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National Nuclear Security Administration
Office of the General Counsel
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SENT VIA EMAIL
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Mr. Steven Aftergood
Federation of American Scientists
1112 16th Street NW, Suite 400
Washington, DC 20036

Dear Mr. Aftergood:

This letter is the final response to your January 8, 2019 Freedom of Information Act (FOIA) request. You requested a copy of the written responses that were provided by NNSA to questions for the record arising from a March 20, 2018 hearing of the House Appropriations Committee, Subcommittee on Energy and Water Development.

Your request was sent to NNSA Office of External Affairs (NA-EA). NA-EA searched and located one document responsive to your request. It was determined that the document is fully releasable and therefore being released to you in its entirety.

There are no charges to you for processing your FOIA request. If you have questions, please contact Erica White by e-mail at erica.white@nnsa.doe.gov, or write to the address at the top of this page. Please reference Control Number FOIA 19-00068-EW.

Sincerely,

John E. Weckerle

John Weckerle
Authorizing & Denying Official

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

National Academies of Sciences Management Study

Q1a. Madame Administrator, last week, the National Academies released a report describing "the persistence of governance and management problems in the nuclear security enterprise, and the failure of past attempts to address them."

This Subcommittee has a long history of strong oversight of the agencies under its jurisdiction and has taken an active interest in finding solutions to many of the issues described in this particular report. We look forward to hearing more about your plans to take on these long-standing problems and to deliver a program that will successfully modernize the U.S. nuclear weapons stockpile and the supporting NNSA infrastructure.

What do you believe to be the highest priority management and operating issues that are impacting the NNSA's ability to successfully carry out its mission?

A1a. Effective governance and management of the nuclear security enterprise is a priority for me and is a topic I address routinely with the NNSA workforce, including Federal, management and operating (M&O), and contractor employees. NNSA is implementing a fully integrated, one team approach to mission execution. As part of this effort, we are working relentlessly to build mission awareness across the enterprise and to better integrate mission functions. Ensuring a productive and healthy relationship with our M&O contactors is critical to better mission integration. NNSA will begin to better define clear chains of command and improve accountability throughout the enterprise. With a systematic approach, balancing the burden and value of necessary oversight of our M&O contractors, we can empower the enterprise to execute our missions effectively and efficiently.

Strategic planning continues to be a key focus of NNSA and involves the entire nuclear security enterprise. We now issue annual Strategic Plans for each of our seven sites,

plants, and labs. Through strong strategic planning, we have a means for enhancing mission awareness and integration, building enduring and trusted relationships, improving communication, and strengthening collaboration across the enterprise.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

National Academies of Sciences Management Study

How do you intend to rebuild NNSA's credibility, specifically with regards to -

Q1b. the NNSA's ability to deliver its programs on time and within budget;

A1b. It is one of my highest priorities to ensure that all of NNSA's programs and projects are initiated, executed, monitored, and closed out efficiently and effectively, on time and within budget. NNSA is mindful of its obligation to be responsible stewards of the resources that Congress and the American people have entrusted to us. NNSA is taking the necessary steps to improve efficiency and effectiveness of its project management processes by:

- Improving management of ongoing major projects.

- Preparing cost estimates in a manner consistent with methods and best practices identified by U.S. Government Accountability Office (GAO).

- Conducting analyses of alternatives in a manner consistent with methods and best practices identified by GAO to provide unbiased and rigorously analyzed results.

Project management reforms across the Department and the creation of NNSA's Office of Acquisition and Program Management and Office of Cost Estimating and Program Evaluation have resulted in more effective cost estimating and project management. Over

the past two years NNSA has made significant achievements in the area of project management. For example, in 2013, GAO narrowed the focus of its NNSA High Risk List to major projects more than $750 million. Additionally, major construction projects, such as the Uranium Processing Facility in Oak Ridge, Tennessee, are being executed on schedule and on budget and NNSA's Life Extension Programs and Major Alteration also remain on schedule and within budget.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

National Academies of Sciences Management Study

How do you intend to rebuild NNSA's credibility, specifically with regards to -

Q1c. to consider an appropriate range of alternatives for its major acquisitions before presenting Congress with a funding request;

A1c. Project management reforms across the Department and the creation of NNSA's Office of Acquisition and Program Management and Office of Cost Estimating and Program Evaluation have resulted in more effective cost estimating and project management. As NNSA improves its overall program and project management capabilities through implementation of the Program Management Improvement Accountability Act, the performance of Alternatives of Analysis will also continue to improve, leveraging best practices from GAO and others from industry.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

National Academies of Sciences Management Study

How do you intend to rebuild NNSA's credibility, specifically with regards to -

Q1d. to operate with transparency in how funds are being used; and

A1d. In the last few years, the Department and NNSA have taken a number of steps to provide additional transparency in how funds are being used. NNSA reporting monthly financial data to Congress as part of DOE's Base Financial Report, including narrative explanations for unobligated and uncosted balances by fiscal year. NNSA is providing more data on infrastructure projects through reporting tools and additional data on overheads as part of Congressional reporting requirements.

NNSA's financial integration efforts will also advance NNSA's ability to provide more financial transparency. Financial integration will help achieve enterprise-wide standards of cost collection and lead to improved transparency of financial information. Financial integration is a multi-year effort that, once completed, should provide more information comparing costs across the nuclear security enterprise.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

National Academies of Sciences Management Study

How do you intend to rebuild NNSA's credibility, specifically with regards to -

Q1e. to improve its cost estimating so that we can fully consider the implications of the funding proposals that we are being asked to support?

A1e. Under my leadership and with strong congressional support, the NNSA Office of Cost Estimating and Program Evaluation (CEPE) has conducted a series of independent cost estimates for nuclear weapon life extension programs and, most notably, for the dilute and dispose alternative to plutonium disposition. These estimates have been conducted in accordance with GAO best practices and policies are in place for my review of both the independent cost estimate and program estimate prior to baselining the programs. In accordance with the Fiscal Year 2019 National Defense Authorization Act, CEPE will conduct independent cost estimates for capital asset projects that qualify as major atomic energy defense acquisition programs. This will ensure NNSA fully considers the risk and implications of funding activities needed to execute NNSA's mission. CEPE will also provide analytical and data support to the program offices to improve their cost estimating practices.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

MOX Termination

Q2a. The Fiscal Year 2018 National Defense Authorization Act allows the Secretary of Energy to terminate the project if DOE can provide a lifecycle cost estimate that shows the cost of the alternative is 50% of the cost of MOX.

We were informed that NNSA was preparing an interim cost estimate to certify that a cost estimate that meets the NDAA threshold exists, but that you were also developing a more comprehensive lifecycle cost estimate.

When will a comprehensive lifecycle cost estimate for dilute and dispose be provided to Congress?

A2a. NNSA will submit a comprehensive report to Congress on its plans to implement the dilute and dispose approach, including results of the lifecycle cost estimate (LCCE) upon completion of the independent validation of the estimate by the U.S. Army Corps of Engineers during FY 2019. In June 2018, NNSA began briefing the preliminary results of the dilute and dispose LCCE to congressional committees.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

MOX Termination

Q2b. What is the difference between the comprehensive lifecycle cost estimate that is under development and the one that might be submitted for the NDAA waiver?

A2b. The Cost Estimation and Program Evaluation Office (CEPE) prepared an Independent Cost Estimate of the dilute and dispose approach that was the basis for the Secretary's execution of the NDAA waiver. NNSA concurrently developed a detailed comprehensive lifecycle cost estimate (LCCE). Both estimates have similar results. The CEPE estimate range is $17.2B to $19.9B. NNSA developed the LCCE based on incremental costs to the Program to implement the dilute and dispose approach, which resulted in an $18B to-go cost. The CEPE estimate includes approximately $1.6B for other costs that are attributable to the dilute and dispose approach but are within other program budgets (i.e., Waste Isolation Pilot Plant operations and Office of Secure Transport shipping), so those costs are not directly included in the Program's LCCE. For comparative purposes, adding $1.6B to the LCCE produces a total estimate of $19.6B, which is within the CEPE estimate range.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

MOX Termination

Q2c. Do you intend to submit the NDAA certification and terminate the project, and if so, when?

A2c. On May 10, 2018, the Secretary transmitted to Congress the certification that allows the Secretary to waive the requirement to continue construction of the Mixed Oxide Fuel Fabrication Facility. This certification was later reaffirmed by the NNSA Administrator on September 14, 2018.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

MOX Termination

Q2d. If and when a waiver is submitted, will the estimate contain sufficient detail to allow Congress to conduct its oversight responsibilities?

