10 safety through risk mitigation and cleanup and to address
11 overall taxpayer liability. That is precisely what I have
12 focused on during my first year on the job. We are getting
13 a clear picture of EM liabilities for the first time. We
14 are increasing accountability to Congress and to the
15 American people through stronger project management and
16 oversight. That includes addressing issues long raised by
17 the Government Accountability Office.

18 There are opportunities with the potential to get
19 cleanup projects done and off the books safely, sooner, and
20 at a reasonable cost. The Department is evaluating these
21 opportunities, including new technologies, treatment
22 options, and disposal capabilities in a comprehensive way.
23 Following on recommendations from wide-ranging and
24 nonpartisan outside groups, the Department is evaluating its
25 interpretation of the statutory term "high level radioactive

1 waste."

2 EM is also taking steps to get the best value out of
3 every cleanup dollar that Congress provides. That includes
4 identifying impactful regulatory reforms and improving
5 procurements through a new end-state contracting model.

6 As EM is put on a sustainable path forward, the budget
7 request provides the resources to build upon recent
8 successes and bring a renewed sense of urgency to the
9 program. The request provides the resources to make
10 progress on cleanup activities across the complex, including
11 addressing radioactive tank waste at the Savannah River site
12 and driving the direct feed low activity waste approach to
13 initiate Hanford tank waste treatment.

14 At Los Alamos, funding is included to initiate two
15 transuranic waste processing lines, complete
16 characterization of the high explosive plume in Canyon de
17 Valle and implement the full interim measure for the
18 chromium plume.

19 In the interest of time, I will stop there and just
20 note that more details about the work we have planned are
21 provided in my written testimony.

22 EM's historical successes have been achieved through
23 the dedication of leaders on both sides of the aisle with a
24 uniformity of purpose to drive the cleanup mission towards
25 completion. I want to work with Congress to clean up these

1 sites so that our host communities can envision a vibrant
2 future with diverse and enduring economic opportunities.

3 I appreciate this opportunity and the subcommittee's
4 support of the EM mission.

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

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1 Senator Heinrich [presiding]: 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 Fischer, Ranking Member
5 Heinrich, and distinguished members of this subcommittee,
6 thank you for the opportunity to testify here today.

7 I also thank the subcommittee for consistently
8 supporting Naval Reactors, enabling my team to provide the
9 Navy with propulsion plants that give our nuclear-powered
10 warships the incredible advantage of unmatched reliability,
11 speed, and endurance to carry our national security missions
12 around the world.

13 Our National Security Strategy and National Defense
14 Strategy recognize the increasing complex global security
15 environment marked by the reemergence of great power
16 competition, and these also recognize the erosion of our
17 competitive advantage. The Chief of Naval Operations has
18 made it clear that the Navy must become more agile, must
19 compete in ways that are sustainable, and must be prepared
20 to control the high end of maritime conflict.

21 Our nuclear Navy is essential in achieving these
22 objectives. Today, nearly 45 percent of our Navy's major
23 combatants are nuclear-powered, including 11 aircraft
24 carriers and 69 submarines. In 2018, Naval Reactors
25 supported the operations of the nuclear fleet, including 22

1 submarine deployments, 36 strategic deterrent patrols, and
2 five aircraft carrier deployments.

3 Naval Reactors' budget request for fiscal year 2020 is
4 \$1.65 billion, a reduction of \$140 million from last year's
5 request, or 7.8 percent from the fiscal year 2019 request.
6 Our budget fully supports three national priority projects.

7 The first project supports the Navy's number one
8 acquisition priority by developing the new propulsion plant
9 for the Columbia class ballistic missile submarine which
10 will feature a life-of-ship reactor core. That core is made
11 possible by the reactor technologies developed over many
12 decades. Because of your support, the Navy began procuring
13 long lead propulsion plant equipment for the lead ship this
14 fiscal year as planned, and we will begin manufacturing the
15 Columbia class reactor core later this year.

16 The second project is refueling and overhauling a
17 research and training reactor in New York. There is a dual
18 benefit to this effort, first, facilitating the reactor
19 development for the Columbia class and, second, providing 20
20 years of training for nuclear operators.

21 The third project consists of the naval spent fuel
22 handling facility in Idaho which will enable long-term,
23 reliable processing and packaging of spent naval nuclear
24 fuel from Navy nuclear propulsion plants.

25 This year's budget also invests in three key areas:

1 first, developing advanced reactor technology for future
2 classes of nuclear-powered warships; recapitalizing vital
3 laboratory facilities and infrastructure; and also
4 remediating efforts to reduce environmental liabilities of
5 legacy facilities.

6 I want to assure the subcommittee that our planning
7 efforts are done with rigor. Investments we make today in
8 research and development not only advance Navy warfighting
9 capabilities but also result in cost savings and improve
10 capability for the fleet far into the future.

11 I understand the difficult budget environment in which
12 Congress must craft legislation, and I respectfully urge
13 your support of our fiscal year 2020 budget request. Thank
14 you for this committee's longstanding support. I look
15 forward to answering your questions.

16 [The prepared statement of Admiral Caldwell follows:]

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1 Senator Heinrich: Thank you, Admiral.

2 I am going to go ahead and jump into my opening
3 statement. We apologize for the back and forth, but that is
4 what happens when we have a series of votes around here. So
5 members will be coming and going, and hopefully by the time
6 I am done with my opening statement, the chair will be back
7 as well.

8 I want to thank Chairwoman Fischer for holding today's
9 hearing.

10 I certainly want to thank all of our witnesses for
11 taking the time to testify. We very much appreciate your
12 service to our country and the job that you perform.

13 There are a number of issues I want to raise today at
14 this hearing. First and foremost is the issue of plutonium
15 and the recent report by the Institute for Defense Analysis,
16 or IDA, which essentially invalidated all NNSA conclusions
17 from last year's engineering assessment.

18 In that report, IDA stated that it was not feasible to
19 construct and operate any facility by 2030 to produce 80
20 pits per year at the cost range you found in the engineering
21 assessment. And this is quite serious because we legislated
22 last year based on that previous assessment.

23 More importantly, the issue is not with construction
24 costs although we know from the IDA that these numbers are
25 drastically underestimated. What I will be looking for is

1 the lifecycle cost. The real cost drivers are staffing and
2 facilities and getting them fully operational and capable of
3 producing our war reserve pits. I will be looking closely
4 at this issue, and according to the EA, we know the
5 lifecycle costs will exceed the cost of other options
6 considered by at least \$14 billion, which I would point out
7 is double the estimate for the alternative.

8 On the critical issue of rebuilding our warheads, I am
9 pleased with the cooperation with the DOD. But I am
10 concerned that we may be recreating a similar problem to
11 what we had in the early 2000s of balancing workload,
12 design, and engineering between the two weapons
13 laboratories. Livermore, over the next 10 to 15 years, will
14 be tasked with two major systems, the W80-4 cruise missile
15 warhead and the W87-1 warhead, while Los Alamos will be
16 exiting the B61-12 program. This is a serious issue, given
17 we had just staffed up for the B61 program.

18 Finally, Ms. White, welcome to our subcommittee. It
19 was great to see you in New Mexico recently. It goes
20 without saying that you are responsible for the Waste
21 Isolation Pilot Plant, and as you know, we have waste backed
22 up at every major DOE site because of the fire and drum
23 explosion several years ago at the WIPP site, as well as the
24 lack of adequate ventilation at WIPP to conduct operations.
25 And I want you to elaborate on what is being done to bring

1 back that capacity in a safe and effective manner. And I
2 know you touched on that in your opening statement.

3 More importantly, when it does become operational, I am
4 concerned, as my State has been for the past 30 years, that
5 we continue to adhere to the grand bargain between the State
6 of New Mexico and the Federal Government on what kind of
7 waste can be disposed in this unique, one-of-a-kind
8 facility. Until recent events, WIPP's success, in contrast
9 with Yucca Mountain, for example, was our ability to reach a
10 consensus between the State and Federal Government, and that
11 consensus was enacted into law in 1992 with the BLM Land
12 Withdrawal Act under Energy Committee jurisdiction. The
13 last thing we want is an upset Governor who retains Resource
14 Conservation and Recovery Act, or RCRA, authority over this
15 facility, an upset delegation, and an upset Senate committee
16 over trying to dispose of waste that is not explicitly
17 defined in the Land Withdrawal Act. So I will be asking you
18 some questions concerning waste reclassification and
19 attempts to dispose of waste not explicitly defined in the
20 WIPP Land Withdrawal Act.

21 And, again, thank you for coming today, and I very much
22 look forward to hearing all of your testimony and to
23 questions.

24 Senator Fischer [presiding]: Thank you, Senator
25 Heinrich.

1 We will begin our first round of questions.

2 Secretary Gordon-Hagerty, as you discuss in your
3 opening statement, this year's budget request of \$16.48
4 billion for NNSA -- this is \$1.3 billion over last year's
5 enacted level, which some suggest is a dramatic increase.

6 However, last year's budget projected a \$16 billion top
7 line for NNSA in fiscal year 2020, a 3 percent difference
8 from the level of funding requested in this budget. Instead
9 of being a massive or an unexpected surge in spending,
10 NNSA's budget is following the anticipated path. The
11 modernization programs that have been planned for a very
12 long time are finally getting started and they are off the
13 ground, and the cost will increase as activities progress
14 and programs become more mature.

15 That being said, can you talk about the importance of
16 funding this budget at the requested level and what impact
17 cuts would have on your ability to build a responsive
18 nuclear infrastructure, as well as your ability to meet the
19 deterrence requirements set out by STRATCOM?

20 Ms. Gordon-Hagerty: Chairman Fischer, thanks for the
21 question.

22 There are a number of opportunities that are critical
23 to our request in the fiscal year 2020 budget. You have
24 alluded to several of them. But we have three major
25 priorities in NNSA at the present time. One is to continue

1 our infrastructure modernization. And for those that are
2 unfamiliar, more than 50 percent of our facilities are 40
3 years old or older, 30 percent of which were built in the
4 Manhattan Project days. And to maintain an infrastructure
5 like that and ask our 44,000 men and women in our workforce
6 to maintain the U.S. nuclear deterrent and provide
7 assistance and support to nonproliferation, counter-
8 proliferation, counterterrorism programs to me is just
9 unacceptable. So we are on a trajectory to modernize our
10 long past modernization of our infrastructure, and many of
11 the requirements that we have and resources for which we are
12 requesting will continue us on that path.

13 As I mentioned in my opening statement, for example,
14 the uranium processing facility that will recover all of the
15 work that has been -- or most of the work that has been done
16 in what is known as 92-12 at Y-12, a facility that was built
17 during the Manhattan Project, long past its prime -- we will
18 be completing that program as long as we are receiving the
19 funding request that we have asked for, which is \$745
20 million this year, to continue the construction on the main
21 processing facility. We will complete that facility by the
22 end of 2025. But as long as we are on this trajectory and
23 the path forward for those major construction activities,
24 that is just one of so many others.

25 Another one is the Los Alamos National Laboratory and

1 our PF-4, a facility that is 40 years old. But we maintain
2 that as our singular location to do pit work, actinide
3 chemistry, and basically the basic research and surveillance
4 on our U.S. nuclear weapons stockpile.

5 I could explain many more facilities, but that is just
6 one of our highest priorities.

7 The second, of course, is our workforce. In the next 5
8 years, more than 40 percent of our workforce will be
9 retirement-eligible. We need to change the mindset of what
10 we are doing with the challenges we have to obtaining
11 clearances for new employees, for a number of other issues
12 that we have at our eight labs, plants, and sites, our seven
13 field offices and our headquarters. It is urgent that we
14 find a way to be able to hire the existing workforce changes
15 that we need, the increases that we need in our workforce,
16 as well as the workforce of the future. So we have a number
17 of different priorities that we are undergoing right now,
18 but that is just to maintain the existing nuclear weapons
19 stockpile.

20 Senator Fischer: I think that one of the main points
21 here is we are no longer just studying modernization. We
22 are no longer trying to define modernization. Now we are
23 working on it. We are moving forward. Would you agree with
24 that?

25 Ms. Gordon-Hagerty: Yes, that is correct.

1 Senator Fischer: And we are on schedule.

2 Ms. Gordon-Hagerty: Yes, we are.

3 Senator Fischer: Thank you.

4 Also, this year's budget requested a significant
5 increase for subcritical experiments. Can you talk about
6 the importance of these activities, specifically how they
7 will enable our continued certification of the stockpile
8 without returning to testing and support the W80-4 and the
9 W87-1 life extension programs?

10 Ms. Gordon-Hagerty: Yes. For the last 25 years, since
11 we stopped underground explosive testing in 1992, a
12 voluntary moratorium on underground explosive testing, the
13 Department of Energy and NNSA undertook a science-based
14 stockpile stewardship program, and in light of not being
15 able to conduct underground explosive testing, we need to
16 certify the stockpile on an annual basis. And I am happy to
17 say for the last 25 years, our three laboratory directors
18 and the STRATCOM Commander have sent letters to the
19 President from the Secretary of Defense and the Secretary of
20 Energy certifying the stockpile is safe, secure, and
21 reliable.

22 But in order to do so, we need state-of-the-art
23 scientific capabilities, of which one is ECSE, which is a
24 planned activity that we are going to plan on conducting at
25 Nevada national security sites. Those are subcritical

1 experiments that we currently undertake, but that will be a
2 new suite of capabilities that we are looking forward to
3 employing in the future.

4 In addition to that, we have high performance
5 computing, as I mentioned, exoscale at Lawrence Livermore
6 National Laboratory, which we will be able to operate that
7 platform beginning in 2023. There are a number of
8 different, very highly important scientific and engineering
9 capabilities that we have spread out throughout our entire
10 complex that inform us on the health of the stockpile.

11 Senator Fischer: And without these experiments, would
12 it be possible to certify the LEPs?

13 Ms. Gordon-Hagerty: It would be highly doubtful that
14 we would be able to do so with the confidence that we have
15 currently.

16 Senator Fischer: Thank you.

17 Senator Heinrich?

18 Senator Heinrich: Secretary Gordon-Hagerty, the NNSA's
19 engineering analysis back in May of 2018 provided a
20 lifecycle cost estimate for each of our nation's plutonium
21 options. Are you familiar with those numbers, and do you
22 have that slide with you today?

23 Ms. Gordon-Hagerty: Yes, I do. Thank you.

24 Senator Heinrich: I have got it here.

25 I want to direct your attention to alternative 1, the

1 Savannah big box alternative, and then also to alternative
2 2C which I will call the Los Alamos PF4 plus modules
3 alternative.

4 For this committee and for Congress, can you state what
5 the estimated lifecycle cost is for alternative 1, the
6 Savannah?

7 Ms. Gordon-Hagerty: The number that we had when we
8 completed the EA was \$27.8 billion.

9 Senator Heinrich: So can you state what the estimates
10 were for the other options?

11 Ms. Gordon-Hagerty: Certainly. Alternative 2 alpha,
12 \$18.8 billion; alternative 2 bravo, \$14.3 billion; and
13 alternative 2 Charlie, \$14.8 billion.