A2d. On May 10, 2018, the Secretary transmitted to Congress the certification that allows the Secretary to waive the requirement to continue construction of the Mixed Oxide Fuel Fabrication Facility. This certification was later reaffirmed by the NNSA Administrator on September 14, 2018.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Naval Reactors Spent Fuel Recapitalization Project

Q3a. Admiral Caldwell, the Spent Fuel Recapitalization Project that's being carried out at the Naval Reactors Facility in Idaho is estimated to cost around $1.6 billion.

Do you have a cost and schedule baseline for the project? Do you foresee any difficulties in delivering the project within the current projected costs?

A3a. I approved the cost and schedule baseline for the Spent Fuel Handling Recapitalization Project on September 24, 2018. The Project was approved with a Total Project Cost (TPC) of $1,686,500,000 and has a planned completion date of June 30, 2025. During this process I approved an increase of $40 million to the TPC over the previous estimate to account for unanticipated cost increases due to market conditions. Based on the new TPC, I do not foresee any difficulties in delivering the project with the current projected costs.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Naval Reactors Spent Fuel Recapitalization Project

Q3b. What are the main risks to keeping those costs from rising and what is your strategy for cost containment?

A3b. The primary risks to cost increases are changes in market conditions, specifically in the areas of material costs, worker shortages, and labor rates. In order to contain these costs, the project is intently scrutinizing market conditions in both Idaho and nationally and exploring contracting strategies that can lock in prices and rates on material and labor that are subject to market volatility.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Naval Reactors Spent Fuel Recapitalization Project

Q3c. When does the project need to be completed to fully support the Navy's plans and what are the implications if there are delays?

A3c. The current funding profile supports project completion by the 3rd quarter of FY 2025. Each year of delay would require the Department of Defense to procure approximately $150 million of additional M-290 shipping containers for temporary storage of spent nuclear fuel and puts at risk Naval Reactors' commitment to the state of Idaho to process spent nuclear naval fuel and place it in dry storage in a timely manner.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Advanced Test Reactor

Q4a. Admiral, the Advanced Test Reactor (ATR) serves an important role for our nuclear navy, as well as for the Department's civilian nuclear energy research and development programs. ATR is an aging reactor that will require investment to keep it operating into the future. Your office works closely with the Office of Nuclear Energy (NE) to operate and maintain the reactor. There have been some discussions on how ATR should be managed and how costs should be shared between your office and NE.

Do you foresee Naval Reactors continue to need ATR for its research and development needs in the future?

A4a. Yes. For the foreseeable future Naval Reactors will rely upon ATR to irradiate naval fuel and materials specimens to improve future reactor designs. Naval Reactors is a primary user of the facility and we work closely with DOE-NE to ensure our mission is supported.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Advanced Test Reactor

Q4b. How do you asses the facility's condition to support NR's needs?

A4b. The development of the rolling 5-year "get-well plan" intended to upgrade ATR systems to improve plant reliability has enabled ATR to meet the needs of the Naval Nuclear Propulsion Program. Naval Reactors and DOE-NE have identified 210 irradiation days per year as an optimal balance of both operational time and plant down-time, in which maintenance and overhauls can be conducted using base funds for safety related systems and 5-year rolling plan funds to improve reliability.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Plutonium Pit Production

Q5a. Madame Administrator, the NNSA has pursued enhanced plutonium infrastructure capabilities on and off for many years. The last major project– the so-called "CMRR-Nuclear Facility"– was cancelled in 2013 when the project costs grew. There is no new project in the FY 2019 budget request but funding requested for "plutonium sustainment" is $361 million, or $176 million over FY 2017. This funding increases to $1.2 billion by FY 2023.

What are the main elements of the NNSA's present modernization program to enhance NNSA's plutonium capabilities and what is the total cost of establishing new pit production capacity?

A5a. The main elements of NNSA's efforts to modernize its pit production infrastructure and supporting capabilities, as laid out in the Department's Fiscal Year 2019 budget request, include the Plutonium Sustainment Program and the Chemistry and Metallurgy Research Replacement (CMRR) project. There are also supporting elements in NNSA's Maintenance and Repair of Facilities program and Recapitalization: Infrastructure and Safety program that address aging infrastructure and safety risks for plutonium production.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Plutonium Pit Production

Q5b. How much is requested in the fiscal year 2019 budget request to establish new pit production capabilities and in what funding lines?

A5b. The Plutonium Sustainment program funds production and certification activities, hiring of pit production personnel, and equipment necessary to reach 30 pits per year at Los Alamos National Laboratory (LANL). The CMRR project provides the necessary analytical chemistry and materials characterization capabilities to support pit production and other plutonium activities at LANL. The increase in the Plutonium Sustainment program reflects the inclusion of funding to repurpose the Mixed Oxide Fuel Fabrication Facility (MFFF) for pit production. A breakout of the funding associated with repurposing MFFF that was included in the Plutonium Sustainment program in the FY 2019 request is below:

	FY 2019 ($K)	**FY 2020 ($K)**	**FY 2021 ($K)**	**FY 2022 ($K)**	**FY 2023 ($K)**
Plutonium Sustainment Program	**361,282**	**691,284**	**745,485**	**978,889**	**1,189,491**
Plutonium Sustainment	*266,539*	*280,826*	*313,589*	*354,906*	*373,924*
Funding to Repurpose MFFF for pit production	*94,743*	*410,458*	*431,896*	*623,983*	*815,567*

The funding in Plutonium Sustainment continues efforts over the past several years to provide adequate funding for production activities at LANL and the Kansas City National Security Campus, certification activities at Lawrence Livermore National Laboratory, and increases to support pit production equipment and hiring of pit production personnel

at LANL. The costs associated with this program reflect estimates for production and certification activities, equipment, and hiring needs to produce 30 pits per year in 2026. The funding associated with repurposing MFFF for pit production is based on the high-end of Class 5 estimates (-20%, +100%) developed during the Plutonium Pit Production Engineering Assessment conducted in FY 2018. These estimates are based on the current level of pre-conceptual design for this project and will be updated as the project progresses towards Critical Decision-1.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Plutonium Pit Production

Q5c. Has the NNSA performed a cost and benefit analysis of how much pit production capacity is needed and how soon it could be established for a given amount of funding?

A5c. For more than two years, NNSA has analyzed what pit production capacity is necessary and evaluated alternatives to meet pit production requirements established by the Nuclear Weapons Council. The 2018 Nuclear Posture Review reaffirms the need to produce no fewer than 80 pits per year (ppy) by 2030. On May 10, 2018, NNSA provided Congress with the NNSA's recommended alternative to meet pit production requirements: repurposing the MFFF to produce 50 ppy and continuing efforts at LANL to produce 30 ppy. The NWC Chairwoman endorsed NNSA's recommended alternative in her May 2018 letter to Congress. The Nation can no longer delay critical investments in our pit production capabilities and the FY 2019 request reflects NNSA's intent to ensure that these efforts are reflected in the budget.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Infrastructure and Workforce

Q6a. Madame Administrator, the Nuclear Posture Review (NPR) released in early February emphasizes the need for investments in the NNSA's infrastructure and workforce.

How does this budget request reflect NNSA's workforce requirements?

A6a. To meet increasing mission requirements to have a fully functioning nuclear security enterprise, NNSA must have a workforce of appropriate size and capabilities. The Office of Personnel Management and the NNSA Office of Cost Estimating and Program Evaluation (CEPE) recently conducted studies and identified the need to increase NNSA's Full-time Equivalents to support the mission needs. Utilizing the results of these studies, NNSA is employing a human capital implementation plan to recruit and hire for agency mission critical occupations. Continuing to operate under current staffing constraints, without being able to address the increased mission needs for pit production, contributes to vulnerabilities in providing a safe, secure, and effective nuclear security program.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Infrastructure and Workforce

Q6b. Do you believe that NNSA has an appropriately sized and trained acquisition workforce in place to be successful at concurrently conducting all of these modernization programs plus new supplemental requirements in the NPR?

A6b. While NNSA's acquisition workforce is adequately trained, numerous internal and external workforce studies, including findings and conclusions from various GAO audits, have consistently determined that NNSA needs additional staff for the size of its acquisition and project management mission.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Infrastructure and Workforce

Q7a. Madame Administrator, GAO reports from the past several years show that NNSA has had challenges with financial integration across the nuclear security enterprise to enable identification of total program costs and with other kinds of financial and internal controls such as managing fraud risk.