14 Senator Heinrich: Exactly.

15 The independent Institute for Defense Analysis has said
16 that no one option the NNSA considered is valid for actually
17 being able to produce 80 pits by 2030. So if no one option
18 is fundamentally better than the others, why build an entire
19 new weapons complex with an additional price tag of \$14
20 billion in lifecycle costs?

21 Ms. Gordon-Hagerty: Senator Heinrich, we recognize
22 that pit production activities at two locations is going to
23 result in higher lifecycle costs. Recognizing the numbers
24 that I gave you, our lifecycle costs are over a 50-plus year
25 period, not an annual basis, if you will, so total lifecycle

1 costs.

2 Additionally, this is fundamentally to ensure the
3 resiliency of our nuclear weapons stockpile. At present, as
4 a reminder, we have not had a plutonium pit production
5 capability since the early 1990s when we shuttered the Rocky
6 Flats plant in Colorado. The last time we produced war
7 reserve pits was in 2011 at Los Alamos. And so, therefore,
8 we have a challenge ahead of us if we want to just maintain
9 the current nuclear weapons stockpile and that of the 87-1,
10 which is the 78 replacement, which is what is driving our
11 numbers to have the not less than 80 pits per year, as
12 directed by the requirements laid out by STRATCOM and as
13 approved by the Nuclear Weapons Council.

14 Senator Heinrich: Well, I certainly agree with the
15 goal of 80 pits per year, but I am trying to understand why
16 nowhere else in the entire complex do we have this
17 requirement. We have one uranium facility. We have one
18 tritium facility. We have one plutonium facility. And the
19 IDA study said that basically none of the options were any
20 better than the other. So I just think it is very hard to
21 justify an additional \$14 billion in taxpayer money.

22 I want to jump to another budgetary issue, and that is
23 you should have in front of you the estimated out-year costs
24 for plutonium from your budget data. And I am curious in
25 particular, if you look at the line on LANL pit production

1 from fiscal year 2020 and then across to fiscal year 2024 --
2 and this is during the ramp to get to the point where we are
3 ramping up to achieve the 30 pits per year by 2026. So we
4 have fiscal year 2020 at 21.2. Fiscal year 2021 is 231.3.
5 Fiscal year 2022 is at 244, then 284 in 2023. And then it
6 drops to 75 in fiscal year 2024. And I am trying to make
7 sense of that 75 number given that it is in the midst of
8 that ramp.

9 Ms. Gordon-Hagerty: Well, first of all, I am happy to
10 say that our requirements are to place more than \$3 billion
11 over the next several years into Los Alamos for their pit
12 production capability. It is going to be a challenge at
13 best to get to our 10 pits per year by 2024, our 20 by 2025,
14 and the 30 and then 30 in perpetuity in 2026. Those numbers
15 come from our FYNCP.

16 And I am happy to say also that since we submitted the
17 fiscal year 2020 budget, we have put more fidelity into
18 these numbers, and we would be to brief you on these. But
19 let me assure you that those numbers are only going to
20 increase, and we are working very closely with Los Alamos
21 that is providing us with additional fidelity into what
22 their requirements will be. So rest assured, we are looking
23 to do everything we can to ensure operability at PF4 and
24 throughout the NNSA enterprise.

25 Senator Heinrich: Fantastic.

1 My time is up, so I am going to wait for the second
2 round. I have got some questions, Secretary White, for you
3 regarding WIPP, but we will get to it in the second round.
4 Thanks.

5 Senator Fischer: Thank you, Senator.

6 Senator Rounds?

7 Senator Rounds: Thank you, Madam Chair.

8 I want to take my time and work my way through a primer
9 with you, if we could. I think one of the challenges we
10 have in gaining support for moving forward with the
11 necessary improvements in the entire program is to have a
12 lot more people understand exactly what we are talking
13 about. So far, we are talking about pits. We are talking
14 about specifics that within the industry itself are well
15 known but not outside of the industry. Let us talk about
16 this for just a little bit so that people understand the
17 need for the additional production and what it entails.

18 Can we start talking with just exactly what a pit is,
19 and as much as we can in an unclassified session, what is
20 involved in making it, and what it is used for? So this is
21 going to be a primer.

22 This is really important that we gather support because
23 when we start talking about making changes within the
24 nuclear production capabilities of our country, it is
25 necessary that folks back home start to understand that

1 there is a real need and that just because we have
2 capabilities that have been here for years, it does not mean
3 that we do not need additional capabilities for the
4 operation of our nuclear capabilities. And I would defer to
5 any of you who want to work your way through this with us.

6 Ms. Gordon-Hagerty: Thank you. If I may start.

7 First of all, plutonium is used in the primary of a
8 nuclear weapon or a bomb, and it is the material, if you
9 will, the ingredient that provides the necessary explosive
10 power, plus additional materials, whether they are highly
11 enriched uranium and the secondary and other materials that
12 we need, critical materials that make up a nuclear warhead
13 or a bomb.

14 Senator Rounds: And how about for the Navy itself with
15 regard to the nuclear fuel needs for the carriers and our
16 submarines?

17 Ms. Gordon-Hagerty: So that is uranium, and it is
18 highly enriched uranium that we use. And it is also part of
19 the material that we process through our defense enterprise.

20 Senator Rounds: And is it done at the same locations
21 as these pits are produced?

22 Ms. Gordon-Hagerty: It is actually done at Y-12 and at
23 other locations throughout the United States where they
24 actually make the fuel rods.

25 Senator Rounds: And so when we talk about the pits

1 themselves, we are not talking even about the amount of
2 production needed for the fuel. We are talking about our
3 need for our weapon systems.

4 Ms. Gordon-Hagerty: For our entire enterprise. You
5 are exactly right. And this is just to maintain our
6 existing nuclear weapons stockpile. We are the only nuclear
7 nation that are not currently designing or fielding new
8 nuclear weapons. Every other nuclear weapon state is. What
9 we are doing is extending the life of our existing nuclear
10 weapons stockpile. And if I might, the oldest nuclear
11 weapon system that we have in our stockpile right now is the
12 B-61 that was fielded in the early 1960s.

13 Senator Rounds: I understand that right now that we
14 are upgrading or we intend to upgrade through what? About
15 the year 2020. We are beginning sometime in the year 2020
16 through what? 2023 for the B61-12 to be available. Is that
17 about right?

18 Ms. Gordon-Hagerty: Correct. That should be beyond
19 2025. We have an issue right now with the life extension
20 program on the B61, and we are addressing that right now.

21 Senator Rounds: And so when you do that, can you
22 simply use the nuclear material that was in the earlier
23 weapons to be redone, or do you need to use one of these new
24 pits?

25 Ms. Gordon-Hagerty: In the case of the W78, which is

1 what we are replacing now with something called the W87-1,
2 which is currently existing in the stockpile, we will need
3 to modernize our pit for that. That is precisely what we
4 are trying to deal with right now --

5 Senator Rounds: Now, if I understand it, the W78 is
6 not for the B61.

7 Ms. Gordon-Hagerty: No. The B61 -- we are going to
8 continue to use that and many elements of it. But what we
9 are doing is we are increasing the safety and security of
10 the actual nuclear weapon itself, and we are introducing new
11 robust systems and additional surety features that we can
12 talk about in a classified space, if you would like.

13 Senator Rounds: Okay. When we talk about a pit
14 itself, how big is a pit? How much material is it? Are
15 they standard?

16 Ms. Gordon-Hagerty: In unclassified terms, it is
17 several kilograms or more.

18 Senator Rounds: And do we use multiple pits per weapon
19 system?

20 Ms. Gordon-Hagerty: No. There is a single pit in the
21 primary for a nuclear weapon system, and there is a
22 secondary. And it depends what the configuration is and
23 what the nuclear weapon --

24 Senator Rounds: And so if you were to talk to the
25 public on this and you were to say this is the reason why we

1 need to produce more pits, a lot of folks are going to say,
2 well, we have already got plenty in stock. We have got lots
3 of weapons out there. What is the need for the increase in
4 production of pits? I think that is a really important
5 thing to discuss.

6 Ms. Gordon-Hagerty: It is based on military
7 requirements and what the military requirements and target
8 sets are. So we take our direction from STRATCOM, the
9 Strategic Command, about what their requirements are, what
10 our nuclear weapons stockpile requirements based on
11 direction from the President.

12 Senator Rounds: So what you are actually saying,
13 though, is it is not even just to replace those that are
14 there. It is because when we modernize, we are actually
15 looking at different types of weapon systems that we need in
16 order to be a deterrent force into the future. And we are
17 not just talking 2 years from now. We are talking 25, 30,
18 40 years from now.

19 Ms. Gordon-Hagerty: Exactly. We are talking more
20 likely 50 and beyond. And that is exactly what we are
21 doing. And in fact, you raise a good point, Senator. One
22 of the issues about plutonium right now is plutonium aging,
23 and it is a challenge that we have and that is, in fact, why
24 we are doing some of the studies that we are undertaking and
25 some of the modernizations that we are undertaking. In

1 fact, that is why we are doing the 78 replacement for the
2 87-1, which is exactly why we need the new plutonium pit
3 production capability, something again that we have not had
4 since the early 1990s.

5 Senator Rounds: Thank you.

6 Thank you, Madam Chair.

7 Senator Fischer: Thank you, Senator Rounds.

8 Senator Jones?

9 Senator Jones: Thank you, Madam Chairman.

10 Thank you all for being here today.

11 I want to go back, Secretary Gordon-Hagerty, to
12 something you mentioned earlier today, and that is about
13 staffing levels. Let us get to some nuts and bolts.

14 40 percent of your staff is going to be retirement-
15 eligible in 4 or 5 years. But as I understand it, a couple
16 of studies have already said it is understaffed now. Your
17 responsibilities are increasing and if the administration
18 and Congress want you to do your job, we got to provide you
19 the tools.

20 So can we talk a little bit about staffing? What are
21 the challenges that you are facing in recruiting? What can
22 we do to help? Are there specific things that are stopping
23 you from bringing new people on for this really important
24 role that you have got here?

25 Ms. Gordon-Hagerty: We have a number of staffing

1 challenges ahead of us -- currently and ahead of us. One of
2 the things that we have requested is if Congress would
3 consider lifting the cap on our FTEs, for our full-time
4 equivalents, for our federal workforce, which is at 1,690 at
5 the present time. We are bumping up close to that right
6 now, and that is just to staff our headquarters and our
7 field offices. Most of those personnel are at our field
8 offices.

9 However, we have taken a look at what we need to do
10 about these staffing challenges, and what we are doing is
11 sort of what I consider disruptive technology. And what we
12 have done is we have come together with all of our labs,
13 plants, and sites, our field offices, and our headquarters,
14 and instead of doing basically 16 different stovepipe
15 staffing plans, if you will, we are coming together and we
16 are getting together with all the labs, plants, and sites
17 hiring authorities and our field offices and our
18 headquarters. And we have had a hiring day, which we
19 undertook in January of this year, where we had 1,700
20 applicants. And just to give you some idea -- for those of
21 you in the federal workforce, you will understand -- we
22 actually offered 53 jobs at that time. So that is unheard
23 of that the federal workforce could actually offer those
24 kinds of jobs.

25 That said, we are working very closely with

1 organizations and with some of our labs, plants, and sites
2 such as Los Alamos. Los Alamos has just undertaken an
3 agreement with Northern New Mexico College to start a
4 technician program for rad techs so that they can bring in a
5 new pipeline of radiological technicians to do work in
6 plutonium operations and working with radioactive materials.

7 We are finding different ways of trying to resource, if
8 you will, or source the next generation, the best and
9 brightest. And those are scientists. Those are engineers.
10 Those are technicians. Those are people that put hands on
11 weapons. Those people that put hands in glove boxes, as
12 well as the primary and secondary designers. We are trying
13 to find different ways of finding that pipeline, if you
14 will.

15 We have a number of very interesting programs now where
16 we support universities and colleges around the United
17 States where we can actually grow our workforce through
18 those endeavors. But we really need to break that paradigm.

19 I am also happy to say that we have also established
20 things called national security or nuclear security
21 enterprise days. We have conducted on-site employment
22 opportunities at Georgia Tech, at University of California
23 at Merced, and Texas A&M so far this year. We will be going
24 to the State of Ohio and we will be going to the State of
25 North Dakota in the next several months or so, probably in

1 the fall time to see what we can do to encourage a pipeline
2 of new students throughout our United States that might want
3 to come to work at our great eight labs, plants, and sites,
4 field offices, and our headquarters.

5 So we are really trying to break that paradigm because
6 it is crucial now. Los Alamos is looking to hire 1,000
7 people this year. Sandia is looking to hire 1,000 people
8 this year. Livermore is looking to hire 500 people. We are
9 talking about really thousands of people in our workforce
10 not only in the next 5 years but now in order to handle the
11 increasing workload that is on us right now.

12 Senator Jones: All right. Well, great. I wish I had
13 asked a question that you were passionate about.

14 [Laughter.]

15 Senator Jones: Well, let me just ask this. I want you
16 very succinctly if you can -- we are hearing talk from
17 different sectors about that it may be too expensive to
18 modernize all three prongs of the nuclear triad. I do not
19 agree with that. But I would like for you to just right
20 here on the record here, maybe in less time than you talked
21 about the staffing, tell us how they work together and why
22 it is important that we modernize all of the nuclear triad.

23 Ms. Gordon-Hagerty: Well, I would certainly defer to
24 the Department of Defense since they are the ones that
25 employ the nuclear triad. But it is imperative to have a

1 credible deterrent in the United States that we have every
2 capability possible in order to show that we have a robust
3 deterrent and playing into the global threats that we see
4 now and on the horizon. It certainly would make sense to
5 maintain the triad as it is.

6 Senator Jones: All three work together --

7 Ms. Gordon-Hagerty: All three work together.

8 Senator Jones: -- as a part of that deterrent.

9 Ms. Gordon-Hagerty: That is exactly right.

10 Senator Jones: Thank you.

11 Thank you, Madam Chairman.

12 Senator Fischer: Thank you, Senator.

13 Senator Hawley?

14 Senator Hawley: Thank you, Madam Chair.

15 And thank you to all of the witnesses for being here.

16 Administrator, if I could just start with you. It is
17 nice to you see you again the other day, and thank you for
18 being here. Thank you for your service.

19 Can I come back to Senator Heinrich's question? What
20 is the answer to his question about the alternative
21 facilities here for pit production? If in fact there is no
22 advantage one over the other, then why build the new
23 facility at Savannah River?

24 Ms. Gordon-Hagerty: Senator, always nice to you too
25 again. Thank you.

1 First of all, we believe that it is necessary to have
2 resiliency throughout the enterprise. Now, admittedly, I
3 would like to see a resilient enterprise that has redundant
4 capabilities throughout our entire complex, but that would
5 just break the budget and that is just untenable.

6 However, we have decided that our highest priority is
7 for pit manufacturing and production. And it is our
8 impression that putting all of our capabilities at a single
9 site while we are maintaining plutonium pit production
10 capabilities, which is what we are trying to do at Los
11 Alamos and get them to 30 pits per year by 2026, we do not
12 believe that it is appropriate to put all of our
13 requirements in a single location and that redundancy is
14 critical to maintaining our nuclear enterprise now and in
15 the future.