A7a. Building on cost data collection requirements and processes currently being implemented within NNSA programs, NNSA will begin collecting FY 2018 financial integration data from all NNSA Management and Operating (M&O) contractors for NNSA programs using a common work breakdown structure and common cost elements in November 2018. NNSA will then start to analyze the data to determine what adjustments, if any, are required to help with program management.

In December 2013, Congress enacted legislation requiring NNSA to improve the financial integration of the nuclear security enterprise, including establishing common cost elements, work breakdown structures, and a technology solution. In June 2018, NNSA issued formal guidance for M&Os to provide Fiscal Year 2018 data, by month, using the financial integration approach.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Infrastructure and Workforce

Q7b. What steps is NNSA taking to address fraud risk management?

A7b. The Department of Energy establishes internal control and risk management processes and procedures which the Agency, as a whole follows, including NNSA. Consistent with these processes, NNSA has implemented the fraud risk requirements of revised OMB Circular A-123, which was informed by the GAO Framework for Managing Fraud Risk in Federal Programs.

NNSA's Office of Management and Budget oversees enterprise risk management and internal controls requirements at NNSA Headquarters, Field organizations and NNSA contractors. The DOE Office of Inspector General and the Office of the Chief Financial Officer (OCFO) provides fraud awareness training and NNSA encourages all organizations to participate.

The NNSA anti-fraud strategy is embedded in the NNSA Internal Controls Program. Implementation of OMB Circular A-123 requirements for risk profiles, including fraud risks, provides the processes necessary for managers to make resource decisions to mitigate residual risks.

NNSA's Risk Profile is incorporated into DOE's Risk Profile and is part of DOE's Fraud Risk Management, and is prepared and provided for use during the Strategic Review. In FY 2018, additional emphasis has been placed on fraud prevention in NNSA's Internal Control

tools to further increase fraud prevention activities across NNSA. NNSA Headquarters and Field elements, as well as NNSA Contractors, assess and identify top financial and non-financial fraud risks on an annual basis. When evaluating fraud, organizations assess fraud risk from the transaction-level to the entity-level. DOE/NNSA internal control focus area risks reflect increased emphasis across NNSA in the Acquisition Management and Contractor Oversight business processes.

All NNSA organizations (HQ/Field/M&Os) are responsible for evaluating and adapting activities to improve fraud risk management. An example of this is an NNSA M&O's Internal Audit Organization utilizing the Cooperative Audit Strategy and applying data analytic techniques to subcontractor payments, followed by focused follow-up on specific transactions rather than selecting a random sample of transactions to test.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

New Warhead Capabilities

Q8. Madame Administrator, the Nuclear Posture Review recommends the U.S. add two supplemental capabilities to the nuclear triad modernization program: a modification of an existing ballistic missile warhead to provide it a lower-yield option and a redeployment of a sea-launched cruise missile capability similar to that fielded by the U.S. for decades but retired by the Obama Administration in 2010.

Why are these two new capabilities needed? How will they enhance U.S. nuclear deterrence strategy?

A8. The additional capabilities are meant to strengthen deterrence by convincing adversaries the United States has credible and effective options at any level of escalation. These capabilities will provide additional diversity in platforms, range, and survivability.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

New Warhead Program Funding

Q9a. Madame Administrator, there is a significant lack of detail on how the NNSA would carry out the proposal for two new capabilities.

Is there any funding in the FY 2019 budget request to support either of these two new programs?

A9a. The FY 2019 amended budget request contained a $65 million request to support the modification of an existing ballistic missile warhead to provide a lower-yield option. In FY 2019, Congress appropriated $65 million for this option with the passage of the Energy and Water, Legislative Branch, and Military Construction and Veterans Affairs Appropriations Act, 2019 (Public Law 115-244).

NNSA did not request any money in the FY 2019 budget request to support the redeployment of a sea-launched cruise missile capability. NNSA will support the sea-launched cruise missile analysis of alternatives (AoA) as requested from the Department of Defense. NNSA will support these efforts through the Nuclear Weapons Council, but will not create a formal program until the AoA is concluded.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

New Warhead Program Funding

Q9b. How much do you estimate they will cost and when would they be delivered? What are the immediate steps you are taking, including any plans to use FY 2018 funds, and have you developed any programmatic plans yet?

A9b. NNSA estimates the low-yield submarine launched ballistic missile warhead modification program to cost $98 million, with further refinements to be made during FY 2019. NNSA will deliver the warheads within the requirements established by the Department of Defense for Initial Operating Capability (IOC) and Final Operating Capability (FOC) quantities and timelines.

In FY 2018 NNSA conducted W76 Life Extension Program (LEP) programmatic planning activities for the low-yield submarine launched ballistic missile warhead conversion. FY 2019 authorization and appropriations have been received and NNSA entered the engineering development and production phases on October 1, 2018.

The requirements for the sea-launched cruise missile have not been established. NNSA did not request any money in the FY 2019 budget request to support this effort. When warhead technical and IOC/FOC requirements are established, NNSA will then be able to estimate the cost and delivery schedule of this warhead.

No FY 2018 NNSA funds were expended towards program planning for a sea-launched cruise missile. NNSA will begin program planning upon receipt of requirements for this warhead.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Capacity for Stockpile Modernization Programs

Q10a. Madame Administrator, last summer, the Government Accountability Office (GAO) published a report that said the NNSA's nuclear modernization programs were already at high risk of delays and cost increases – and that was before the NPR and the announcement of additional modernization programs. The outgoing NNSA Administrator Gen (ret.) Frank Klotz appeared to confirm these risks when he told the press in January, *"We're pretty much at capacity in terms of people, although we're hiring more. We're pretty much at capacity in terms of the materials that we need to do this work. And pretty much at capacity in terms of hours in the day at our facilities to do this work."*

What role did DOE play in the interagency NPR review?

A10a. NNSA had representatives from the Offices of Defense Programs; Policy; and Defense Nuclear Nonproliferation supporting the interagency NPR working groups. These representatives' subject matter expertise supported the creation of the 2018 NPR.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Capacity for Stockpile Modernization Programs

Q10b. Did DOE or NNSA mention the cost and operational constraints when these new programs were being considered?

A10b. The estimated cost cited by the Congressional Budget Office includes both Department of Defense (DoD) and DOE/NNSA projected costs associated with the nuclear deterrent. NNSA worked closely with DoD regarding cost when these new programs were being considered. NNSA performed Enterprise Modeling and Analysis on all proposed options from an operational capacity, critical materials and workload standpoint. The outputs from this analysis were provided to the NPR working groups to support their decisions.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Capacity for Stockpile Modernization Programs

Q10c. Do you agree with your predecessor that the NNSA will be hard pressed to deliver additional work with the current capability of the NNSA's workforce and infrastructure?

A10c. The additional workload will be challenging and will require efficient and pro-active management of additional infrastructure investments and additional workforce resources. NNSA has managed and continues to actively manage the infrastructure, workload, and supply chains of the nuclear security enterprise incorporating changes directed by the 2018 NPR.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Long-Term Modernization Estimates

Q11a. Madame Administrator, even prior to the issuance of the 2018 Nuclear Posture Review, NNSA's Stockpile Stewardship and Management Plans indicated significant increases in its future budget plans. These increases raise concerns about the affordability of NNSA's planned portfolio of modernization programs.

Can the NNSA afford the scope of its current modernization program within existing budgetary targets, and if not, does the stockpile plan identify all additional needed resources?

A11a. NNSA's Stockpile Stewardship and Management Plan (SSMP) articulates NNSA's 25-year plan for the nuclear security enterprise. The FY 2020 SSMP will fully reflect the 2018 Nuclear Posture Review requirements on the enterprise as they exist today, and will provide an update on the affordability of the portfolio. NNSA's method for evaluating potential affordability is part of a portfolio management approach in line with the level of uncertainty affecting the out-years beyond the President's budget.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Long-Term Modernization Estimates

Q11b. If funding needs are not met, how would this affect the agency's overall modernization schedule?

A11b. If funding requests are not met, it will negatively impact NNSA's ability to modernize. NNSA will balance risk across the enterprise while keeping Congress informed of significant program changes.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Long-Term Modernization Estimates

Q11c. Will future modernization plans continue to include the estimates of the projected budget for the program to provide assurance that NNSA's program plans are aligned with budgetary plans?

A11c. Yes. The Stockpile Stewardship and Management Plan is updated and published annually, and includes NNSA's 25-year plan for the nuclear security enterprise. The FY 2019 SSMP includes budget information for the FY 2019 Future Years Nuclear Security Program (FYNSP), along with life extension program (LEP) schedules, preliminary infrastructure resource planning, and the long-term DOE/NNSA strategy through FY 2043 to ensure the Nation's nuclear deterrent.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

B61 Life Extension Program Cost Increase

Q12a. Madame Administrator, the budget request for the B61 Life Extension Program is $794 million, making it the single most expensive modernization program or project for fiscal year 2019. The NNSA's baseline cost for the B61 LEP is approximately $8 billion, but internal studies have warned that costs could rise to around $10 billion. In addition, while production is required to start in FY 2020 and be completed by the end of FY 2024, internal studies are predicting a delay of two years if current performance trends continue.

Is the B61 Life Extension Program on schedule and on budget? What are the risks of the program costing more or getting delayed?

A12a. The B61-12 Life Extension Program (LEP) is on schedule and on budget for a first production unit (FPU) by March 2020. The B61-12 has successfully completed all major milestones reported in the Selected Acquisition Report (SAR) including the recently completed September 2018 B61-12 System Final Design Review (FDR) validating the LEP's readiness to begin production. The System FDR assessed results of more than 60 ground and flight system tests to validate the B61-12 meets its safety, reliability, and security requirements in normal and abnormal environments. The LEP's budget execution is on track with the SAR cost baseline of $7.6 billion. Total cost for the program remains at $8.3 billion, which includes leveraging $648 million from other programs for technology maturation, and equipment scope.

Similar to other complex acquisitions, the B61-12 LEP is managing both technical and programmatic risks. The remaining technical risk in the design is low given the successful LEP test history, and the program will complete remaining system qualification tests in Fiscal Year 2019. Schedule risk is moderate due to piece part

hardware availability associated with first time production of very complex and tight tolerance nuclear weapon parts. The current schedule risk is measured in months not years and is closely managed with mitigation strategies by the B61-12 Federal Program Office. Currently, all major component's FPUs are on track to meet the system FPU in March 2020.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

B61 Life Extension Program Cost Increase

Q12b. When would NNSA inform the Committee that the program is at risk of exceeding the cost and schedule baseline?

A12b. NNSA is required to provide notification of not later than 30 days of cost overruns exceeding 125% of cost ($1.9 billion) or 150% increase in unit cost (unit cost is classified) (50 U.S.C. 2753). Currently, the B61-12 is on track with the cost baseline of $7.6 billion and completing production in FY 2025 as documented in the current B61-12 SAR. The Federal Program Office is in the process of updating the production cost estimate and associated risks in the Baseline Cost Report as part of Phase 6.5 authorization, scheduled for September 2019. NNSA's Office of Cost Estimating and Program Evaluation is also conducting an Independent Cost Estimate in parallel, which will inform the final updated estimate planned for release in September 2019.

Until the Phase 6.5 assessment is completed, NNSA will continue to provide quarterly updates to Congress on LEP progress and risks.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Integrated Warhead

Q13a. Madame Administrator, the fiscal year 2019 budget proposes $53 million to "restart Feasibility Study and Design Options" work on the Integrated Warhead or IW-1. When it was requested in fiscal year 2014, Congress did not appropriate funding for the IW-1 and the Navy later requested that the idea be shelved in order to carry out a separate refurbishment of the W88. The Nuclear Posture Review doesn't mention any requirement for integrated warheads.

Can you please provide us more information on why the NNSA is requesting funding for the IW-1 and how it relates to the Nuclear Posture Review?

A13a. There is no current stated military requirement for interoperability. The concept has merit, and feasibility will continue to be explored to inform future requirements validation. With the release of the 2018 Nuclear Posture Review (NPR), NNSA is no longer planning for an IW1 program as previously conceived and no longer uses the name "IW1"; however, for the FY 2019 budget request, prepared just prior to release of the NPR, NNSA used the existing "IW1" budget line out of necessity to identify funds for the W78 Replacement Program.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Integrated Warhead

Q13b. With the W88 Alteration Program well under way that will extend the life of that warhead for at least another 20 years, is there any military requirement for an integrated warhead?

A13b. It is NNSA's understanding from the Department of Defense that the previously planned IW1 warhead alone was not intended to replace the W88 warhead, but deployed concurrently with W88 warheads to rebalance sea-leg deployment for risk reduction against technical failure.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Inertial Confinement Fusion and Ignition

Q14a. Madam Administrator, the budget request proposes a decrease of $104 million, or 20%, for the scientific research on ignition and the experimental facilities that support that goal, including the National Ignition Facility, OMEGA Laboratory for Laser Energetics, and the Nike Laser at the Naval Research Laboratory. Though the NNSA constructed the National Ignition Facility, achieving ignition has so far been elusive.

What are the prospects for achieving ignition at NIF?

A14a. The Inertial Confinement Fusion 2020 Goal is exploring the efficacy of NIF to achieve ignition as currently configured or with upgrades. It is unlikely that the NIF will achieve ignition in its current configuration.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Inertial Confinement Fusion and Ignition

Q14b. Are there other uses for these experimental facilities if ignition cannot be achieved?

A14b. Yes. NNSA researchers around the complex rely on the high energy density experimental facilities to address key technical questions in the areas of thermonuclear burn, radiation transport and hydrodynamics, material properties, and outputs and survivability experiments for the Stockpile Stewardship Program.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Inertial Confinement Fusion and Ignition

Q14c. Are you proposing to shut down any facilities and what is your plan for experimental programs in this budget request?

A14c. NNSA is not currently proposing to shut down any experimental facilities. In February 2018, the President's budget proposed the initiation of a 3-year ramp down in funding for the Omega Laser Facility at the University of Rochester's Laboratory for Laser Energetics. This decision was made to ensure that within the FY 2019 President's Budget for NNSA, near-term scientific and technical issues of the highest priority to the Stockpile Stewardship Program would have sufficient experimental resources and access to facilities. Given the Congressional Appropriation levels for FY 2019, NNSA will maintain a program that includes operational funding for the National Ignition Facility, the Z Pulsed Power Facility, and the Omega Laser Facility in support of stockpile stewardship.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Surveillance of the Existing Stockpile

Q15a. Madame Administrator, nuclear weapons surveillance is the primary tool for you and for the Secretary of Defense to certify to the President that the stockpile is safe and reliable. NNSA has had difficulty in the past meeting its surveillance goals.

How does this budget request reflects investments NNSA has determined as needed for new technologies and approaches that allow weapons to be inspected more quickly and less expensively?

A15a. NNSA has identified high-priority investment projects and aligned available funding to those projects. This has resulted in work on advanced technologies with higher throughput, better data, and reduced cost per test (e.g., High Resolution Computed Tomography and laser gas sampling of pits). The budget request includes the funds needed to utilize tools to meet surveillance requirements, as well as the funding needed to address other similar needs (e.g., Accurate Detonator Advanced Performance Testing (ADAPT) for detonator surveillance, Neutron and Collimated Imaging of Canned Subassemblies (CSAs)). As opportunities for further improvement are identified, such as replacement of aging equipment, emerging technologies, and emerging data gaps, NNSA will continue to prioritize these needs and request appropriate funding.

Additionally, NNSA has made substantial progress in recent years in meeting surveillance requirements by employing a risk-based NNSA surveillance governance process that integrates Federal, Laboratory and Production Plants to ensure that prioritized surveillance requirements are identified and executed. This results in an

approved baseline plan for which the complex is held accountable for meeting surveillance objectives.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Surveillance of the Existing Stockpile

Q15b. How will the surveillance program be affected by the proposal in the NPR to continue to maintain the B83 – one of the oldest warheads in our nuclear arsenal?

A15b. Maintaining the B83 in the stockpile longer will require extension of surveillance requirements to align appropriately with the adjusted weapon system retirement date.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Uranium Enrichment Alternatives

Q16a. Madame Administrator, "unobligated" low enriched uranium is still needed for the production of tritium used in nuclear weapons, which needs to be periodically replenished to maintain those weapons systems. When the Paducah enrichment plant was closed in 2013, NNSA projected that its supply of enriched uranium would run out in 2027.

When do you estimate that NNSA's supplies of enriched uranium needed for national security purposes will run out?

A16a. NNSA's nearest term need for unobligated enriched uranium for national security purposes is for the production of tritium used in nuclear weapons. Ongoing NNSA efforts to down-blend excess material with no other disposition plan will extend this need date to 2041.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Uranium Enrichment Alternatives

Q16b. How much do you estimate building a new uranium enrichment capability will cost?