16 Again, as I had mentioned in the outset of my
17 discussion, plutonium facility 4 at Los Alamos is over 40
18 years old. These numbers that Senator Heinrich had referred
19 to do not include the lifecycle costs for either modernizing
20 that facility or replacing that facility.

21 So we have got challenges ahead of us no matter where
22 we look in the enterprise. We had an opportunity to
23 repurpose a facility at South Carolina, and we think that is
24 the best way to go for a resilient and a functioning
25 enterprise for the next 50 to 75 years.

1 Senator Hawley: The redundancy piece is really
2 important to you. Is that right? Can you just explain why
3 it is so critical?

4 Ms. Gordon-Hagerty: Because putting our capabilities
5 in a single location, if there is a major activity or a
6 major incident at a single location, our entire nuclear
7 weapons enterprise is down for any kind of pit production
8 capability or monitoring, even our surveillance. So if we
9 lose our single location, then we do not have an enterprise
10 that is resilient and we may be unable to or it will put in
11 jeopardy the capability to surveil our current nuclear
12 weapons.

13 Senator Hawley: So what I hear you saying is when you
14 think about the different options here, the various
15 alternatives, they are not all the same in the sense that --
16 it is not merely about the amount of production you can get
17 cumulatively out of these facilities. It is also about
18 resiliency and redundancy, and these are important factors
19 that weigh heavily in the decision-making process. Is that
20 fair? Am I understanding you correct?

21 Ms. Gordon-Hagerty: They are critical.

22 Senator Hawley: Now, back to the goal of reaching the
23 2026 pit production goal, you said a little bit earlier that
24 it is going to be a stretch -- I think that was the word you
25 used -- to reach that goal. Can you say a little bit more

1 there and what sort of mitigation strategies we are going to
2 employ if we do not, in fact, hit that goal?

3 Ms. Gordon-Hagerty: Certainly. We are working
4 incredibly closely with our colleagues at Los Alamos
5 National Laboratory and, for that matter, all of our
6 colleagues around the enterprise pulling together a team to
7 find out where we can minimize risks, maximize opportunities
8 and working in parallel on several strategic plans. Los
9 Alamos is required to put together a plutonium pit plan for
10 us. They are undertaking that right now. We have seen the
11 draft, and we are working on that plan with them to get us
12 to that 30 pits per year. So we are working, doing
13 everything we possibly can to give Los Alamos the tools
14 necessary to be successful to get us to those requirements
15 of the 30 pits per year by 2026.

16 Senator Hawley: Very good.

17 In the time I have remaining, let me just shift gears
18 briefly and, Admiral, ask you. I noticed that CBO is
19 estimating that over the next 10 years, about 6 percent of
20 defense spending is going to go toward modernizing the triad
21 and managing the various life extension programs, which is
22 quite a bit of money and focused on a pretty narrow sector
23 of our national defense. And so I just want to ask you
24 about the effective management of some of these programs.

25 I understand the Naval Reactors is moving out of the

1 development phase and into production for the Columbia
2 class. Has your experiencing with developing this reactor
3 informed your approach to program management and avoiding
4 delays that are inherent to fielding new technologies like
5 this one?

6 Admiral Caldwell: Yes, sir. Thanks for the question.

7 I would say that my experience to date with the
8 Columbia program has absolutely informed the way ahead.
9 What I have realized is that we are trying to build a larger
10 Navy and recapitalize an important national asset on a
11 shipbuilding industry that did not build submarines through
12 the 1990s and really into the start of the 2000s. That
13 shipbuilding industry and the supporting vendor base has
14 some fragility in it, and it requires that we manage it very
15 carefully if we are going to be successful. We have learned
16 that it takes a tremendous amount of oversight, in fact, in
17 some cases intrusive oversight.

18 And it takes a close partnership with our partners in
19 the vendor base to understand what their capacity is, to
20 make sure that we are in dialogue with them, and to be very
21 sensitive to increases in production or changes in the way
22 that we tackle production. For example, many times a vendor
23 will make a change in production to accommodate maybe
24 affordability or maybe to make it easier to manufacture. If
25 you are not careful, you can induce errors.

1 So this close relationship, partnership is critical,
2 and oversight is essential if we are going to get this
3 right. So that comes from the Navy and it also comes from
4 our prime contractors that have to be really involved with
5 their subcontractors if we are going to get this right.

6 Senator Fischer: Thank you.

7 Senator King?

8 Senator King: Thank you, Madam Chair.

9 And this really is not addressed to you three, although
10 you are part of this enterprise. I think those of us that
11 are engaged in this issue have to do a better job of
12 communicating to the public the importance of the
13 modernization. I met with a group of Maine people yesterday
14 who basically said why are we spending all this money. Is
15 it another nuclear arms race? And by the way, 6 percent of
16 the budget is \$42 billion a year. This is not
17 insignificant. You could do a lot of Head Start slots for
18 \$42 billion a year. I mean, there are a lot of other
19 important priorities.

20 So this is just a comment that I think the Defense
21 Department and the strategic people have to really
22 communicate with the public about this because this is a
23 major commitment. You know, I had this discussion
24 yesterday, as I said, with a group of people that were very
25 skeptical. And I said we have got to have a -- you used the

1 right word -- credible deterrent. And that is the whole
2 rationale for the modernization. But I think the case has
3 to be made. What is the incremental value that we are
4 getting for that \$42 billion over and above what we have
5 now? And I hope you will take that back. As I say, that is
6 not really a question, but I think it is very important as
7 we go into this next year and this budget cycle.

8 Admiral Caldwell, you are now developing and have
9 developed a nuclear propulsion capability that has a longer
10 life. Have you ever done a calculation of what that saves
11 us over the long haul, in other words, not having to refuel,
12 having a longer life on a submarine, for example? It
13 strikes me that is a sort of hidden savings that I think is
14 important to quantify.

15 Admiral Caldwell: Yes, sir. We have done some of
16 those calculations. Well, first off, we always try to build
17 on technology to improve what we are delivering to the
18 fleet. And over the life of the program, we have been able
19 to deliver reactor cores that are life-of-the-ship cores.
20 In fact, every submarine we are building today has a life-
21 of-the-ship core, and the carriers have a 25-year core and
22 they get refueled once in life. The ability to have a core
23 in the Columbia submarine that lasts over 40 years will
24 allow us to do the mission with 12 submarines versus the 14
25 today.

1 Senator King: That is a huge savings right there.

2 Admiral Caldwell: That is a huge saving, and we think
3 that is about \$40 billion over the life -- total ownership
4 of the program.

5 Now, there are cost savings in other ways too, sir.
6 For example, if you look at the Ford aircraft carrier, we
7 designed that reactor plant with 25 percent more energy in
8 the core, three times the electrical generation capacity.
9 We were able to take out roughly 30 percent of the required
10 maintenance in the propulsion plant, and we were able
11 thereby to reduce the manning in the propulsion plant by
12 about 50 percent. So if you take that figure and you add
13 that up over 11 carriers or a 12-carrier force is what the
14 Navy wants and you do that for the lifetime, that is real
15 money. And if you take all those kind of cost saving
16 measures that are in the Ford, it is about \$80 million per
17 year per carrier. So that is real money.

18 And so we are focused on not only delivering quality
19 but seeing can we manufacture these things cheaper, easier,
20 and can we do it so that it is affordable from a total
21 ownership cost.

22 Senator King: Thank you. That is important. And I
23 think there are other areas as well. We could talk about
24 the Truman, but that is another topic.

25 Secretary White, this is an issue I keep raising in

1 Energy and Natural Resources and here: waste. You all have
2 developed waste disposal techniques and technologies. Can
3 you please help us on the civilian side? Because this is
4 the unanswered question with regard to nuclear power. We
5 had a bill in Energy and Natural Resources to promote
6 nuclear power. It is fossil free. It has a lot of
7 positives. But we still have not answered the waste
8 question that has been pending now for about 70 years. Your
9 thoughts.

10 Ms. White: So Yucca Mountain is not within my purview.
11 But I would have to vehemently agree with you that in order
12 to sort of support the viability of commercial nuclear
13 power, the waste question needs to get solved. And we also
14 have to be able to decommission these facilities effectively
15 both in terms of safety and costs.

16 Senator King: What we have now are effectively 100 or
17 so high-level nuclear waste sites scattered all over the
18 country. We have one in Maine.

19 What I hope you can do is share some of your expertise
20 and poke the Department because this is a question that is
21 really impeding our national policy I think.

22 Ms. White: I agree with you totally. I will
23 definitely take that back to the Department.

24 Senator King: Thank you. Yes, pass it back to my
25 friend, Governor Perry. He will know who it is coming from

1 when I say Governor Perry.

2 Ms. White: Absolutely.

3 Senator King: Thank you.

4 Thank you, Madam Chair.

5 Senator Fischer: Thank you, Senator King.

6 Admiral Caldwell, for some time now, your three major
7 priorities have been the Columbia class reactor, the S8G
8 land-based reactor, and spent fuel handling project in
9 Idaho. Can you talk about what you see as the next key
10 challenges or objectives for the Naval Reactors?

11 Admiral Caldwell: Yes, ma'am, I can.

12 As you know, the last several years, we have been
13 focused on these three high priority, national priority
14 tasks. And as the budget for those winds down, I would put
15 the future funding requirements into sort of three broad
16 categories.

17 First is to support the operating fleet. That is
18 number one in Naval Reactors in our day-to-day business.
19 And that is important because when you operate a nuclear
20 fleet, you have to make sure that you provide the technical
21 support and the backing for all the sailors that operate
22 these great ships and make sure our Navy can go out there
23 and do the things that we need to do.

24 We have a number of aging platforms. We have extended
25 the life of the Trident submarine out past 40 years. That

1 was never intended that way. If you go back and look at the
2 aircraft carriers, we never intended to operate them
3 necessarily for 50 years, but we are. The same is going to
4 be true for our 688 or our Los Angeles class submarines. In
5 fact, we are going to refuel five to seven of those, and it
6 will take some of those out past 40 years of operations. So
7 being able to support that current fleet is vitally
8 important. That is number one.

9 Number two is building the technologies for the future
10 fleet. The Navy is examining the future capabilities that
11 we need, and they are talking about more energy in the core,
12 life-of-the-ship cores, stealth, acoustics, and improved
13 capability. So I need to invest in technologies that are
14 going to be the game changers in terms of affordability,
15 capacity, capability for the U.S. Navy. So that is number
16 two.

17 Number three are my facilities. I have a number of
18 facilities, just as the Administrator said, that are aging,
19 that go back 60 years or longer. And I either need to
20 recapitalize those facilities and I also need to
21 decontaminate and decommission a large number of those
22 facilities. And so you will see in my budget submission and
23 in the future FYNCPs a budget request to support taking a
24 bigger chunk out of that D&D, as well as recapitalizing very
25 important facilities at our labs that allow us to do this

1 important work that supports the fleet.

2 So those are the three big areas, ma'am.

3 Senator Fischer: Thank you, Admiral.

4 Secretary Gordon-Hagerty, as we have discussed, some
5 are criticizing this budget as being insufficiently
6 committed to nonproliferation programs. And this argument
7 is being made despite the fact that the fiscal year 2020
8 request and the associated out-year funding projections
9 would increase top line spending on nonproliferation above
10 the levels projected in last year's budget even though it
11 eliminates spending for the MOX program. Can you explain
12 that to us in greater detail?

13 Ms. Gordon-Hagerty: Yes, I can. In fact, thank you.

14 This is the largest increase that has been requested in
15 the last 5 years for our nonproliferation, our counter-
16 proliferation, and counterterrorism programs. As you
17 rightly state --

18 Senator Fischer: Sometimes we focus on the other side
19 of your programs, and I think this is really important.

20 Ms. Gordon-Hagerty: It is incredibly important. Thank
21 you.

22 And we are doing a number of things with this budget in
23 what we are looking to do in the out-years, one of which is
24 something that is very important, which is the cesium blood
25 irradiators. Oftentimes we are replacing cesium blood

1 irradiators which are large sources with non-radioactive
2 sources. They are x-ray machines. And we are doing this
3 around the United States, and hopefully we will be able to
4 do this around the world as well. By the end of 2027, we
5 will have completed the removal of the cesium irradiators
6 from the United States, which could be a radiological
7 terrorist -- an opportunity for terrorists to take the
8 materials and make them radiological dispersal devices or
9 otherwise known as dirty bombs. And at the end of 2027, we
10 anticipate completing that program throughout the United
11 States. So you do see a natural decrease in those budgets.

12 So there are a number of different programs that we
13 have that come to fruition. So oftentimes some might state
14 that we are drawing down on our nonproliferation programs.
15 There could be nothing further than the truth. We believe
16 very strongly in nonproliferation goals, counterterrorism,
17 and counter-proliferation as well. We are working very
18 closely with the interagency to put new programs in place
19 around the United States to support FBI initiatives for
20 counterterrorism, and we are working very closely and we
21 have just gotten approval from the White House to do so. So
22 you see that also in our engagement strategy and approach
23 and request for the 2020 budget.

24 Senator Fischer: Thank you.

25 Senator Heinrich?

1 Senator Heinrich: Assistant Secretary White, first
2 off, I just want to thank you for joining me in Carlsbad
3 last month to celebrate 20 years of operation at that one-
4 of-a-kind facility.

5 One of the concerns -- and we talked about this a
6 little bit there in Carlsbad, but one of the concerns I
7 continue to hear about are the ongoing problems with air
8 quality underground. Are there some things that we can do
9 now to improve air quality until the new ventilation system
10 is up and fully operational in a couple years? For example,
11 have we considered switching all of those diesel-powered
12 underground equipment over to electric-powered equipment
13 like they have in some of the other mining facilities?

14 Ms. White: So, yes, we have been looking at switching
15 over to electric. But in the meantime, though, there are
16 immediate things we have been doing such as kind of simple
17 operational things like ensuring vehicles are turned off if
18 they are not being used.

19 Other things. We have worked very closely with the
20 miners themselves to say, hey, what do you think about how
21 we can get more air flow. And so we have changed some
22 things like operating right in the middle of the drifts
23 rather than over at the side, some really kind of simple
24 operational things like that, applying some local
25 ventilation to get some air movement in spaces where there

1 is some dead air. So we are making improvements constantly.
2 We are also really trying to see if there are ways we can
3 accelerate the schedule on the new ventilation system. So
4 we are very concerned about it, and like I say, we are
5 working very closely with the miners themselves on this.

6 Senator Heinrich: I appreciate that. And I want to
7 encourage you on both fronts. Obviously, the miners
8 themselves have the direct day-to-day experience, and it is
9 not an easy job and we want them to be working in the safest
10 environment possible.

11 I want to ask you in addition, does the Waste Isolation
12 Pilot Plant accept non-defense transuranic waste?

13 Ms. White: It does not.

14 Senator Heinrich: Would it require a change in the
15 enabling statute to accept non-defense waste?

16 Ms. White: That is a legal question. I would imagine
17 the answer is yes.

18 Senator Heinrich: That is my read.

19 I do understand that the Nuclear Regulatory Commission
20 is developing a rule for greater than class C waste, but
21 under the 1986 Low Level Waste Policy Act, the Department is
22 charged with disposing of it. If this new NRC rule does
23 become final, what would the Department need to do to
24 implement this legislation?

25 Ms. White: So what we have done to date is there was a

1 requirement that we submit to Congress our report on our
2 environmental impact statement, the options within that.
3 That was submitted to Congress in 2017. The rule that asked
4 us to do this report also said then we would await
5 congressional action. So we are awaiting that action.

6 The other pieces and parts that need to happen are NRC
7 would need to decide first in the case of WCS, if that were
8 a selected facility. They would need to decide if Texas can
9 be the regulator or if NRC would be the regulator and the
10 licenser. And then also there would need to be a regulatory
11 basis and new regulations and requirements would need to be
12 developed. So we are a ways down the road before we will
13 have a disposal option for greater than class C.

14 Senator Heinrich: So my understanding is that DOE
15 under the Atomic Energy Act has the authority to reclassify
16 nuclear waste as long as it removes the highly radioactive
17 component and it can be safely disposed of at a low level
18 waste level and that last October, you made such a proposal
19 public. Do you know how that proposal, if it were to move
20 forward, would potentially impact WIPP?

21 Ms. White: So right now, where we are in the process
22 is we put out a Federal Register notice. We gathered a
23 large number of comments, I think 5,500. We are doing our
24 due diligence and looking very carefully through those
25 comments, seeing what they have to say to make a very

1 deliberate decision on this issue.

2 In terms of implementation, we have not done the
3 necessary studies to determine what specific waste streams
4 would go to which specific disposal routes. But should the
5 Department make that decision, we would like for the whole
6 process, both the States where the waste resides now and the
7 receiving States to be a very transparent process, and
8 simply following our existing rules around the National
9 Environmental Policy Act, CERCLA is not going to be enough.
10 So we want to go the extra mile because this is very
11 important to our nation.

12 Senator Heinrich: I would certainly agree with you
13 there.

14 Thank you, Madam Chair.

15 Senator Fischer: Thank you.

16 Senator King?

17 Senator King: First, you used the term "dead air." I
18 think of dead air is what happens when a reporter asks me a
19 question I do not want to answer. It is dead air.

20 [Laughter.]

21 Ms. White: For me, it is when a Senator asks me one.

22 [Laughter.]

23 Senator King: Good for you.

24 This is more a comment than a question, but it goes to
25 the costs that we were talking about.

1 One of the anomalies of the federal budgetary process
2 -- one of the many -- is that we have no capital budget.
3 Everything is operations even though we are buying 40-year
4 assets. No other entity on earth I think would not separate
5 that expenditure from paying a park ranger, and yet that is
6 what we do. And it distorts the way the budget works
7 particularly when we are making major capital investments,
8 as we will be over the next whatever the term is for this
9 particular modernization. But it goes for building
10 buildings and everything else. I mean, I just make that
11 comment that it really is I think one of the unacceptable
12 ways that we budget. Hopefully, that is something that we
13 can try to address because to pay for a 40-year asset in
14 cash essentially over the construction period is not a good
15 budget. It is not budgeting or accounting. It is not an
16 accurate representation of the actual cost over the life of
17 the project. So I just offer that. I could not resist
18 under this circumstance.

19 Thank you.

20 Senator Fischer: Senator Heinrich, anything else?

21 Senator Heinrich: I will save my questions for the
22 QFR.

23 Senator Fischer: I would like to thank the panel for
24 being here today. We appreciate all of your information
25 that you provide us. I would ask that you be available for

1 questions, written questions, and get those back to us as
2 soon as possible.

3 With that, the hearing is adjourned.

4 [Whereupon, at 3:50 p.m., the hearing was adjourned.]

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7
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9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

WORD INDEX

< \$ >

\$1.3 20:4
\$1.65 15:4
\$14 18:6 25:19
 26:21
\$14.3 25:12
\$14.8 25:13
\$140 15:4
\$16 20:6
\$16.48 20:3
\$16.5 4:11
\$18.8 25:12
\$27.8 25:8
\$3 27:10
\$40 44:3
\$42 42:16, 18
 43:4
\$500 5:12
\$6.5 9:5
\$745 21:19
\$80 44:16
\$9 9:25

< “ >

“**dead** 53:17
 “**high** 10:25

< 1 >

1 24:25 25:5
1,000 36:6, 7
1,690 6:23 34:4
1,700 34:19
10 10:5 18:13
 27:13 40:19
100 45:16
107 9:11
11 14:23 44:13
116th 2:6
12 43:24
12-carrier 44:13
14 9:24 43:24
15 18:13
16 9:11 34:14
1960s 30:12
1986 51:21
1990s 5:8 26:5
 33:4 41:12
1992 19:11
 23:11

< 2 >
2 25:11, 12, 13
 32:17
2:44 1:15
20 15:19 27:13
 50:3
2000s 18:11
 41:12

2011 26:7
2017 52:3
2018 4:4 14:24
 24:19
2019 1:7 15:5
2020 1:5 2:7
 3:5, 20 4:16
 5:12 6:22 9:5
 15:3 16:13 20:7,
 23 27:1, 4, 17
 30:15, 15 48:7
 49:23
2021 27:4
2022 27:5
2023 6:6 24:7
 27:5 30:16
2024 27:1, 6, 13
2025 21:22
 27:13 30:19
2026 27:3, 14
 38:11 39:23
 40:15
2027 49:4, 9
2030 5:5 17:19
 25:17
20th 9:14
21.2 27:4
22 14:25
231.3 27:4
244 27:5
25 23:10, 17
 32:17 44:7
25-year 43:21
284 27:5
2C 25:2

< 3 >
3 20:7
3:50 55:4
30 19:4 21:3
 27:3, 14, 14
 32:17 38:11
 40:12, 15 44:9
33 6:12
36 15:1

< 4 >
4 33:15 38:17
40 21:2 22:1, 8
 32:18 33:14
 38:17 43:23
 46:25 47:6
400,000 9:23
40-year 54:3, 13
44,000 4:10 21:5
45 14:22

< 5 >
5 4:19 22:7
 33:15 36:10

48:15
5,500 52:23
50 4:3 21:2
 32:20 38:25
 44:12 47:3
500 36:8
50-plus 25:24
53 34:22

< 6 >
6 5:20 40:19
 42:15
60 47:19
600 6:23
688 47:4
69 14:24

< 7 >
7.8 15:5
70 45:8
75 27:6, 7 38:25
78 26:10 33:1

< 8 >
8 1:7
80 5:4 17:19
 25:17 26:11, 15
87-1 26:9 33:2

< 9 >
92-12 21:16

< A >
ability 19:9
 20:17, 18 43:22
able 22:14
 23:15 24:6, 14
 25:17 43:18
 44:9, 10 45:14
 47:7 49:3
absolutely 41:8
 46:2
accelerate 51:3
accept 51:12, 15
accommodate
 41:23
accomplish 6:10
 7:6
accountability
 10:14, 17
accounting 54:15
accurate 54:16
achieve 27:3
achieved 11:22
achieving 14:21
acoustics 47:12
acquisition 15:8
Act 2:8 19:12,
 14, 17, 20 51:21
 52:15 53:9

actinide 22:2
action 52:5, 5
ACTIVITIES
 1:3 2:10 11:10
 20:13 21:23
 23:6 25:22
activity 11:12
 23:24 39:5
actual 31:10
 54:16
add 44:12
addition 24:4
 51:11
additional 25:19
 26:21 27:21
 28:17 29:3, 10
 31:11
Additionally 26:2
address 10:10
 54:13
addressed 6:2
 42:9
addressing 10:16
 11:11 30:20
adequate 18:24
adhere 19:5
adjourned 55:3,
 4
Administration
 2:13 3:2, 6 14:3
 33:17
administration's
 9:6
Administrator
 2:12, 15, 23 3:2,
 11 14:2 37:16
 47:18
Admiral 2:15
 3:11 13:1 14:1,
 4 16:16 17:1
 40:18 41:6 43:8,
 15 44:2 46:6, 11
 48:3
admittedly 38:2
advance 16:8
advanced 16:1
advantage 14:10,
 17 37:22
affordability
 41:24 47:14
affordable 44:20
afternoon 2:4
agency 7:6
agile 14:18
aging 7:2 32:22
 46:24 47:18
ago 18:23
agree 22:23
 26:14 36:19
 45:11, 22 53:12
agreement 35:3

ahead 5:25 6:11
 9:20, 24 17:2
 26:8 34:1, 1
 38:21 41:8
air 9:19 50:7, 9,
 21, 25 51:1
 53:18, 19
air.” 53:17
aircraft 3:19
 14:23 15:2 44:6
 47:2
aisle 11:23
Alamos 5:9, 13
 11:14 18:15
 21:25 25:2 26:7
 27:11, 20 35:2, 2
 36:6 38:11, 17
 40:4, 9, 13
align 6:25
allow 43:24
 47:25
alluded 20:24
alpha 25:11
alternative 18:7
 24:25 25:1, 1, 3,
 5, 11, 12, 13
 37:20
alternatives
 39:15
amazing 9:19
American 7:7
 10:15
amount 30:1
 39:16 41:16
Analysis 17:15
 24:19 25:15
Angeles 47:4
Anne 2:13 3:12
 9:1
anniversary 9:14
annual 23:16
 25:25
anomalies 54:1
answer 7:4
 37:20 51:17
 53:19
answered 6:9
 45:7
answering 7:12
 16:15
anticipate 49:10
anticipated 20:10
apologize 17:3
appear 3:7 9:4
Appearing 2:11
applicants 34:20
applying 50:24
appreciate 12:3
 17:11 51:6
 54:24

<p>approach 5:8 11:12 41:3 49:22</p> <p>appropriate 38:12</p> <p>approval 49:21</p> <p>approved 26:13</p> <p>areas 15:25 44:23 48:2</p> <p>argument 48:6</p> <p>Armed 1:12</p> <p>arms 42:15</p> <p>ash 9:23, 23</p> <p>asked 21:19 36:13 52:3</p> <p>asking 19:17</p> <p>asks 53:18, 21</p> <p>assessment 17:17, 21, 22</p> <p>asset 41:10 54:13</p> <p>assets 54:4</p> <p>assistance 21:7</p> <p>Assistant 2:14 3:12 9:1 50:1</p> <p>associated 48:8</p> <p>assure 16:6 27:19</p> <p>assured 27:22</p> <p>ATOMIC 1:3 2:10 52:15</p> <p>attempts 19:19</p> <p>attention 24:25</p> <p>authorities 6:25 34:17</p> <p>authority 19:14 52:15</p> <p>AUTHORIZATI ON 1:4 2:7</p> <p>available 30:16 54:25</p> <p>avoiding 41:3</p> <p>await 52:4</p> <p>awaiting 52:5</p> <p>Award 10:1</p> <p>< B ></p> <p>B61 18:17 30:20 31:6, 7</p> <p>B-61 30:12</p> <p>B61-12 18:16 30:16</p> <p>back 17:3, 6 19:1 24:19 28:25 33:11 37:19 39:22 43:5 45:23, 24 47:1, 19 55:1</p> <p>backed 18:21</p> <p>backing 46:21</p>	<p>balancing 18:11</p> <p>ballistic 15:9</p> <p>bargain 19:5</p> <p>base 41:13, 19</p> <p>based 17:22 32:6, 10</p> <p>basic 22:3</p> <p>basically 22:3 26:19 34:14 42:14</p> <p>basis 23:16 25:25 52:11</p> <p>began 10:6 15:12</p> <p>beginning 24:7 30:15</p> <p>behalf 7:6</p> <p>believe 38:1, 12 49:15</p> <p>benefit 15:18</p> <p>best 11:2 27:13 35:8 38:24</p> <p>better 6:25 25:18 26:20 42:11</p> <p>beyond 4:3 30:18 32:20</p> <p>big 25:1 31:14 48:2</p> <p>bigger 47:24</p> <p>bill 45:5</p> <p>billion 4:11 9:5 15:4 18:6 20:4, 4, 6 25:8, 12, 12, 13, 20 26:21 27:10 42:16, 18 43:4 44:3</p> <p>bit 28:16 33:20 39:23, 25 40:22 50:6</p> <p>BLM 19:11</p> <p>blood 48:24, 25</p> <p>bolts 33:13</p> <p>bomb 29:8, 13</p> <p>bombs 49:9</p> <p>books 10:19</p> <p>Bowl 6:15</p> <p>box 25:1</p> <p>boxes 35:11</p> <p>bravo 25:12</p> <p>break 35:18 36:5 38:5</p> <p>brief 27:18</p> <p>briefly 40:18</p> <p>bright 9:20</p> <p>brightest 35:9</p> <p>bring 11:8 18:25 35:4</p> <p>bringing 33:23</p> <p>broad 46:15</p>	<p>budget 3:5, 20, 25 4:11, 17 5:12, 20 6:11, 22 7:10 9:5 11:6 15:3, 6, 25 16:11, 13 20:3, 6, 8, 10, 16, 23 23:4 26:24 27:17 38:5 42:16 43:7 46:14 47:22, 23 48:5, 10, 22 49:23 54:2, 6, 12, 15</p> <p>budgetary 26:22 54:1</p> <p>budgeting 54:15</p> <p>budgets 49:11</p> <p>build 11:7 20:17 25:18 37:22 41:9, 11 43:16</p> <p>Building 1:16 43:20 47:9 54:9</p> <p>buildings 5:17 54:10</p> <p>built 21:3, 16</p> <p>bumping 34:5</p> <p>business 46:18</p> <p>buying 54:3</p> <p>< C ></p> <p>calculation 43:10</p> <p>calculations 43:16</p> <p>Caldwell 2:15 3:11 14:1, 4 16:16 41:6 43:8, 15 44:2 46:6, 11</p> <p>California 35:22</p> <p>call 6:9 7:5 25:2</p> <p>called 31:1 35:20</p> <p>calls 5:9, 12</p> <p>Canyon 11:16</p> <p>cap 34:3</p> <p>capabilities 3:23 4:13 5:13, 22, 23 6:18 10:22 16:9 23:23 24:2, 9 28:24 29:2, 3, 4 38:4, 8, 10 39:4 47:10</p> <p>capability 5:1, 7 16:10 26:5 27:12 33:3 37:2 39:8, 11 43:9 47:13, 15</p> <p>capable 18:2</p>	<p>capacity 19:1 41:19 44:8 47:15</p> <p>capital 54:2, 7</p> <p>caps 6:24</p> <p>careful 41:25</p> <p>carefully 41:15 52:24</p> <p>Carlsbad 50:2, 6</p> <p>Carolina 5:11 9:22 38:23</p> <p>carrier 15:2 44:6, 17</p> <p>carriers 3:19 14:24 29:15 43:21 44:13 47:2</p> <p>carry 14:11</p> <p>case 30:25 43:2 52:7</p> <p>cases 41:17</p> <p>cash 54:14</p> <p>categories 46:16</p> <p>CBO 40:18</p> <p>celebrate 9:20 50:3</p> <p>center 5:14</p> <p>CERCLA 53:9</p> <p>certainly 17:10 25:11 26:14 36:23 37:4 40:3 53:12</p> <p>certification 23:7</p> <p>certify 23:16 24:12</p> <p>certifying 23:20</p> <p>cesium 48:24, 25 49:5</p> <p>Chair 9:9 17:6 28:7 33:6 37:14 42:8 46:4 53:14</p> <p>chairman 1:17 3:3 9:3 14:4 20:20 33:9 37:11</p> <p>Chairwoman 17:8</p> <p>challenge 26:8 27:12 32:23</p> <p>challenges 7:5 22:10 28:9 33:21 34:1, 10 38:21 46:10</p> <p>change 22:9 41:23 51:14</p> <p>changed 4:22 50:21</p> <p>changers 47:14</p> <p>changes 22:14 28:23 41:21</p>	<p>characterization 11:16</p> <p>charged 51:22</p> <p>Charlie 25:13</p> <p>cheaper 44:19</p> <p>chemistry 22:3</p> <p>Chief 14:17</p> <p>China 4:12</p> <p>chromium 11:18</p> <p>chunk 47:24</p> <p>circumstance 54:18</p> <p>civilian 45:3</p> <p>class 6:17, 22 15:9, 15, 19 41:2 46:7 47:4 51:20 52:13</p> <p>classes 16:2</p> <p>classified 31:12</p> <p>clean 11:25</p> <p>cleaned 9:10</p> <p>cleanup 10:8, 10, 19 11:3, 10, 24</p> <p>clear 10:13 14:18</p> <p>clearances 22:11</p> <p>close 34:5 41:18 42:1</p> <p>closed 9:10</p> <p>closely 18:3 27:20 34:25 40:4 49:18, 20 50:19 51:5</p> <p>coal 9:23</p> <p>Cold 4:16 9:8</p> <p>colleagues 3:11 40:4, 6</p> <p>College 35:3</p> <p>colleges 35:16</p> <p>Colorado 26:6</p> <p>Columbia 6:17 15:9, 15, 19 41:1, 8 43:23 46:7</p> <p>combatants 14:23</p> <p>combination 4:23</p> <p>come 2:3 6:18 27:15 34:12 36:3 37:19 49:13</p> <p>comes 42:3, 3</p> <p>coming 17:5 19:21 34:15 45:25</p> <p>Command 32:9</p> <p>Commander 23:18</p> <p>comment 42:20 53:24 54:11</p> <p>comments 52:23, 25</p>
---	--	--	---	---