A16b. NNSA is currently conducting an Analysis of Alternatives (AoA) to recommend the solution(s) that will provide the best value to the American taxpayer. Depending on the technology selected, an independent cost review performed by the DOE Office of Project Management in December 2016 estimated that a construction project to meet the low enriched uranium for tritium requirement could cost between $3.4 and $14.1 billion from FY 2019 to FY 2038.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Uranium Enrichment Alternatives

Q16c. Will this planned new capability address all of DOE's needs for low enriched uranium or just its need for tritium?

A16c. The AoA is considering options that would address all of NNSA's needs for enriched uranium, including high-assay, low enriched uranium for nuclear nonproliferation, and highly enriched uranium for naval reactors.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Uranium Enrichment Alternatives

Q17. Madam Administrator, NNSA has two options it is developing for a future national security uranium enrichment facility – the AC100 centrifuge and a "small centrifuge" that NNSA has built a prototype of at the Oak Ridge National Laboratory. Both have challenges to deployment.

Can you please discuss why you are pursuing these two alternatives, what are the benefits and drawbacks of each technology, and when do you intend to make a decision on the preferred alternative?

A17. The AC100 centrifuge and the smaller centrifuge currently under development at Oak Ridge National Laboratory represent two different approaches to centrifuge design. The AC100, designed by Centrus Energy Corporation, formerly the United States Enrichment Corporation, is a large, mature machine and would require fewer units to achieve the desired output. However, the size and complexity of the AC100 may make it expensive to build and operate. The small centrifuge, while currently a less mature technology than the AC100, will be closer in size and complexity to the industry standard and may offer a less expensive solution for the NNSA mission need. As part of the DOE acquisition process, NNSA is currently conducting an Analysis of Alternatives (AoA) to recommend one or more solutions to meet the mission need. The AoA is scheduled to conclude in December 2019.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Nonproliferation Program Budgets

Q18a. Madame Administrator, the overall budget request for fiscal year 2019 for the NNSA nonproliferation programs is reduced from the fiscal year 2017 enacted level.

How will these reductions impact NNSA's nonproliferation mission?

A18a. The Administration is committed to pursuing an aggressive nonproliferation agenda.

NNSA actually requested more money in FY 2019 for its core nonproliferation, counterterrorism, and counterproliferation work than was requested in FY 2017. NNSA effectively requested the same amount as enacted in FY 2017, excluding legacy pension payments and the MOX construction program.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Nonproliferation Program Budgets

Q18b. What more can the NNSA do to address the highest risk nonproliferation threats?

A18b. As noted in the 2018 Nuclear Posture Review, nuclear nonproliferation will continue to face several enduring challenges: North Korea's nuclear provocations; uncertainty over Iran's nuclear ambitions; threat of China modernizing and expanding its nuclear forces; the danger of nuclear terrorism; and Russia's continued violation of arms control agreements. NNSA is committed to the administration's goal of achieving a final, fully verified denuclearization of the Korean Peninsula, and to ensuring Iran never acquires a nuclear weapon. To help the U.S. Government achieve these goals, NNSA will continue to engage with U.S. interagency and international partners to mitigate the threats posed by North Korea and Iran. NNSA will also continue to strictly control the spread of weapons-usable material, related technology, and expertise with the goal of preventing state actors from acquiring weapons of mass destruction (WMD). Further in that regard, NNSA will continue its work in the United States and abroad to keep WMD-usable materials protected from terrorists. Finally, NNSA will need to continue to work with U.S. interagency and international partners to strengthen the nonproliferation regime and ensure that arms control agreements are verifiable and enforceable.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

American Medical Isotopes Production Act (AMIPA) of 2012

Q19a. What are you doing to meet the goals of AMIPA and establish a reliable domestic supply source of Moly-99?

A19a. To meet the goals of AMIPA and support the establishment of a reliable domestic supply of Mo-99, NNSA has provided $100 million to U.S. commercial entities via cost-sharing cooperative agreements to accelerate Mo-99 projects to market. One of NNSA's cooperative agreement partners will begin producing Mo-99 for patient use in the United States by the end of 2018. In addition, NNSA issued a Funding Opportunity Announcement in July 2018, and will award $60 million of new cost-sharing cooperative agreements in early 2019. Separately, since 2010, NNSA has funded the national laboratories over $100 million to provide technical assistance to private industry in developing non-highly-enriched uranium (HEU) based Mo-99 technologies.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

American Medical Isotopes Production Act (AMIPA) of 2012

Q19b. Are any of the projects funded by NNSA's program supplying the domestic market and what do you consider to be the measure of success for this program?

A19b. One of NNSA's cooperative agreement partners received Food and Drug Administration approval in February 2018 to use its technology to produce Mo-99 in the United States and expects to begin supplying Mo-99 in the U.S. market by the end of 2018. NNSA considers the measure of success for this program to be sustainable, redundant Mo-99 production in the United States.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

American Medical Isotopes Production Act (AMIPA) of 2012

Q19c. What else should be done to prevent future domestic shortages?

A19c. NNSA will continue to provide financial and technical assistance to domestic industry to establish sustainable, redundant Mo-99 production in the United States and will continue to support the only remaining major global producer using HEU, to convert to LEU-based production as soon as possible. These complementary efforts, once completed, will significantly reduce the risk of any further domestic Mo-99 shortages.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Long-Term Mo-99 Strategies

Q20a. If those projects are successful, how long do you project the MURR reactor can operate and supply U.S. demand?

A20a. While there is no end of life planned at this time for the Missouri University Research Reactor (MURR), MURR has renewed its operating licensing until 2037, and will continue to provide irradiation services to produce Mo-99 for private industry during that period of time. Furthermore, NNSA is supporting multiple new technologies that do not require MURR or another research reactor to supply U.S. demand for Mo-99.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Long-Term Mo-99 Strategies

Q20b. Is DOE considering funding a longer-term solution?

A20b. The strategy of DOE/NNSA's Mo-99 program is to support a variety of Mo-99 production technologies to ensure that there is no single point of failure in U.S. Mo-99 production. While the first domestic project to market will use MURR, NNSA is continuing to support multiple new technologies that do not require research reactors to produce Mo-99. Over the long-term, this technological diversity will help ensure a reliable Mo-99 supply in the United States.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Conversion Programs for Moly-99 Production

Q21a. Is there a viable plan to convert any of those reactors to low-enriched uranium fuel?

A21a. The research reactors in the Netherlands, Poland and Czech Republic that currently provide irradiation services to produce Mo-99 have already been converted to low-enriched uranium (LEU) fuel. Belgium's BR-2 reactor is working to convert to LEU fuel and will do so as soon as a qualified fuel is available.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Conversion Programs for Moly-99 Production

Q21b. Will DOE continue to supply high-enriched uranium fuel for those reactors?

A21b. Belgium's BR-2 research reactor is the only remaining irradiator for Mo-99 production that uses highly-enriched uranium (HEU) fuel. Any export of HEU to the BR-2 would be in accordance with applicable U.S. export requirements.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Conversion Programs for Moly-99 Production

Q21c. For the record, how much funding has DOE spent to support Moly-99 production in foreign reactors to date?

A21c. DOE/NNSA has not spent any funding to support Mo-99 production in foreign reactors. However, NNSA has spent approximately $40 million to assist global producers in converting production facilities in South Africa, Netherlands and Belgium from HEU-based to LEU-based Mo-99 production.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

S8G Prototype Refueling

Q22a. Admiral Caldwell, the budget request contains $250 million, increase of $126 million over FY 2017, to refuel the S8G prototype reactor located in upstate New York. The Administration submitted a request for the Congress to consider additional funding above the budget request in fiscal year 2018 in order to reduce risks in this program.

What is the schedule for the refueling and is the program still on time and on budget?

A22a. The S8G Prototype Refueling Overhaul is on time and on budget. The FY 2019 appropriation of $250 million helps to ensure that the completion of this project will result in a viable research and development platform and training platform in the decades to come.

The prototype was shut down and ceased student training earlier this year in preparation for the refueling overhaul. Key milestones for the project are as follows:

- FY19 – Core manufacturing complete
- FY19 – Commence refueling operations
- FY20 – Complete refueling operations and prototype overhaul
- FY21 – Availability Complete

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

S8G Prototype Refueling

Q22b. Because the platform is a test bed for fuel under development, would delays to the refueling impacts to the schedule for the Columbia-Class ballistic missile submarine?