<p>commercial 45:12</p> <p>Commission 51:19</p> <p>commitment 9:6 42:23</p> <p>committed 5:4 10:9 48:6</p> <p>Committee 1:12 2:7 3:13 19:12, 15 25:4</p> <p>committee's 16:14</p> <p>communicate 42:22</p> <p>communicating 42:12</p> <p>communities 12:1</p> <p>compete 14:19</p> <p>competition 5:24 14:16</p> <p>competitive 14:17</p> <p>complete 11:15 21:21</p> <p>completed 6:10 25:8 49:5</p> <p>completing 21:18 49:10</p> <p>completion 11:25</p> <p>complex 4:15 5:18 9:16 11:10 14:14 24:10 25:19 26:16 38:4</p> <p>component 52:17</p> <p>comprehensive 10:22</p> <p>compressed 9:19</p> <p>comprised 4:8</p> <p>computing 6:1, 5 24:5</p> <p>concerned 18:10 19:4 51:4</p> <p>concerning 19:18</p> <p>concerns 50:5, 6</p> <p>conclusions 17:16</p> <p>conditions 4:2</p> <p>conduct 18:24 23:15</p> <p>conducted 35:21</p> <p>conducting 23:24</p> <p>confidence 5:2 24:14</p> <p>configuration 31:22</p> <p>confirmation 10:9</p> <p>conflict 14:20</p>	<p>Congress 2:6 5:16 10:14 11:3, 25 16:12 25:4 33:18 34:2 52:1, 3</p> <p>congressional 52:5</p> <p>consensus 19:10, 11</p> <p>Conservation 19:14</p> <p>consider 4:12 34:3, 11</p> <p>considered 18:6 25:16 50:11</p> <p>Consistent 5:3</p> <p>consistently 14:7</p> <p>consists 15:21</p> <p>consolidated 9:22</p> <p>constantly 51:1</p> <p>construct 17:19</p> <p>construction 5:17 17:23 21:20, 23 54:14</p> <p>contaminated 9:23</p> <p>continue 6:21 7:4 19:5 20:25 21:12, 20 31:8 50:7</p> <p>continued 6:10 7:9 23:7</p> <p>continues 9:12</p> <p>contracting 11:5</p> <p>contractors 42:4</p> <p>contrast 19:8</p> <p>contribution 6:3</p> <p>control 14:20</p> <p>cooperation 18:9</p> <p>core 15:10, 10, 15 43:21, 21, 22 44:8 47:11</p> <p>cores 43:19, 19 47:12</p> <p>correct 22:25 30:18 39:20</p> <p>cost 10:20 16:9 17:20 18:1, 1, 5 20:13 24:20 25:5 44:5, 15, 21 54:16</p> <p>costs 17:24 18:5 25:20, 23, 24 26:1, 23 38:19 45:15 53:25</p> <p>Council 5:6 26:13</p> <p>counter 21:7 48:15</p> <p>counter-proliferat ion 4:18 49:17</p>	<p>counterterrorism 4:19 21:8 48:16 49:16, 20</p> <p>countries 6:12</p> <p>country 17:12 28:24 45:18</p> <p>couple 33:15 50:10</p> <p>course 9:21 22:7</p> <p>craft 16:12</p> <p>credible 37:1 43:1</p> <p>critical 18:8 20:22 29:12 38:14 39:3, 21 42:1</p> <p>criticizing 48:5</p> <p>crucial 3:22 36:6</p> <p>cruise 18:14</p> <p>cubic 9:23</p> <p>cumulatively 39:17</p> <p>curious 26:24</p> <p>current 6:23 7:11 26:9 39:11 47:7</p> <p>currently 24:1, 15 30:7 31:2 34:1</p> <p>curve 5:25</p> <p>cuts 20:17</p> <p>cycle 43:7</p> <p>< D ></p> <p>D.C 1:13</p> <p>Dakota 35:25</p> <p>data 26:24</p> <p>date 41:7 51:25</p> <p>day 34:18 37:17</p> <p>days 6:7 21:4 35:21</p> <p>day-to-day 46:18 51:8</p> <p>de 11:16</p> <p>dead 51:1 53:18, 19</p> <p>deal 31:4</p> <p>Deb 1:16 2:1</p> <p>decades 4:22 6:18 15:12</p> <p>decide 52:7, 8</p> <p>decided 38:6</p> <p>decision 53:1, 5</p> <p>decision-making 39:19</p> <p>decommission 45:14 47:21</p> <p>decontaminate 47:21</p>	<p>decontamination 10:6</p> <p>decrease 49:11</p> <p>dedicated 4:9 6:8 9:9</p> <p>dedication 11:23</p> <p>DEFENSE 1:3, 4 2:7, 10 3:23 14:13 17:15 23:19 25:15 29:19 36:24 40:20, 23 42:20</p> <p>defer 29:4 36:23</p> <p>define 22:22</p> <p>defined 19:17, 19</p> <p>definitely 45:23</p> <p>delay 4:7</p> <p>delays 41:4</p> <p>delegation 19:15</p> <p>deliberate 53:1</p> <p>delighted 3:10</p> <p>deliver 6:5 43:19</p> <p>delivering 43:17 44:18</p> <p>demanding 4:15</p> <p>demonstrates 9:6</p> <p>DEPARTMENT 1:2 2:9 3:5 6:3 10:20, 24 23:13 36:24 42:21 45:20, 23 51:21, 23 53:5</p> <p>depends 31:22</p> <p>deploy 6:13</p> <p>deployments 15:1, 2</p> <p>Deputy 2:15 3:11 14:2</p> <p>design 18:12</p> <p>designed 44:7</p> <p>designers 35:12</p> <p>designing 30:7</p> <p>despite 48:7</p> <p>detail 48:12</p> <p>details 11:20</p> <p>determine 53:3</p> <p>deterrence 6:18 20:19</p> <p>deterrent 15:1 21:6 32:16 37:1, 3, 8 43:1</p> <p>developed 15:11 43:9 45:2 52:12</p> <p>developing 15:8 16:1 41:2 43:8 51:20</p> <p>development 5:15 15:19 16:8 41:1</p>	<p>devices 49:8</p> <p>dialogue 41:20</p> <p>diesel-powered 50:11</p> <p>difference 20:7</p> <p>different 22:17 24:8 32:15 34:14 35:7, 13 36:17 39:14 49:12</p> <p>difficult 16:11</p> <p>diligence 52:24</p> <p>diligently 3:14</p> <p>direct 11:12 24:25 51:8</p> <p>directed 26:12</p> <p>direction 32:8, 11</p> <p>directors 23:17</p> <p>dirty 49:9</p> <p>discuss 20:2 32:5</p> <p>discussed 48:4</p> <p>discussion 38:17 42:23</p> <p>dispersal 49:8</p> <p>disposal 10:22 45:2 52:13 53:4</p> <p>dispose 19:16, 19</p> <p>disposed 19:7 52:17</p> <p>disposing 51:22</p> <p>disposition 9:15</p> <p>disruptive 34:11</p> <p>distinguished 14:5</p> <p>distorts 54:6</p> <p>diverse 12:2</p> <p>DOD 18:9</p> <p>DOE 18:22 52:14</p> <p>doing 22:10 30:9 31:9 32:21, 24 33:1 34:10, 14 40:12 48:22 49:2 50:16 52:23</p> <p>dollar 11:3</p> <p>double 18:7</p> <p>doubtful 24:13</p> <p>draft 40:11</p> <p>dramatic 20:5</p> <p>dramatically 9:10</p> <p>drastically 17:25</p> <p>drawing 49:14</p> <p>drifts 50:22</p> <p>drive 11:24</p> <p>drivers 18:1</p> <p>driving 11:12 26:10</p>
---	---	---	---	---

<p>drops 27:6 drum 18:22 dual 15:17 due 52:24</p> <p>< E ></p> <p>EA 18:4 25:8 earlier 30:22 33:12 39:23 earliest 6:7 early 5:8 18:11 26:5 30:12 33:4 earning 9:25 earth 54:4 easier 41:24 44:19 easy 51:9 economic 12:2 ECSE 23:23 effective 19:1 40:24 effectively 45:14, 16 effectiveness 5:3 effort 6:2, 4 7:2 15:18 efforts 16:4, 7 36:3 eight 4:8 22:12 47:19 elaborate 18:25 electric 50:15 electrical 9:18 44:8 electric-powered 50:12 elements 31:8 eligible 33:15 eliminated 6:24 eliminates 48:11 EM 9:11, 16 10:3, 13 11:2, 6 12:4 EM's 9:9 11:22 emphasize 6:19 employ 36:25 40:2 employees 4:10 22:11 employing 24:3 employment 35:21 enable 15:22 23:7 enabling 14:8 51:15 enacted 19:11 20:5 encourage 36:1</p>	<p>51:7 endeavors 35:18 endorsed 5:6 end-state 11:5 endurance 14:11 enduring 3:14 5:21 12:2 Energy 2:14 9:2 19:12 23:13, 20 44:7 45:1, 5 47:11 52:15 ENERGY'S 1:2 2:10 3:6 6:3 engaged 42:11 engagement 49:22 engineering 17:17, 20 18:12 24:8, 19 engineers 7:3 35:9 enhance 10:9 enriched 6:13 29:11, 18 ensure 5:1 6:17 26:2 27:23 ensuring 3:15 50:17 entails 28:17 enterprise 4:3, 8, 8 6:6, 8, 20 27:24 29:19 30:4 35:21 38:2, 3, 14, 22, 25 39:7, 9 40:6 42:10 entire 24:9 25:18 26:16 28:11 30:4 38:4 39:6 entirely 4:13 entity 54:4 environment 4:6, 15 14:15 16:11 51:10 Environmental 2:14 9:2, 7 16:4 52:2 53:9 envision 12:1 equipment 15:13 50:12, 12 equivalents 34:4 erosion 14:16 errors 41:25 essential 3:24 14:21 42:2 essentially 17:16 54:14 established 35:19 estimate 18:7 24:20</p>	<p>estimated 25:5 26:23 estimates 25:9 estimating 40:19 evaluating 10:20, 24 events 6:14 19:8 evolving 4:5 Exactly 25:14 28:12, 18 30:5 32:19, 20 33:2 37:9 examining 47:10 example 19:9 21:13 41:22 43:12 44:6 50:10 exceed 18:5 excellence 5:15 10:1 excepted 6:24 executing 3:14 existing 4:24, 24 22:14, 18 30:6, 9 31:2 53:8 exiting 18:16 exoscale 6:5 24:5 expenditure 54:5 expensive 36:17 experience 41:7 51:8 experiencing 41:2 experiments 23:5 24:1, 11 expertise 6:16 45:19 experts 6:14 explain 22:5 39:2 48:11 explicitly 19:16, 19 explosion 18:23 explosive 11:16 23:11, 12, 15 29:9 extended 46:24 extending 30:9 extension 3:25 6:11 23:9 30:19 40:21 extra 53:10 extraordinary 3:8</p> <p>< F ></p> <p>face 4:14 facilitating 15:18 facilities 16:3, 5 18:2 21:2 22:5</p>	<p>37:21 39:17 45:14 47:17, 18, 20, 22, 25 50:13 facility 5:18 9:15 15:22 17:19 19:8, 15 21:14, 16, 21, 21 22:1 26:17, 18, 18 37:23 38:17, 20, 20, 23 50:4 52:8 facing 33:21 fact 32:21, 23 33:1 37:21 40:2 41:16 43:20 47:5 48:7, 13 factors 39:18 fair 39:20 fall 36:1 familiar 24:21 Fantastic 27:25 far 16:10 28:13 35:23 FBI 49:19 feasible 17:18 feature 15:10 features 31:11 Federal 19:6, 10 34:4, 21, 23 52:22 54:1 feed 11:12 fewer 5:4 fidelity 27:17, 21 field 22:13 34:7, 7, 13, 17 36:4 fielded 30:12 fielding 30:7 41:4 figure 44:12 final 2:6 9:15 51:23 Finally 6:19 18:18 20:12 find 22:14 35:13 40:7 finding 35:7, 13 fire 9:18 18:22 first 10:2, 12, 13 15:7, 18 16:1 17:14 20:1 27:9 29:7 38:1 43:16 46:17 50:1 52:7 53:17 firsthand 9:16 FISCAL 1:5 3:5, 20 4:16 5:11 6:22 7:11 9:5 15:3, 5, 14 16:13 20:7, 23 27:1, 1, 4, 4, 5, 6, 17 48:7</p>	<p>Fischer 1:17, 18 2:1, 3 3:3 8:1 9:3 14:4 17:8 19:24 20:20 22:20 23:1, 3 24:11, 16 28:5 33:7 37:12 42:6 46:5 48:3, 18 49:24 53:15 54:20, 23 five 15:2 47:5 Flats 26:6 fleet 3:19 14:25 16:10 43:18 46:17, 20 47:7, 10 48:1 flexibility 6:25 flexible 7:10 flow 50:21 focus 4:1 48:18 focused 10:12 40:22 44:18 46:13 folks 28:25 32:1 Following 5:11 10:23 20:10 53:8 follows: 7:15 12:5 16:16 footprint 9:11 force 32:16 44:13 Forces 1:11 2:5 Ford 44:6, 16 foremost 17:14 forth 17:3 forward 2:18 5:7 7:12 11:6 16:15 19:22 21:23 22:23 24:2 28:10 52:20 fossil 45:6 found 17:20 fourth 2:5 fragility 41:14 Frank 3:11 free 6:13 45:6 friend 45:25 front 26:23 fronts 51:7 fruition 49:13 FTE 6:23 FTEs 34:3 fuel 15:21, 24 29:15, 24 30:2 46:8 full 2:18 11:17 full-time 34:3 fully 15:6 18:2 50:10</p>
---	---	---	--	--