A22b. The S8G Prototype will be refueled with the Technology Demonstration Core (TDC). TDC core manufacturing development (which began in FY 2010) and production (scheduled to complete in FY 2019) will install Columbia-like fuel modules that are necessary to support a 40+ year life-of-the ship reactor core for the Columbia-Class submarine. Manufacturing of the Columbia-like fuel modules is complete, therefore any potential delays to the S8G Prototype Refueling Overhaul will not impact the schedule for Columbia-Class design and construction. However, the refueling overhaul is still important to the Columbia-Class in that the operation of the TDC core will provide data that will inform operating parameters for the entire class of Columbia-Class ships.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Naval Reactors Infrastructure

Q23a. Admiral Caldwell, this Subcommittee has strongly supported funding to address long-standing infrastructure issues in the NNSA's nuclear security enterprise, particularly deteriorating high-risk excess facilities left over from the Cold War. The budget request for general infrastructure for the Office of Naval Reactors is $76 million, or 17%, above the fiscal year 2017 level.

Can you please outline the status of Naval Reactors infrastructure?

A23a. Naval Reactors currently manages roughly 3.9 million square feet of facilities across the four Naval Nuclear Laboratory sites. These sites are over 60 years old and over half of the buildings and utility systems are operating beyond their original expected useful life. Replacing these older buildings and utility systems is required to minimize risks to operations and maintain compliance with environmental and safety regulations. In recent years, to provide high-priority fleet support and development work, Naval Reactors has prioritized maintenance and sustainment over recapitalization and replacement investments in facilities and infrastructure. This situation is not tenable for the long term. The rate of failure in deteriorating systems and the corresponding need to perform unplanned and urgent repairs to maintain site operations has increased. Additionally, there is an estimated $7.8 billion in environmental liabilities requiring decontamination and decommissioning efforts. Over half of this estimate is the cost to remediate and demolish currently inactive portions of facilities and structures. Due to historical operations and past accepted waste management practices, many inactive facilities require radiological and/or chemical remediation prior to dismantlement and removal.

QUESTION FROM THE HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Naval Reactors Infrastructure

Q23b. What are the most pressing needs and where are your highest infrastructure priorities in the budget request?

A23b. There are two distinct priority areas with Naval Reactors Operations and Infrastructure that are essential to the Naval Nuclear Propulsion Program going into FY 2019. First, the Program will be increasing its efforts in decontamination and decommissioning (D&D) older facilities that have been in existence since the start of the Program in the early 1950s. There are an estimated $7.8 billion in environmental liabilities requiring D&D efforts - about half of these facilities are no longer in use. The Program's positive track record on environmental safety is of the utmost importance, and is a core part of the Program's mission. FY 2019 funding in this area will enable the Program to reduce these outstanding liabilities and ultimately reduce the caretaking burden. The second focus area is recapitalizing Naval Nuclear Laboratory facilities and infrastructure systems, many of which have supported the Program since its inception over 60 years ago. Maintaining these laboratory facilities directly supports nuclear fleet operations and advanced research and development efforts.

QUESTION FROM REPRESENTATIVE CHUCK FLEISCHMANN

Y-12

Q24a. Y-12's role as the nation's Uranium Center of Excellence is fairly well known, but Y-12 is also home to the weapons complex's lithium mission. Current production work on this critical material is performed in Building Beta-2, which is currently 75 years old and in a state of significant degradation. The President's budget included $19 million to begin design work for the Lithium Production Capability Project at Y-12, which will reduce mission risk and improve safety by relocating the lithium mission to a new facility. Preliminary cost estimates for the project are in the neighborhood of $700 million.

Could you describe the status of the Lithium Capability Project and how NNSA is ensuring that nation's strategic lithium supply is maintained?

A24a. NNSA plans to build a new facility at Y-12 National Security Campus (Y-12) to replace the lithium work currently being done in Y-12 Building 9204-2. NNSA expects to achieve Critical Decision 1 (Approve Selected Alternative and Cost Estimate) in 2019. Congress approved the Lithium Processing Facility (LPF) as a new start in FY 2018. NNSA has also developed a lithium sustainment strategy to ensure supply for production needs and sustain the infrastructure necessary to fabricate lithium components until a new LPF is established. The Program of Record supply is sufficient through 2030.

QUESTION FROM REPRESENTATIVE CHUCK FLEISCHMANN

Y-12

Q24b. The proposed location for the new lithium facility is currently occupied by an excess facility known as the Biology Complex, a very dilapidated set of buildings that has been turned over to the Department's Office of Environmental Management for demolition. Just this month EM successfully tore down the first two Biology Complex buildings in this large, multi-year effort. DOE's budget justification lists NNSA's Top Ten High-Risk Excess Facilities, three of which—the three oldest of the ten—are at Y-12. Could you describe NNSA's efforts to prioritize risk reduction and preparation of these facilities for transition to EM for eventual D&D?

A24b. Approximately 10 percent of NNSA infrastructure is excess to program needs. Excess facilities are a drain on NNSA resources and pose risk to safety, security, and program objectives. These facilities require aggressive action at the site, NNSA, and department levels to disposition in a safe, timely, cost-effective manner and to manage risk associated with them until disposition. NNSA's highest disposition priorities are to stabilize degraded process-contaminated facilities, characterize their hazards and conditions, remove hazardous materials, and place them in the lowest risk condition possible for demolition by DOE's Office of Environmental Management (DOE-EM).

NNSA is focusing the majority of its disposition funding on managing the highest risks these excess facilities pose to our mission, the public, and the environment. NNSA is addressing these risks through site-proposed projects within the Recapitalization and Maintenance portions of the Infrastructure and Operations program.

For the three Top-Ten High-Risk Excess Facilities at Y-12 – Alpha-5, Beta-4, and Building 9206 – NNSA is making annual investments in risk reduction activities to

stabilize the facilities until eventual disposition by DOE-EM. Additionally, in Fiscal Year (FY) 2018, NNSA invested in deinventory activities at the three facilities to remove legacy materials. In FY 2019, NNSA is funding projects to isolate and reroute utilities at Alpha-5 and Beta-4. NNSA is also investing in the West End Protected Area Reduction Project (WEPAR), which will move Alpha-5 and Beta-4 outside the protected area, thereby enabling more efficient disposition by avoiding costly security escort expenses and time to process in and out of the protected area.

NNSA and DOE-EM have documented the requirements that must be met prior to transfer of these facilities to DOE-EM for disposition. NNSA will continue to work with partners in DOE-EM in the coming years to address these requirements to stabilize and prepare the facilities for transfer to DOE-EM.

QUESTION FROM REPRESENTATIVE CHUCK FLEISCHMANN

Stockpile Facilities

Q25. While the UPF will be a significant achievement towards modernizing the nation's nuclear infrastructure, NNSA must also continue to invest in the maintenance and operation of aging nuclear facilities that conduct operations critical to the national defense mission. For example, Building 9215 at Y-12 is over 60 years old and supports enriched uranium machining operations, and Building Beta-2E is about 50 years old and supports key stockpile management and sustainment activities. The missions of both of these facilities will remain integral parts of the overall weapons complex for the foreseeable future.

At Y-12, NNSA has established an Extended Life Program for aging nuclear facilities with critical enduring missions. Could you describe the efforts NNSA has made to date, and discuss how well NNSA is postured for the future, to reduce operational risk in its enduring nuclear facilities and to ensure their continued safe operation for the remainder of their mission lives?

A25. Safe, reliable, and modern infrastructure at NNSA's national laboratories and production plants is absolutely essential to the accomplishment of our vital national security mission and the well-being of our workforce. As the 2018 Nuclear Posture Review states, there is no margin for further delay in improving the state of NNSA's infrastructure.

To reduce operational risk and ensure continued safe operation, NNSA prioritizes projects within available resources. Standardized processes have been implemented to rank annual recapitalization, disposition, and maintenance activities across the enterprise. For example, NNSA uses a prioritization methodology that ranks investments to optimize risk reduction per dollar by evaluating key criteria for Recapitalization projects. Criteria evaluated include program requirements and risk reduction, safety risk reduction, increases in operational efficiency and/or productivity, and deferred maintenance reduction.

NNSA is also making strategic investments in extending the life of production facilities such as NNSA's uranium, lithium, and plutonium facilities. For example, NNSA has developed an Extended Life Program to extend the life of Buildings 9204-2E (Beta-2E) and 9215 at Y-12 to support NNSA's enriched uranium capability. These 1950s and 1960s-era facilities had been slated for retirement, but now are required to continue to operate until at least the 2040s. NNSA has established a portfolio of investments over the coming years to systematically address the risks posed by these aging facilities and modernize the facilities for operations to the 2040s. A second component of the Extended Life Program is evaluating safety risk reduction with an approved, Safety Strategy. Engineering evaluations have guided investment decisions implementing key activities such as Material at Risk reduction with the Area 5 De-inventory program and re-evaluating gaps, identifying practical upgrades, or accepting risk to operate the facilities against modern nuclear safety and design requirements.

NNSA is also applying the extended life program approach to the Y-12 plant lab (9995), which plays a critical role in processing samples for uranium and lithium missions at Y-12. Similar to 9215 and Beta-2E, the Plant Lab had been slated for retirement, but now will need to operate in the 2040s, and support the increased workload that is anticipated when the new Uranium Processing Facility and Lithium Processing Facility come online.

Beyond existing facilities at Y-12, NNSA is beginning to implement similar investment strategies for critical infrastructure maintenance and revitalization across the enterprise.

A subset of those investments are highlighted in NNSA's 2018 Master Asset Plan, which is NNSA's long-term infrastructure strategic plan.

QUESTION FROM REPRESENTATIVE CHUCK FLEISCHMANN

Nuclear Posture Review

Q26a. The 2018 Nuclear Posture Review (NPR) included two new supplements to the nation's nuclear forces: a low-yield submarine launched ballistic missile (SLBM) warhead and a modern nuclear-armed sea launched cruise missile (SLCM).

The NPR describes the low-yield SLBM as "a comparatively low-cost and near term modification to an existing capability." Describe the impacts the low-yield SLBM would have on operations at Y-12, including potential impacts to planned facility maintenance activities, staffing, and/or shift tempo. Include discussion of Figure 2-7 of the Fiscal Year 2018 Stockpile Stewardship and Management Plan, which shows projected out-year workloads for canned subassemblies at Y-12. If the impact to Y-12 operations has not been determined yet, please describe when and how NNSA will conduct this assessment.

A26a. The low-yield SLBM will have minimal impacts on operations at the Y-12 National Security Campus (Y-12), including planned facility maintenance activities, staffing, and/or shift tempo. The low-yield conversion is of a small number of warheads and there is no foreseen impact to staffing levels at Y-12. NNSA plans to leverage existing processes and personnel at the production sites to perform this conversion. With the production quantities planned and the ability to leverage existing processes and personnel, NNSA does not anticipate additional impacts to shift tempo.

QUESTION FROM REPRESENTATIVE CHUCK FLEISCHMANN

Nuclear Posture Review

Q26b. Similarly, please describe possible impacts to Y-12 operations from the new SLCM.

A26b. The requirements for the new sea-launched cruise missile have not been established. When NNSA receives the technical requirements and quantities from the Department of Defense, NNSA will analyze the impact, if any, to Y-12 operations.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Nuclear Posture Review – Fiscal Impact

Q27a. It is important to understand the fiscal impacts of the proposed new nuclear weapons capabilities in the Nuclear Posture Review (NPR) before Congress starts down the path of implementing them. The NPR calls for a low-yield sea-launched ballistic missile and a low-yield sea-launched cruise missile.

Does NNSA plan to include these capabilities in its fiscal year 2019 Stockpile Stewardship and Management Plan?

A27a. The Department of Defense and NNSA, through the Nuclear Weapons Council, continue to translate the policy of the Nuclear Posture Review into requirements for the nuclear security enterprise. NNSA's FY 2019 Stockpile Stewardship and Management Plan (SSMP) includes a discussion about these capabilities as they were understood at the time of the SSMP's publication. NNSA's FY 2020 SSMP will include more detailed information on these capabilities.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Nuclear Posture Review – Fiscal Impact

Q27b. When will NNSA provide this Committee with the Future Years Nuclear Security Plan for these capabilities?

A27b. NNSA's FY 2020-2024 Future Years Nuclear Security Plan will be delivered as part of the President's FY 2020 Budget Request.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Nuclear Posture Review – Fiscal Impact

Q27c. What is the total estimated cost for each capability and when does NNSA expect each would be delivered?

Q27c. The estimate developed during FY 2018 to execute the desired modifications and qualifications for the submarine-launched ballistic missile, which is now referred to as the W76-2 warhead, is $98M, with further refinements to be conducted during FY 2019. NNSA will support the sea-launched cruise missile analysis of alternatives (AoA) as requested from the Department of Defense. NNSA will support these efforts through the Nuclear Weapons Council (NWC), but will not create a formal program until the AoA is concluded.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Nuclear Posture Review – Impact to Current Modernization Program

Q28a. The NNSA is already working to modernize the existing arsenal, and with four ongoing life extension programs, there are very real capacity issues. In fact, former Administrator Klotz said in January that NNSA is "working pretty much at full capacity." It is critical that NNSA has the workforce and infrastructure necessary to complete the existing modernization effort, and that the impact to both on adding new work like the proposals in the NPR are well understood before undertaking these efforts.

What impact will the NPR will have on the current modernization program?

A28a. The Department of Defense and NNSA, through the Nuclear Weapons Council, continue to translate the policy of the Nuclear Posture Review (NPR) into requirements for the Nuclear Security Enterprise. NNSA's FY 2019 Stockpile Stewardship and Management Plan (SSMP) includes NPR impacts to the existing modernization plan as they were understood at the time of the SSMP's publication. NNSA's FY 2020 SSMP will include more detailed information and updates to the modernization plan based on the NPR.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Nuclear Posture Review – Impact to Current Modernization Program

Q28b. How does the NNSA plan to mitigate those impacts?

A28b. NNSA uses a portfolio management approach to balance enterprise risk to cost, schedule and performance. NNSA will balance risk across the enterprise while keeping Congress informed of significant programmatic changes.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Nuclear Posture Review – Impact to Current Modernization Program

Q28c. How will NNSA ensure it has the workforce needed to complete all of these activities?

Q28c. Providing the necessary capabilities to support all phases of the nuclear weapon life cycle depends on a workforce with specialized skills in a broad array of technical fields. Recruiting, retaining, and training the current and future workforce in essential areas of expertise are critical to mission delivery.

To meet increasing mission requirements to have a fully functioning nuclear security enterprise, NNSA must have a workforce of appropriate size and capabilities. The Office of Personnel Management and the NNSA Office of Cost Estimating and Program Evaluation (CEPE) recently conducted studies and identified the need to increase NNSA's Full-time Equivalents to support the mission needs. Utilizing the results of these studies, NNSA is employing a human capital implementation plan to recruit and hire for agency mission critical occupations. Continuing to operate under current staffing constraints without being able to address the increased mission needs for pit production, contributes to vulnerabilities in providing a safe, secure, and effective nuclear security program.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Cost of Current Modernization Program

Q29a. The Congressional Budget Office has estimated the cost of sustaining, operating and modernizing our nuclear deterrent to be $1.2 trillion over 30 years. This is before taking into account the Nuclear Posture Review. So far, this has required significant increases to the Weapons Activities account, which will be difficult to sustain year over year given limited federal funds.

Does NNSA agree with this estimate? If not, why not?

A29a. The estimated cost cited by the Congressional Budget Office includes both Department of Defense (DoD) and DOE/NNSA projected costs associated with the nuclear deterrent – inclusive of modernization, operations and sustainment, nuclear command, control, and communications (NC3), and the weapons laboratories. NNSA cannot comment on the total projected cost of the nuclear deterrent given the inclusion of DoD's project costs.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Cost of Current Modernization Program

Q29b. When do the costs of recapitalizing our nuclear arsenal peak, based on the current program of record?

A29b. Recapitalizing the ageing U.S. nuclear arsenal requires costs for both NNSA and the Department of Defense (DoD). NNSA cannot comment on the total cost profile given the necessary inclusion of DoD programs. In its 2017 report, the Congressional Budget Office projected that recapitalization costs will peak in the early 2030s.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Cost of Current Modernization Program

Q29c. How much will the proposed sea-launched ballistic missile and keeping the B83 in the stockpile add to the cost of the current program of record?

A29c. The estimate developed during FY 2018 to execute the desired modifications and qualifications for the submarine-launched ballistic missile, which is now referred to as the W76-2 warhead, is $98M, with further refinements to be conducted during FY 2019. NNSA was appropriated $65M in FY 2019 for the W76-2 program. On August 28, 2018, the Nuclear Weapons Council (NWC) authorized retention of the B83-1 beyond the date stated in NSPM-12, Fiscal Years 2018-2023 Nuclear Weapons Stockpile Plan. DOE/NNSA is planning, scheduling, and budgeting required program activities to maintain the B83-1 through the NWC-determined retirement date.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Cost of Current Modernization Program

Q29d. How much will the proposed sea-launched cruise missile add to the cost of the current program of record?