<p>functioning 38:24</p> <p>fundamentally 25:18 26:2</p> <p>funding 3:22 11:14 20:8, 16 21:19 46:15 48:8</p> <p>further 4:7 49:15</p> <p>future 4:1 6:1 9:20 12:2 16:1, 10 22:16 24:3 32:16 38:15 46:15 47:9, 10, 23</p> <p>FYNCP 27:15</p> <p>FYNCPs 47:23</p> <p>< G ></p> <p>gain 6:25</p> <p>gaining 28:10</p> <p>gallons 10:5</p> <p>game 47:14</p> <p>gap 6:1</p> <p>gather 28:22</p> <p>gathered 52:22</p> <p>gears 40:17</p> <p>generation 7:3 35:8 44:8</p> <p>Georgia 35:22</p> <p>getting 10:12 18:2 20:12 34:16 43:4</p> <p>give 14:9 34:20 40:13</p> <p>given 18:16 27:7</p> <p>global 4:15 14:14 37:3</p> <p>glove 35:11</p> <p>go 17:2 33:11 38:24 40:20 43:7 46:22 47:1, 19 53:4, 10</p> <p>goal 26:15 39:22, 23, 25 40:2</p> <p>goals 49:16</p> <p>goes 18:19 53:24 54:9</p> <p>going 17:2, 5 23:24 25:22 27:12, 19 28:1, 21 31:7 32:1 33:14 35:23, 24 39:24 40:1, 20 41:15 42:2, 5 47:3, 5, 14 53:9</p> <p>Good 2:4 32:21 40:16 53:23 54:14</p>	<p>Gordon-Hagerty 2:12 3:1, 3 7:14 20:2, 20 22:25 23:2, 10 24:13, 18, 23 25:7, 11, 21 27:9 29:6, 17, 22 30:4, 18, 25 31:7, 16, 20 32:6, 19 33:11, 25 36:23 37:7, 9, 24 39:4, 21 40:3 48:4, 13, 20</p> <p>gotten 49:21</p> <p>government 7:5 10:17 19:6, 10</p> <p>Governor 19:13 45:25 46:1</p> <p>grand 19:5</p> <p>great 5:24 14:15 18:19 36:3, 12 46:22</p> <p>greater 48:12 51:20 52:13</p> <p>ground 20:13</p> <p>group 42:13, 24</p> <p>groups 10:24</p> <p>grow 35:17</p> <p>< H ></p> <p>handle 36:10</p> <p>handling 15:22 46:8</p> <p>hands 35:10, 11</p> <p>Hanford 11:13</p> <p>happen 52:6</p> <p>happens 17:4 53:18</p> <p>happy 23:16 27:9, 16 35:19</p> <p>hard 26:20</p> <p>haul 43:11</p> <p>Hawley 1:19 37:13, 14 39:1, 13, 22 40:16</p> <p>Head 42:17</p> <p>headquarters 22:13 34:6, 13, 18 36:4</p> <p>health 24:10</p> <p>hear 2:23 39:13 50:7</p> <p>HEARING 1:1 2:3, 5, 6, 18, 22 3:10 4:20 17:9, 14 19:22 36:16 55:3, 4</p> <p>hearings 10:9</p> <p>heavily 39:19</p> <p>Heinrich 1:19 2:21 9:14 13:1 14:5 17:1 19:25</p>	<p>24:17, 18, 24 25:9, 14, 21 26:14 27:25 38:18 49:25 50:1 51:6, 14, 18 52:14 53:12 54:20, 21</p> <p>Heinrich's 37:19</p> <p>held 6:12</p> <p>help 10:4 33:22 45:3</p> <p>helped 9:8</p> <p>hey 50:20</p> <p>hidden 43:13</p> <p>high 5:2 6:1 11:16 14:20 24:4 46:13</p> <p>higher 25:23</p> <p>highest 4:21 22:6 38:6</p> <p>high-level 45:17</p> <p>highly 6:13 24:8, 13 29:10, 18 52:16</p> <p>hire 22:14 36:6, 7, 8</p> <p>hiring 6:25 34:17, 18</p> <p>historical 11:22</p> <p>history 9:20 10:2</p> <p>hit 40:2</p> <p>holding 17:8</p> <p>home 28:25</p> <p>Hon 1:16 2:1 3:1 9:1</p> <p>honor 3:7</p> <p>Honorable 2:12, 13</p> <p>hope 43:5 45:19</p> <p>hopefully 17:5 49:3 54:12</p> <p>horizon 37:4</p> <p>host 12:1</p> <p>House 49:21</p> <p>huge 44:1, 2</p> <p>< I ></p> <p>IDA 17:16, 18, 24 26:19</p> <p>Idaho 15:22 46:9</p> <p>idea 34:20</p> <p>identifying 11:4</p> <p>II 9:8</p> <p>imagine 51:16</p> <p>immediate 50:16</p> <p>impact 20:16 52:2, 20</p> <p>impactful 11:4</p>	<p>impeding 45:21</p> <p>imperative 36:25</p> <p>implement 11:17 51:24</p> <p>implementation 53:2</p> <p>importance 20:15 23:6 42:12</p> <p>important 5:23 24:8 28:22 32:4 33:23 36:22 39:2, 18 41:10 42:19 43:6, 14 44:22 46:19 47:8, 25 48:1, 19, 20, 24 53:11</p> <p>importantly 17:23 19:3</p> <p>impression 38:8</p> <p>improve 16:9 43:17 50:9</p> <p>improved 47:12</p> <p>improvements 28:11 51:1</p> <p>improving 11:4</p> <p>inception 9:9</p> <p>incident 39:6</p> <p>include 38:19</p> <p>included 11:14</p> <p>includes 10:16 11:3</p> <p>including 9:18 10:21 11:10 14:23, 25</p> <p>increase 4:17 20:5, 13 23:5 27:20 32:3 48:9, 14</p> <p>increases 22:15 41:21</p> <p>increasing 10:14 14:14 31:9 33:17 36:11</p> <p>incredible 14:10</p> <p>incredibly 40:4 48:20</p> <p>incremental 43:3</p> <p>independent 25:15</p> <p>indispensable 3:8</p> <p>induce 41:25</p> <p>industry 28:14, 15 41:11, 13</p> <p>inform 24:10</p> <p>information 54:24</p> <p>informed 41:3, 8</p> <p>infrastructure 3:21, 24 9:17 16:3 20:18 21:1, 4, 10</p> <p>ingredient 29:9</p> <p>inherent 41:4</p> <p>initiate 11:13, 14</p> <p>initiatives 49:19</p> <p>insignificant 42:17</p> <p>Institute 10:1 17:15 25:15</p> <p>insufficiently 48:5</p> <p>integrated 7:2</p> <p>intend 30:14</p> <p>intended 47:1, 2</p> <p>intentions 4:14</p> <p>interagency 49:18</p> <p>interest 11:19</p> <p>interesting 35:15</p> <p>interim 11:17</p> <p>interpretation 10:25</p> <p>introducing 31:10</p> <p>intrusive 41:17</p> <p>invalidated 17:16</p> <p>invest 47:13</p> <p>investment 3:21 4:12 5:12 6:21</p> <p>investments 6:20 16:7 54:7</p> <p>invests 15:25</p> <p>involved 28:20 42:4</p> <p>irradiators 48:25 49:1, 5</p> <p>Isolation 9:14 18:21 51:11</p> <p>issue 17:14, 23 18:4, 8, 16 26:22 30:19 42:11 44:25 53:1</p> <p>issues 10:16 17:13 22:11 32:22</p> <p>its 2:7 6:21 10:24 21:17</p> <p>< J ></p> <p>James 2:15 14:1</p> <p>January 34:19</p> <p>jeopardy 39:11</p> <p>job 10:12 17:12 33:18 42:11 51:9</p> <p>jobs 34:22, 24</p> <p>joining 50:2</p> <p>joint 6:2</p>
---	--	---	--

<p>Jones 1:19 33:8, 9 36:12, 15 37:6, 8, 10</p> <p>JR 14:1</p> <p>judicious 4:24</p> <p>jump 17:2 26:22</p> <p>jurisdiction 19:12</p> <p>justify 26:21</p> <p>< K ></p> <p>keep 3:24 6:15 44:25</p> <p>key 9:15 15:25 46:9</p> <p>kilograms 31:17</p> <p>kind 19:6 39:7 44:15 50:16, 23</p> <p>kinds 34:24</p> <p>King 1:19 42:7, 8 44:1, 22 45:16, 24 46:3, 5 53:16, 17, 23</p> <p>know 17:24 18:4, 21 19:2 42:23 45:25 46:12 52:19</p> <p>known 21:16 28:15 49:9</p> <p>Korea's 4:14</p> <p>< L ></p> <p>laboratories 4:9 18:13</p> <p>Laboratory 5:10 6:5 16:3 21:25 23:17 24:6 40:5</p> <p>labs 22:12 34:12, 16 35:1 36:3 47:25</p> <p>lack 18:24</p> <p>laid 26:12</p> <p>Land 19:11, 17, 20</p> <p>land-based 46:8</p> <p>LANL 26:25</p> <p>large 47:21 49:1 52:23</p> <p>larger 41:9</p> <p>large-scale 10:8</p> <p>largest 4:17 48:14</p> <p>lasts 43:23</p> <p>Laughter 36:14 53:20, 22</p> <p>launched 7:2</p> <p>law 19:11</p> <p>Lawrence 6:4 24:5</p> <p>lead 15:13, 13</p>	<p>leaders 11:23</p> <p>learned 41:15</p> <p>legacy 9:7 16:5</p> <p>legal 51:16</p> <p>legislated 17:21</p> <p>legislation 16:12 51:24</p> <p>lending 6:16</p> <p>LEPs 24:12</p> <p>letters 23:18</p> <p>level 10:25 20:5, 8, 16 51:21 52:17, 18</p> <p>levels 33:13 48:10</p> <p>liabilities 10:13 16:4</p> <p>liability 10:11</p> <p>licenser 52:10</p> <p>life 3:24 6:11 23:9 30:9, 19 40:21 43:10, 12, 18, 20, 22 44:3 46:25 54:16</p> <p>lifecycle 18:1, 5 24:20 25:5, 20, 23, 24, 25 38:19</p> <p>life-of-ship 15:10</p> <p>life-of-the-ship 43:19 47:12</p> <p>lifetime 44:14</p> <p>lifting 34:3</p> <p>light 23:14</p> <p>line 20:7 26:25 48:9</p> <p>lines 11:15</p> <p>Lisa 2:12 3:1</p> <p>little 28:16 33:20 39:23, 25 50:6</p> <p>Livermore 6:4 18:13 24:5 36:8</p> <p>local 50:24</p> <p>location 22:2 38:13 39:5, 6, 9</p> <p>locations 25:22 29:20, 23</p> <p>long 10:16 15:13 20:12 21:10, 17, 18, 22 43:11 52:16</p> <p>longer 22:21, 22 43:9, 12 47:19</p> <p>longstanding 16:14</p> <p>long-term 15:22</p> <p>look 2:18 7:12 16:14 19:22 26:25 34:9 38:22 44:6 47:1</p>	<p>looking 17:25 18:3 24:2 27:22 32:15 36:6, 7, 8 48:23 50:14 52:24</p> <p>Los 5:9, 13 11:14 18:15 21:25 25:2 26:7 27:11, 20 35:2, 2 36:6 38:10, 17 40:4, 8, 13 47:4</p> <p>lose 39:9</p> <p>lot 28:12 32:1 42:17, 18 45:6</p> <p>lots 32:2</p> <p>low 11:12 51:21 52:17</p> <p>< M ></p> <p>ma'am 48:2</p> <p>ma'am 46:11</p> <p>machines 49:2</p> <p>Madam 8:1 9:9 28:7 33:6, 9 37:11, 14 42:8 46:4 53:14</p> <p>main 5:17 21:20 22:20</p> <p>Maine 42:13 45:18</p> <p>maintain 21:4, 6 22:1, 18 26:8 30:5 37:5</p> <p>maintaining 5:2 38:9, 14</p> <p>maintenance 44:10</p> <p>major 6:14 14:22 18:14, 22 20:24 21:23 39:5, 6 42:23 46:6 54:7</p> <p>making 28:20, 23 51:1 54:7</p> <p>manage 41:14</p> <p>Management 2:15 9:2, 25 10:15 40:24 41:3</p> <p>managing 40:21</p> <p>Manhattan 6:7 21:4, 17</p> <p>manner 19:1</p> <p>manning 44:11</p> <p>manufacture 41:24 44:19</p> <p>manufactured 4:23</p> <p>manufacturing 4:21, 25 5:13</p>	<p>15:14 38:7</p> <p>margin 4:7</p> <p>Marie 2:13 9:1</p> <p>maritime 14:20</p> <p>mark 9:14</p> <p>marked 14:15</p> <p>markup 2:7</p> <p>massive 20:9</p> <p>material 29:8, 19 30:22 31:14</p> <p>materials 29:10, 11, 12 35:6 49:8</p> <p>matter 38:21 40:5</p> <p>mature 20:14</p> <p>maximize 40:7</p> <p>mean 29:2 42:18 54:10</p> <p>measure 11:17</p> <p>measures 44:16</p> <p>meet 2:9 5:5 7:5 20:18</p> <p>member 2:21 9:13 14:4</p> <p>Members 1:18 3:3 9:3 14:5 17:5</p> <p>men 6:8 21:5</p> <p>mentioned 21:13 24:5 33:12 38:16</p> <p>Merced 35:23</p> <p>merely 39:16</p> <p>met 1:15 42:13</p> <p>Mexico 5:10 9:13 18:19 19:6 35:3</p> <p>middle 2:20 50:22</p> <p>midst 27:7</p> <p>mile 53:10</p> <p>military 5:5 32:6, 7</p> <p>million 5:12 9:25 10:5 15:4 21:20 44:16</p> <p>mindset 22:9</p> <p>miners 50:20 51:5, 7</p> <p>minimize 40:7</p> <p>mining 50:13</p> <p>missile 15:9 18:14</p> <p>mission 7:1 11:24 12:4 43:24</p> <p>missions 3:14, 21 5:21 7:6 14:11</p> <p>mitigation 10:10 40:1</p> <p>model 11:5</p>	<p>modernization 20:11 21:1, 10 22:21, 22 42:13 43:2 54:9</p> <p>modernizations 32:25</p> <p>modernize 4:24 6:20 21:9 31:3 32:14 36:18, 22</p> <p>modernizing 38:19 40:20</p> <p>modest 4:25</p> <p>modules 25:2</p> <p>money 26:21 40:22 42:14 44:15, 17</p> <p>monitoring 39:8</p> <p>month 9:13 50:3</p> <p>months 9:24 35:25</p> <p>moratorium 23:12</p> <p>Mountain 19:9 45:10</p> <p>move 52:19</p> <p>movement 50:25</p> <p>moving 22:23 28:10 40:25</p> <p>MOX 48:11</p> <p>multiple 31:18</p> <p>< N ></p> <p>narrow 40:22</p> <p>nation 30:7 53:11</p> <p>nation's 5:14 6:9 7:4 24:20</p> <p>National 2:7, 12 3:2, 6, 9 5:9, 18 6:5 14:2, 11, 13, 13 15:6 21:25 23:25 24:6 35:20 40:5, 23 41:10 45:21 46:13 53:8</p> <p>Natural 45:1, 5 49:11</p> <p>Naval 2:16 3:12 14:2, 8, 17, 24 15:3, 21, 23 40:25 46:10, 18</p> <p>Navy 14:9, 18, 21 15:12, 24 16:8 29:14 41:10 42:3 44:14 46:22 47:10, 15</p> <p>Navy's 3:19 6:17 14:22 15:7</p> <p>nearly 5:12</p>
---	--	---	---	--

<p>14:22 NEBRASKA 2:2 necessarily 47:3 necessary 4:11 5:1 28:11, 25 29:9 38:1 40:14 53:3 need 22:9, 15, 15 23:15, 22 28:17 29:1, 3, 12 30:3, 23 31:2 32:1, 3, 15 33:2 34:9 35:18 46:23 47:11, 13, 19, 20 51:23 52:6, 7, 8, 10, 11 needed 30:2 needs 29:15 45:13 Nevada 23:25 never 47:1, 2 new 4:13 5:10 6:17 9:13 10:21 11:5 15:8, 17 18:19 19:6 22:11 24:2 25:19 30:7, 23 31:10 33:2, 23 35:3, 5 36:2 37:22 41:4 49:18 50:9 51:3, 22 52:11 newly 4:23 nice 37:17, 24 NNSA 2:16 3:8, 13, 21 4:22 5:3, 24 6:2, 23 7:2, 8, 10 17:16 20:4, 7, 25 23:13 25:16 27:24 NNSA's 4:11 5:6, 21 20:10 24:18 nomination 4:20 non-defense 51:12, 15 nonpartisan 10:24 nonproliferation 4:18 21:7 48:6, 9, 15 49:14, 16 non-radioactive 49:1 North 4:13 35:25 Northern 35:3 note 11:20 notice 1:15 52:22 noticed 40:18 NPR 5:3</p>	<p>NRC 51:22 52:6, 9 Nuclear 2:13 3:2, 6, 16, 17, 17, 18 4:2, 4, 6, 7, 13, 25 5:6 6:8, 14 9:7 14:2, 21, 25 15:20, 23, 24 20:18 21:6 22:4, 18 26:3, 9, 13 28:24 29:4, 8, 12, 15 30:6, 6, 8, 8, 9, 10, 22 31:10, 21, 23 32:10 35:20 36:18, 22, 25 38:14 39:6, 11 42:15 43:9 45:4, 6, 12, 17 46:19 51:19 52:16 nuclear-powered 14:9, 23 16:2 number 9:17 15:7 17:13 20:22 22:11, 16 24:7 25:7 27:7 33:25 35:15 46:18, 24 47:8, 9, 15, 17, 17, 21 48:22 49:12 52:23 numbers 17:24 24:21 25:23 26:11 27:14, 18, 19 38:18 nuts 33:13 < O > Oak 10:7 objectives 14:22 46:10 obtaining 22:10 Obviously 51:7 October 52:18 of-a-kind 50:4 offer 34:23 54:17 offered 34:22 Office 1:16 6:3 10:17 offices 22:13 34:7, 8, 13, 17 36:4 Oftentimes 48:25 49:13 of-the-ship 43:21 Ohio 35:24 Okay 31:13 old 21:3 22:1 38:18 older 21:3</p>	<p>oldest 30:10 once 43:22 one-of-a-kind 19:7 ones 36:24 ongoing 50:7 on-site 35:21 open 2:5 OPENING 2:1, 23 17:2, 6 19:2 20:3 21:13 operability 27:23 operate 17:19 24:6 46:19, 21 47:2 operating 46:17 50:22 operation 29:4 50:3 operational 18:2 19:3 50:10, 17, 24 operations 10:6 14:17, 25 18:24 35:6 47:6 54:3 operators 15:20 opportunities 10:18, 21 12:2 20:22 35:22 40:7 opportunity 3:4 7:11 9:4 12:3 14:6 38:22 49:7 option 25:16, 17 52:13 options 10:22 18:5 24:21 25:10 26:19 39:14 52:2 order 2:3 6:24 23:22 32:16 36:10 37:2 45:11 organizations 35:1 outset 38:16 outside 10:24 28:15 out-year 26:23 48:8 out-years 48:23 overall 10:11 overhauling 15:16 oversight 10:16 41:16, 17 42:2 ownership 44:3, 21 < P ></p>	<p>p.m 1:15 55:4 packaging 15:23 panel 54:23 paradigm 35:18 36:5 parallel 10:4 40:8 park 54:5 part 2:19 29:18 37:8 42:10 particular 26:25 54:9 particularly 54:7 partners 41:18 partnership 41:18 42:1 parts 52:6 pass 45:24 passionate 36:13 path 5:7 11:6 20:10 21:12, 23 patrols 15:1 pay 54:13 paying 54:5 pending 45:8 people 3:22 7:7 10:15 28:12, 16 33:23 35:10, 11 36:7, 7, 8, 9 42:13, 21, 24 percent 14:22 15:5 20:7 21:2, 3 22:8 33:14 40:19 42:15 44:7, 9, 12 perform 17:12 performance 6:1 24:4 period 25:25 54:14 perpetuity 27:14 Perry 45:25 46:1 personnel 6:24 7:1 34:7 PF4 25:2 27:23 PF-4 22:1 phase 41:1 picture 10:13 piece 39:1 pieces 52:6 Pilot 9:15 18:21 51:12 pipeline 35:5, 13 36:1 pit 4:21, 25 5:9, 13 22:2 25:22 26:4, 25 27:11 28:18 31:3, 13, 14, 20 33:2</p>	<p>37:21 38:7, 9 39:7, 23 40:9 pits 4:23, 24 5:4 17:20 18:3 25:17 26:7, 11, 15 27:3, 13 28:13 29:21, 25 30:24 31:18 32:1, 4 38:11 40:12, 15 place 27:10 49:18 plan 23:24 40:9, 11 planned 11:20 15:14 20:11 23:24 planning 16:6 plans 34:15 40:8 Plant 9:15 15:8, 13 18:21 26:6 44:7, 10, 11 51:12 plants 4:9 14:9 15:24 22:12 34:13, 16 35:1 36:3 platform 6:6 24:7 platforms 46:24 playing 37:3 please 45:3 pleased 18:9 plenty 32:2 plume 11:16, 18 plus 6:12 25:2 29:10 plutonium 3:23 4:21 5:13, 14 17:14 24:20 26:4, 18, 24 29:7 32:22, 22 33:2 35:6 38:9, 17 40:9 point 18:6 27:2 32:21 points 22:20 poke 45:20 policy 45:21 51:21 53:9 political 4:5 Pilot 9:15 18:21 positives 45:7 possible 15:11 24:12 37:2 51:10 55:2 possibly 40:13 Posture 4:4, 6 potential 10:18 potentially 52:20</p>
--	---	---	---	---

<p>power 5:24 14:15 29:10 45:4, 6, 13 precisely 10:11 31:3 prepared 7:14 12:5 14:19 16:16 Present 1:18 3:4 20:25 26:3 34:5 President 23:19 32:11 President's 3:5, 20 presiding 1:17, 19 13:1 19:24 pretty 40:22 previous 17:22 price 25:19 primary 29:7 31:21 35:12 prime 21:17 42:4 primer 28:8, 21 priorities 3:22 7:1 20:25 22:6, 17 42:19 46:7 priority 4:21 15:6, 8 38:6 46:13, 13 probably 35:25 problem 18:10 problems 50:7 process 29:19 39:19 52:21 53:6, 7 54:1 processed 10:5 processing 5:18 10:3, 4 11:15 15:23 21:14, 21 procurements 11:5 procuring 15:12 produce 17:19 25:17 32:1 produced 26:6 29:21 producing 5:4 18:3 production 5:7, 9 9:7 25:22 26:4, 25 27:12 28:17, 24 30:2 32:4 33:3 37:21 38:7, 9 39:7, 16, 23 41:1, 21, 22, 23 program 6:11, 17 11:9 18:16, 17 21:18 23:14</p>	<p>28:11 30:20 35:4 41:3, 8 43:18 44:4 48:11 49:10 PROGRAMS 1:3 2:10 3:25 4:19 20:11, 14 21:8 23:9 35:15 40:21, 24 48:6, 16, 19 49:12, 14, 18 Progress 9:12, 17 11:10 20:13 Project 6:7 9:25 10:1, 15 15:7, 16, 21 21:4, 17 46:8 54:17 projected 20:6 48:10 projections 48:8 projects 9:17 10:19 15:6 proliferation 3:17 21:8 48:16 promote 45:5 prongs 36:18 proposal 52:18, 19 propulsion 3:18 14:9 15:8, 13, 24 43:9 44:10, 11 proud 5:19 prouder 7:7 proudly 3:7 provide 14:8 21:6 33:18 46:20 54:25 provided 4:4 7:10 11:21 24:19 provides 11:3, 7, 9 29:9 providing 3:18 15:19 27:21 public 6:14, 15 31:25 42:12, 22 52:19 pulling 40:6 purpose 11:24 pursuant 1:15 pursuing 4:13 purview 45:10 put 11:6 27:17 35:10, 11 38:12 39:10 40:9 46:14 49:18 52:22 putting 38:8 39:4</p>	<p>< Q > QFR 54:22 quality 44:18 50:8, 9 quantify 43:14 question 20:21 36:13 37:19, 20 41:6 43:6 45:4, 8, 13, 20 51:16 53:19, 24 questions 7:13 16:15 19:18, 23 20:1 28:2 54:21 55:1, 1 quite 17:21 40:22 < R > race 42:15 rad 35:4 radioactive 10:25 11:11 35:6 52:16 radiological 6:15 35:5 49:6, 8 raise 17:13 32:21 raised 10:16 raising 44:25 ramp 27:2, 8 ramping 27:3 range 17:20 ranger 54:5 ranking 2:20 9:13 14:4 rationale 43:2 RCRA 19:14 reach 19:9 39:25 reaching 39:22 reactor 15:10, 11, 15, 17, 18 16:1 41:2 43:19 44:7 46:7, 8 Reactors 2:16 3:12 14:2, 8, 24 40:25 46:10, 18 Reactors' 15:3 read 51:18 real 18:1 29:1 44:14, 17 realistic 4:4 realized 41:9 really 28:22 32:4 33:23 35:18 36:5, 9 39:1 41:12 42:4, 9, 21 43:6 45:21 48:19 50:23 51:2 54:11</p>	<p>reason 31:25 reasonable 10:20 rebuilding 18:8 recapitalize 5:7 41:10 47:20 recapitalizing 4:7 16:2 47:24 RECEIVE 1:1 2:9 receiving 21:18 53:7 reclassification 19:18 reclassify 52:15 recognize 14:14, 16 25:21 Recognizing 25:23 recommendations 10:23 record 2:19 36:20 recover 21:14 Recovery 19:14 recreating 18:10 recruit 3:25 7:3 recruiting 33:21 redone 30:23 reduce 16:4 44:11 reducing 3:16 9:11 reduction 15:4 redundancy 38:13 39:1, 18 redundant 38:3 reemergence 14:15 referred 38:18 reforms 11:4 refuel 43:11 47:5 refueled 43:22 refueling 15:16 refurbished 5:2 regard 29:15 45:4 regarding 28:3 regardless 6:19 Register 52:22 regulations 52:11 regulator 52:9, 9 regulatory 11:4 51:19 52:10 relationship 42:1 reliability 3:15 14:10 reliable 7:10 15:23 23:21 rely 4:23</p>	<p>remain 4:14 5:14 remaining 40:17 remarkable 6:10 remediating 16:4 reminder 26:4 removal 49:5 removes 52:16 renewed 5:24 11:8 replace 32:13 replacement 26:10 33:1 replacing 31:1 38:20 48:25 report 5:19 17:15, 18 52:1, 4 reporter 53:18 represent 7:7 representation 54:16 representing 3:7 represents 4:17 repurpose 38:23 REQUEST 1:4 3:20 4:11, 17 9:5 11:7, 9 15:3, 5, 5 16:13 20:3, 23 21:19 47:23 48:8 49:23 requested 6:22 20:8, 16 23:4 34:2 48:14 requesting 6:23 21:12 require 51:14 required 40:9 44:9 requirement 26:17 52:1 requirements 5:5 20:19 21:11 26:12 27:10, 22 32:7, 7, 9, 10 38:13 40:14 46:15 52:11 requires 41:14 research 5:15 15:17 16:8 22:3 reserve 18:3 26:7 resides 53:6 resiliency 26:3 38:2 39:18 resilient 4:2 38:3, 24 39:10 resist 54:17 Resource 19:13 35:7</p>
--	---	--	--	---