A29d. The requirements for the new sea-launched cruise missile have not been established. Until NNSA receives the technical requirements and quantities from the Department of Defense, NNSA cannot estimate the costs of the program.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

B83

Q30a. The Departments of Defense and Energy committed to Congress in 2013 that the B83 gravity bomb would be retired. However, the Nuclear Posture Review proposes to keep the B83 around indefinitely.

How long can the NNSA retain the B83 without performing an alteration and/or life extension program?

A30a. The 2018 Nuclear Posture Review (NPR) guides NNSA to "retain the B83-1 until a suitable replacement is identified". In 2025, alteration programs to replace the limited life components (LLCs), the Gas Transfer System (GTS) and Neutron Generators (NGs), could be required in addition to a new Joint Test Assembly (JTA) for surveillance flight testing. The development and qualification of these activities would need to commence in 2022.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

B83

Q30b. From a technical standpoint, what actions would be required to keep the B83 operating past fiscal year 2019?

A30b. Through 2025, the required actions to maintain the B83 include continued GTS LLC exchanges (LLCEs) with existing hardware, sustained routine maintenance and repairs, and continuation of the annual surveillance activities required to assess the safety and reliability of the B83 weapon system. Beyond 2025, alteration programs to replace the GTS and NGs could be required in addition to a new JTA design for surveillance flight testing. NNSA's FY 2020 SSMP will include more detailed information and updates on the B83 program.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

B83

Q30c. What activities would be required in fiscal years 2020 and beyond, and what is the anticipated cost by fiscal year?

A30c. The B83-1 gravity bomb holds at risk a variety of protected targets. The 2018 Nuclear Posture Review directs sustaining the B83-1 past its current planned retirement date until a suitable replacement is identified. NNSA is coordinating with DOD to determine the period for sustaining the B83-1 and the schedule for restarting limited Alt 353 and Alt 753 programs if necessary. Retaining the B83 in the stockpile costs approximately $40-50M annually. If the B83 is required to remain in the stockpile beyond FY 2025, the additional costs of alteration programs and a new JTA design could be required.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Defense Nuclear Nonproliferation

Q31a. Administrator Gordon-Hagerty, as you know the Defense Nuclear Nonproliferation program plays a critical role in our national security efforts, including verification of treaties and arms agreements and working to keep nuclear materials out of rogue actors. DNN should see an increase in funds as the global threat environment intensifies, given the importance of preventing nuclear materials from falling into the wrong hands. At the very least, DNN must receive stable funding even as the Weapons account balloons.

As the new NNSA Administrator, what role do you see for non-proliferation efforts?

A31a. NNSA's Defense Nuclear Nonproliferation program plays several key roles. First and foremost, under U.S. law, the Department of Energy (DOE) is the U.S. Government's repository of technical expertise on the development, production, verification, and disposition of nuclear weapons and nuclear materials, including all aspects of the verifiable dismantlement of the nuclear fuel cycle. DOE/NNSA is an active participant in the interagency process run by the National Security Council, providing guidance on nuclear weapons, nuclear materials, and the nuclear fuel cycle. Additionally, DOE/NNSA works with international partners and the International Atomic Energy Agency (IAEA) to prevent the spread of materials, equipment, technology, and expertise that could be used in weapons of mass destruction. In particular, as part of our support to IAEA's broader safeguards mission, DOE/NNSA provides technical support, training, and expertise to the IAEA to strengthen their ability to monitor and verify nuclear activities worldwide. Finally, NNSA aims to maintain a balance between the promotion of legitimate nuclear commerce and controlling the spread of weapons usable material, equipment, technology, and expertise. NNSA's nuclear nonproliferation programs play a

critical role in helping ensure that such exports take place in accordance with the highest nonproliferation standards.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Defense Nuclear Nonproliferation

Q31b. From your viewpoint, what are the next big challenges in non-proliferation, and how do you plan to address those challenges?

A31b. As noted in the 2018 Nuclear Posture Review, nuclear nonproliferation will continue to face several enduring challenges: North Korea's nuclear provocations; uncertainty over Iran's nuclear ambitions; threat of China modernizing and expanding its nuclear forces; the danger of nuclear terrorism; and Russia's continued violation of arms control agreements. NNSA is committed to the administration's goal of achieving a final, fully verified denuclearization of the Korean Peninsula, and to ensuring Iran never acquires a nuclear weapon. To help the U.S. Government achieve these goals, NNSA will continue to engage with U.S. interagency and international partners to mitigate the threats posed by North Korea and Iran. NNSA will also continue to strictly control the spread of weapons-usable material, related technology, and expertise with the goal of preventing state actors from acquiring weapons of mass destruction (WMD). Further in that regard, NNSA will continue its work in the United States and abroad to keep WMD-usable materials protected from terrorists. Finally, NNSA will need to continue to work with U.S. interagency and international partners to strengthen the nonproliferation regime and ensure that arms control agreements are verifiable and enforceable.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Suppliers for NNSA Stockpile Work

Q32a. As NNSA continues to work through stockpile modernization efforts, there is certainly a need for materials and supplies.

What efforts does NNSA undertake to ensure that it has adequate suppliers for its many needs?

A32a. NNSA programs monitor the Nuclear Security Enterprise supply chain through their Managing and Operating (M&O) contractors. M&O contractors ensure the adequacy of their supply base by performing technical capability and quality assurance assessments. Technical capability assessments ensure that suppliers employ technically trained and competent engineering personnel who understand the first principles of engineering, and also ensure that suppliers have established stable engineering and analysis capabilities that meet NNSA requirements. Quality assessments ensure suppliers comply with DOE Order 414.1D, NAP-24A, and NQA-1 requirements; employ technically trained and competent manufacturing and inspection personnel; have established stable manufacturing and quality assurance capabilities with appropriate equipment that can measure product conformity and identify/correct issues; and can deliver products that meet DOE/NNSA requirements. Suppliers also must have an established process to manage their sub tier supply base.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Suppliers for NNSA Stockpile Work

Q32b. Specifically, how does NNSA survey companies around the country that may have specialized materials or services that can meet NNSA's needs?

A32b. NNSA's M&O contractors attend forums, conferences, and workshops throughout the year to find new suppliers that have specialized materials or services that can meet NNSA's needs. Additionally, each M&O contractor has a website, which provides guidance and opportunities for upcoming and ongoing mission work to interested companies.

NNSA contractors are surveyed as directed by DOE/NNSA requirements defined in DOE O 414.1D, NAP-24A, and NQA-1. The survey process for each of these requirements includes a technical capability assessment, a quality assurance assessment against the appropriate DOE/NNSA requirements, and a re-assessment of supplier quality assurance requirements on a periodic basis as defined in DOE/NNSA requirements.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Suppliers for NNSA Stockpile Work

Q32c. In particular, how does NNSA ensure outreach to small businesses beyond those in the states where NNSA sites are located?

A32c. NNSA, through its federal staff and facilities management contractors, attends a wide range of small business outreach events, industry days, and conferences nationwide. In addition, NNSA leverages the outreach materials found through the Department of Energy's Office of Small and Disadvantaged Business Utilization (OSDBU) website. The OSDBU website serves as the gateway for any small business to access a number of useful services, programs, points-of-contact, and other useful resource links. Finally, NNSA posts sources sought announcements and solicitations to both the Federal Business Opportunities and FedConnect websites that are available for contractor consideration nationwide.

QUESTION FROM REPRESENTATIVE MARCY KAPTUR

Interoperable Warhead

Q33. The fiscal year 2019 budget proposes funding to "restart Feasibility Study and Design Options" work on the Integrated Warhead or IW-1. When it was requested in fiscal year 2014, Congress did not appropriate funding for the IW-1 and the Navy later requested that the idea be shelved in order to carry out a separate refurbishment of the W88. The Nuclear Posture Review doesn't mention any requirement for interoperable or integrated warheads.

Why is NNSA requesting funding for the IW-1 when the NPR calls for extending the W78 warhead? Does NNSA view the IW-1 and the W78 as interchangeable?

A33. With the release of the 2018 NPR, the NNSA is no longer planning for an IW1 program as previously conceived and no longer uses the name "IW1"; however, for the FY 2019 budget request, prepared just prior to release of the NPR, NNSA used the existing "IW1" budget line out of necessity to identify funds for the W78 Replacement Program. The IW1 program's goals were to: 1) replace capability provided by the aging W78; 2) rebalance sea-leg deployment to reduce risk against technical failure; and 3) along with IW2, enable replacement of capability provided by the W88. While IW1 and W78 replacement are not entirely interchangeable, one of the IW1 program's goals was to address the aging W78.