<p>resources 7:1 11:7, 9 21:11 45:1, 5 respectfully 16:12 responsibilities 33:17 responsible 18:20 responsive 4:2 20:17 rest 27:22 result 16:9 25:23 retains 19:13 retirement 33:14 retirement-eligible 22:9 returning 23:8 returns 2:22 REVIEW 1:4 4:4, 6 revitalize 3:23 Ridge 10:7 right 2:20 22:17 30:5, 11, 13, 17, 19, 20 31:4 32:22 34:5 36:11, 12, 19 37:9 39:2 40:10 42:3, 5 43:1 44:1 50:22 52:21 rightly 48:17 rigor 16:7 risk 10:10 risks 40:7 River 5:10 9:22 10:2 11:11 37:23 road 52:12 robust 31:11 37:2 Rocky 26:5 rods 29:24 role 33:24 Room 1:16 2:22 roughly 44:9 round 20:1 28:2, 3 Rounds 1:19 28:6, 7 29:14, 20, 25 30:13, 21 31:5, 13, 18, 24 32:12 33:5, 7 routes 53:4 routinely 6:13 rule 51:20, 22 52:3 rules 53:8 Russell 1:16</p>	<p>Russia 4:12 < S > S8G 46:7 safe 6:15 19:1 23:20 safely 9:24 10:19 52:17 safest 51:9 safety 3:15 5:1 10:10 31:9 45:15 sailors 46:21 salt 10:3, 5, 6 Sandia 36:7 Savannah 5:10 9:22 10:2 11:11 25:1, 6 37:23 save 54:21 saves 43:10 saving 9:25 44:2, 15 savings 16:9 43:13 44:1, 5 saw 9:16 saying 18:20 32:12 39:13 scattered 45:17 schedule 3:25 5:20 6:12 9:24 23:1 51:3 Science 6:3 science-based 23:13 scientific 5:22 23:23 24:8 scientists 7:3 35:9 sea-based 6:17 second 2:21 15:16, 19 22:7 28:1, 3 secondary 29:11 31:22 35:12 Secretary 2:14 3:12 8:1, 2 9:2 20:2 23:19, 19 24:18 28:2 33:11 44:25 48:4 50:1 sector 40:22 sectors 36:17 secure 23:20 Security 2:13 3:2, 6, 9, 15 4:3, 8, 15 5:1, 18 6:8, 14 14:3, 11, 13, 14 23:25 31:9 35:20, 20 see 18:19 36:1 37:3, 17 38:3</p>	<p>46:9 47:22 49:11, 22 51:2 seeing 44:19 52:25 seen 40:10 selected 52:8 Senate 1:9, 16 19:15 SENATOR 2:1, 3, 21 8:1 13:1 17:1 19:24, 24 22:20 23:1, 3 24:11, 16, 17, 18, 24 25:9, 14, 21 26:14 27:25 28:5, 5, 6, 7 29:14, 20, 25 30:13, 21 31:5, 13, 18, 24 32:12, 21 33:5, 7, 7, 8, 9 36:12, 15 37:6, 8, 10, 12, 12, 13, 14, 19, 24 38:18 39:1, 13, 22 40:16 42:6, 7, 8 44:1, 22 45:16, 24 46:3, 5, 5 48:3, 18 49:24, 25 50:1 51:6, 14, 18 52:14 53:12, 15, 16, 17, 21, 23 54:20, 20, 21, 23 Senators 1:18 sense 11:8 27:7 37:4 39:15 sensitive 41:21 sent 23:18 separate 54:4 series 17:4 serious 17:21 18:16 service 2:17 6:24 17:12 37:18 Services 1:12 session 28:19 set 20:19 sets 32:8 setting 4:1 seven 22:12 47:5 share 3:10 45:19 shift 40:17 ship 15:13 shipbuilding 41:11, 13 ships 46:22 show 37:2 shuttered 5:8 26:5 side 45:3 48:18</p>	<p>50:23 sides 11:23 significant 10:7 23:4 similar 18:10 simple 50:16, 23 simply 30:22 53:8 single 31:20 38:8, 13 39:5, 6, 9 singular 22:2 sir 41:6 43:15 44:5 site 5:10 9:12, 22 10:3, 3, 8 11:11 18:22, 23 38:9 sites 4:9 9:10, 11 12:1 22:12 23:25 34:13, 16 35:1 36:3 45:17 skeptical 42:25 slide 24:22 slots 42:17 soil 9:23 solved 45:13 soon 55:2 sooner 10:19 sort 34:11 40:1 43:13 45:12 46:15 source 35:8 sources 49:1, 2 South 5:11 9:21 38:23 space 31:12 spaces 50:25 specific 33:22 53:3, 4 specifically 23:6 specifics 28:14 speed 14:11 spending 20:9 40:20 42:14 48:9, 11 spent 15:21, 23 46:8 spread 24:9 SR-222 1:16 SRS 10:6 staff 33:14 34:6 staffed 18:17 staffing 18:1 33:13, 20, 25 34:10, 15 36:21 stakes 4:12 standard 31:15 start 28:18, 23, 25 29:6 35:3</p>	<p>37:16 41:12 42:17 started 20:12 State 19:4, 5, 10 25:4, 9 30:8 35:24, 24 48:17 49:13 stated 4:20 5:17 17:18 STATEMENT 2:1 3:1 7:14 9:1 12:5 14:1 16:16 17:3, 6 19:2 20:3 21:13 52:2 statements 2:19, 23 state-of-the-art 5:22 23:22 states 4:6 6:21 29:23 35:17 36:2 37:1 49:3, 6, 11, 19 53:6, 7 statute 51:15 statutory 10:25 stay 5:24 stealth 47:12 step 10:7 steps 11:2 stewardship 23:14 stock 32:2 stockpile 3:16, 24 4:25 5:3 22:4, 19 23:7, 14, 16, 20 24:10 26:3, 9 30:6, 10, 11 31:2 32:10 stop 11:19 stopped 23:11 stopping 33:22 stovepipe 34:14 STRATCOM 20:19 23:18 26:12 32:8 Strategic 1:10 2:5 15:1 32:9 40:8 42:21 strategies 40:1 strategy 5:11 14:13, 14 49:22 streams 10:3 53:3 stretch 39:24 strikes 43:13 strong 5:16 7:9 stronger 10:15 strongly 49:16 students 36:2 studies 32:24</p>
---	---	--	--	--

33:16 53:3	systems 9:19 10:4 18:14 30:3 31:11 32:15	TESTIMONY 1:1 2:9 11:21 19:22	16:7 17:13 19:21 24:22 33:10, 12 43:20, 25 54:24	underground 23:11, 12, 15 50:8, 12
study 26:19	< T >	testing 23:8, 11, 12, 15	today's 17:8	underpinned 5:21
studying 22:21	tackle 41:22	Texas 35:23 52:8	tomorrow's 7:5	understaffed 33:16
Subcommittee 1:10, 15, 17, 18 2:11 3:4 9:4 14:5, 7 16:6 18:18	tag 25:19	Thank 2:17 3:4 7:9, 13 8:1 9:4 14:6, 7 16:13 17:1, 8, 10 19:21, 24 23:3 24:16, 23 28:5, 7 29:6 33:5, 6, 7, 9, 10 37:10, 11, 12, 14, 15, 17, 18, 25 42:6, 8 44:22 45:24 46:3, 4, 5 48:3, 13, 20 49:24 50:2 53:14, 15 54:19, 23	tools 33:19 40:13	understand 16:11 26:15 28:12, 16, 25 30:13 31:5 33:15 34:21 40:25 41:19 51:19
Subcommittee's 2:5 12:3	Taiwan 6:12	Thanks 5:16 20:20 28:4 41:6	top 20:6 48:9	understanding 39:20 52:14
subcontractors 42:5	take 2:21 28:8 32:8 43:5 44:9, 12, 15 45:23 47:6 49:7	thing 19:13 32:5	topic 44:24	undertake 24:1
subcritical 23:5, 25	taken 34:9	things 33:22 34:2 35:20 44:19 46:23 48:22 50:8, 16, 17, 19, 22, 24	total 25:25 44:3, 20	undertaken 6:4 35:2
submarine 15:1, 9 43:12, 20, 23 46:25	takes 41:16, 18	think 22:20 26:20 28:9 32:4 38:23 39:14, 24 42:10, 20 43:2, 6, 13 44:2, 23 45:21 48:19 50:20 52:23 53:18 54:4, 11	totally 45:22	undertaking 5:19 32:24, 25 40:10
submarines 3:19 14:24 29:16 41:11 43:24 47:4	talk 20:15 23:5 28:15 29:25 31:12, 13, 24 33:20 36:16 44:23 46:9	third 15:21	touched 19:2	undertaken 6:4 35:2
submission 47:22	talked 36:20 50:5	thoughts 45:9	training 15:17, 20	undertaken 6:4 35:2
submit 52:1	talking 28:12, 13, 13, 18, 23 30:1, 2 32:17, 17, 19 36:9 47:11 53:25	thousands 36:9	trajectory 21:9, 22	undertaken 6:4 35:2
submitted 27:16 52:3	tank 11:11, 13	threat 3:16	transparent 53:7	undertaking 5:19 32:24, 25 40:10
success 19:8	target 32:7	threats 6:16 37:3	transuranic 9:16 11:15 51:12	undertaking 5:19 32:24, 25 40:10
successes 11:8, 22	tasked 18:14	three 3:14, 18 15:6, 25 20:24 23:17 36:18 37:6, 7 42:9 44:8 46:6, 13, 15 47:17 48:2	treatment 10:21 11:13	undertook 23:13 34:19
successful 40:14 41:15	tasks 46:14	time 2:23 5:23 10:2, 13 11:19 17:5, 11 20:12, 25 26:6 28:1, 8 34:5, 22 36:1, 20 40:17 46:6	tremendous 41:16	unexpected 20:9
succinctly 36:16	taxpayer 10:11 26:21	today 2:9, 18 3:7 4:2 7:8, 12 9:4 14:6, 22	triad 36:18, 22, 25 37:5 40:20	unfamiliar 21:2
suggest 20:5	team 3:8, 8 6:9 14:8 40:6		Trident 46:25	unheard 34:22
suite 24:2	Tech 35:22		tritium 26:18	uniformity 11:24
Super 6:15	technical 46:20		true 47:4	unique 7:6 19:7
support 5:16 7:9 12:4 15:12 16:13, 14 21:7 23:8 28:10, 22 35:16 45:12 46:17, 21 47:7, 23 49:19	technician 35:4		Truman 44:24	United 6:21 29:23 35:16 36:2 37:1 49:3, 6, 10, 19
supported 14:25	technicians 7:4 35:5, 10		truth 49:15	universities 35:16
supporting 14:8 41:13	techniques 45:2		try 43:16 54:13	University 35:22
supports 15:6, 7 48:1	technologies 10:21 15:11 41:4 45:2 47:9, 13		trying 19:16 22:22 26:15 27:6 31:4 35:7, 12 36:5 38:10 41:9 51:2	unmatched 14:10
suppression 9:18	technology 5:25 16:1 34:11 43:17		turned 50:17	unparalleled 6:16
sure 41:20 46:20, 22	techs 35:4		two 3:16 10:3 11:14 18:12, 14 25:22 47:9, 16	untenable 38:5
surety 31:11	tell 36:21		two-site 5:8	upgrade 30:14
surge 20:9	term 10:25 53:17 54:8		types 32:15	upgrades 9:18
surveil 39:11	terms 31:16 45:15 47:14 53:2		< U >	upgrading 30:14
surveillance 22:3 39:8	terrorism 3:17		U.S 1:9 2:1 3:9, 18, 23 6:17 21:6 22:4 47:15	upset 19:13, 15, 15
sustainable 11:6 14:19	terrorist 49:7		unable 39:10	uranium 5:17 6:13 21:14 26:17 29:11, 17, 18
switching 50:11, 14	terrorists 49:7		unacceptable 21:9 54:11	urge 16:12
system 30:11 31:19, 21 50:9 51:3	testified 3:13		unanswered 45:4	urgency 11:8
	testify 7:12 14:6 17:11		uncertain 4:5	urgent 22:13
			unclassified 28:19 31:16	use 4:24 29:18 30:22, 23 31:8, 18
			unclear 4:14	USN 14:1
			underestimated 17:25	< V >
			undergoing 22:17	valid 25:16
				Valle 11:17
				value 11:2 43:3

<p>various 39:14 40:21 vehemently 45:11 vehicles 50:17 vendor 41:13, 19, 22 ventilation 18:24 50:9, 25 51:3 versus 43:24 viability 45:12 vibrant 12:1 view 4:5 vital 5:19 9:17 16:2 vitality 47:7 voluntary 23:12 vote 2:21 votes 2:20 17:4</p> <p>< W > W76-1 6:11 W78 30:25 31:5 W80-4 18:14 23:8 W87-1 18:15 23:9 31:1 wait 28:1 waiting 2:21 want 11:25 16:6 17:8, 10, 13 18:25 19:13 24:25 26:8, 22 28:8 29:5 33:11, 18 36:2, 15 40:23 50:2 51:6, 9, 11 53:10, 19 wants 44:14 War 4:16 9:8, 8 18:3 26:6 warfighting 16:8 warhead 18:15, 15 29:12 warheads 5:2 18:8 warships 14:10 16:2 Washington 1:13 Waste 9:14, 16 10:3, 5 11:11, 12, 13, 15 18:20, 21 19:7, 16, 18, 19 45:1, 2, 7, 13, 17 51:11, 12, 15, 20, 21 52:16, 18 53:3, 6 waste.” 11:1 way 10:22 22:14 28:8 29:5 38:24 41:8, 21 42:15 47:1 54:6</p>	<p>ways 14:19 35:7, 13 44:5 51:2 52:12 54:12 WCS 52:7 weapon 29:8 30:3, 8, 11 31:10, 18, 21, 23 32:15 weapons 3:16 4:25 5:6 9:7 18:12 22:4, 18 25:19 26:3, 9, 13 30:6, 8, 10, 23 32:3, 10 35:11 39:7, 12 Wednesday 1:7 weigh 39:19 welcome 2:4 8:2 18:18 well 17:7 18:23 20:18 22:16 26:14 27:9 28:14 32:2 35:12 36:12, 15, 23 43:16 44:23 47:24 49:4, 17 White 2:14 3:12 8:2 9:1, 3 12:5 18:18 28:2 44:25 45:10, 22 46:2 49:21 50:1, 14 51:13, 16, 25 52:21 53:21 wide-ranging 10:23 winds 46:14 WIPP 9:18, 19 18:23, 24 19:20 28:3 52:20 WIPP’s 19:8 wish 36:12 Withdrawal 19:12, 17, 20 witnesses 17:10 37:15 women 6:8 21:5 word 39:24 43:1 words 43:11 work 11:20, 25 21:15, 15 22:2 28:8 29:5 35:5 36:3, 21 37:6, 7 48:1 worked 50:19 workers 9:21 workforce 4:1, 9 6:22 7:2 9:10 21:5 22:7, 8, 14, 15, 16 34:4, 21, 23 35:17 36:9</p>	<p>working 5:24 22:23 27:20 34:25 35:6 40:3, 8, 11, 12 49:17, 20 51:5, 9 workload 18:11 36:11 works 54:6 world 3:18 4:5 6:21 9:8 14:12 49:4 written 11:21 55:1</p> <p>< X > x-ray 49:2</p> <p>< Y > Y-12 5:18 10:8 21:16 29:22 yards 9:23 YEAR 1:5 3:5, 20 4:16, 20 5:4, 11 6:22 7:11 9:5, 21 10:12 15:3, 5, 14, 15 16:13 17:20, 22 20:7, 23 21:20 25:24 26:11, 15 27:1, 1, 3, 4, 4, 5, 6, 13, 17 30:15, 15 34:19 35:23 36:7, 8 38:11 40:12, 15 42:16, 18 43:7 44:17 48:7 year’s 15:4, 25 17:17 20:3, 4, 6 23:4 48:10 years 4:3, 19 5:20 15:20 18:13, 23 19:4 21:3 22:1, 8 23:10, 17 27:11 29:2 32:17, 18 33:15 36:10 38:18, 25 40:19 43:23 45:8 46:12, 25 47:3, 6, 19 48:15 50:3, 10 yesterday 42:13, 24 York 15:17 Yucca 19:9 45:10</p>
---	---	---