

Granholtm Written Answers to Energy Committee Questions

NUCLEAR POWER

Murkowski **Question 14:** I was able to get my Nuclear Energy Leadership Act over the finish line last year, which supports the development of advanced reactors and small modular reactors, and has the potential to provide long term, reliable, and sustainable energy in rural Alaska. I understand there have been significant technological developments in the nuclear field, especially since some of the plants were built in your home state of Michigan. How do you think advanced nuclear fits into a climate change mitigation strategy?

Answer 14: I believe advanced nuclear energy is an important and promising technology that we should pursue. If confirmed as Secretary I look forward to working with you to advance emission-free technologies, including forms of advanced nuclear technology.

Manchin **Question 24:** Do you believe that advanced nuclear technologies can become a significant contributor to a low-carbon energy future?

Answer 24: Yes.

Manchini **Question 28:** Nuclear energy is the largest source of clean energy in the United States. Any realistic clean energy future will necessarily require us to sustain and expand the use of nuclear energy. How will you prioritize the role of nuclear energy technologies?

Answer 28: Nuclear energy provides more than 55% of our clean energy and nearly 30% globally, and it is critical to sustain this share of energy use to meet our carbon reduction goals. If confirmed as Secretary, I will work with the Department to continue to support the research, development, and demonstration of technologies to preserve our existing fleet, deploy advanced reactor technologies, and expand nuclear energy to markets beyond electricity to meet our carbon reduction goals in the United States and globally.

Manchin **Question 29:** What specific actions will you take to ensure the U.S. regains its global leadership in nuclear energy?

Answer 29: Many countries are looking at nuclear energy to meet their growing energy needs and are interested in technologies developed in the United States. If confirmed as Secretary, I will support the whole-of-government approach and work with my counterparts across the Interagency and with Congress to empower the U.S. nuclear industry to develop, demonstrate, and export American-made nuclear technology.

Manchin **Question 35:** Multiple nuclear reactors have closed over the past few years. How do you see the future of nuclear energy unfolding in the United States and internationally? What will be DOE's contribution to the future of nuclear power during your tenure?

Answer 35: If confirmed as Secretary, I will support robust research, development, and demonstration of advanced nuclear energy technology and seek to advance DOE's work to commercialize this technology to build and empower American jobs. The Department's Advanced Reactor Demonstration Program (ARDP) will speed the demonstration of a variety of U.S. advanced reactor designs to build a portfolio of new reactors. I will support the whole-of-government approach and work with my counterparts across the Governmental Interagency to empower the U.S. national laboratories, universities, and U.S. nuclear industry to develop, demonstrate, and export American-made nuclear technology.

Manchin Question 36: Will you work to ensure that DOE is equipped with adequate funding to continue researching and developing advanced nuclear reactor designs?

Answer 36: Yes.

Risch Question 1: These are exciting times for nuclear. We are on the forefront of making advanced nuclear reactors a reality, powering missions to Mars and beyond with nuclear energy, and developing microreactors to support the Department of Defense. Nuclear currently provides more than half of the nation's carbon-free electricity – my understanding is that your home state of Michigan generates about one-quarter of its energy from nuclear power.

The new administration's goals for reducing carbon emissions will require substantial growth of nuclear energy. If we are to achieve these goals, it is critical that the INL has the resources it needs to provide the R&D to support these efforts. Will you commit to working with me to ensure that there's a robust nuclear R&D budget for the Office of Nuclear Energy and the INL during your tenure?

Answer 1: Yes. If confirmed as Secretary, I commit to working with you and Congressional partners to ensure an adequate budget for nuclear energy R&D activities.

Risch Question 6: One area of agreement between the Obama and Trump administrations was on the importance of civil nuclear technology exports as a tool for creating jobs, promoting our safety and nonproliferation goals, and sustaining our global influence. This has become increasingly important as Russia and China have sought to dominate global nuclear energy markets, because they know that selling a nuclear reactor to another nation begins what can be a centuries-long relationship encompassing the exchange of technologies, equipment, and political influence. As Secretary of Energy, you would have an important role in both the promotion and control of nuclear energy exports. Do you commit to continuing longstanding efforts to help U.S. firms compete with the state-owned Russian and Chinese nuclear energy exporters?

Answer 6: Yes, if confirmed as Secretary, I commit to supporting a whole-of-government approach to advancing domestic nuclear technologies in the global marketplace while supporting U.S. nonproliferation objectives.

Risch Question 7: INL is home to many unique capabilities, but one that I want to call your attention to is the Advanced Test Reactor. The ATR entered operation on the desert site of INL in 1969 and provides a unique capability for testing and evaluating materials and fuels for our nation's nuclear Navy, as well as providing important capabilities for the commercial fleet, the NNSA, and for medical isotope production. The operations at ATR are critical to our national security, and at over 50 years old it is appropriate to explore if it is time to replace the capabilities that ATR provides so that we can prepare for the future.

Over the past few years, at the direction of DOE and Naval Reactors, INL and the Naval Nuclear Laboratory have studied and presented a business case for extending our nation's strategic thermal irradiation capabilities provided by ATR out to 2085.

Should you be confirmed, I would encourage you to meet with Admiral Caldwell and discuss the best path forward to ensure the unique and valuable capabilities of ATR are available for our nuclear Navy in the coming decades. I look forward to your support for maintaining these important capabilities. Will you commit to working with me on this?

Answer 7: Yes. If confirmed as Secretary, I look forward to learning more about the ATR and the role it plays in supporting the U.S. Navy and working with you and your staff on this issue.

Risch Question 8: The Department of Energy and National Labs contain the most cutting edge research and development capabilities in the world. It is important that DOE develops new capabilities so we can continue to support our country's innovators. One such program is the

Versatile Test Reactor. This specialized fast research reactor can provide a capability we have lacked since the 1990s, and is a critical part of the government's efforts to develop new nuclear technologies. The VTR will operate as an open-access user facility in the DOE national lab system, facilitating academic, public, and private research. Due to its unique capabilities, the VTR could also support our allies. Currently, the R&D work this asset would facilitate is only available for civilian research in Russia. The Energy Act of 2020 authorized the Versatile Test Reactor, but the project currently is not on track to be successful.

a. Congress has asked the Department to explore partnerships with private industry and internationally to make the VTR successful, what will you do on that front?

Answer 8a: If confirmed as Secretary, I will work to ensure DOE builds upon the mechanisms of the Versatile Test Reactor Project Team has established. This includes use of intellectual property and cost-share contributions from the US nuclear industry, as well as capitalizing on their decades of reactor design and construction experience. I also am aware that the Department has signed international collaboration agreements that will facilitate the exchange of technical information and lessons learned.

b. What actions will you take to ensure that VTR, other major projects at DOE, and the clean energy demonstration projects included in the Energy Act are successful?

Answer 8b: If confirmed as Secretary, I will work closely with Congress and the Department to help ensure that these projects are successful.

Risch Question 9: Since 2013, the Department of Energy's Small Modular Reactor Program has supported programmatic, cost-shared funding with private sector companies to advance the development and deployment of first-of-its-kind advanced reactors. This program is working: In 2020, the NuScale Power reactor became the first SMR technology to complete the Nuclear Regulatory Commission's (NRC) rigorous technical review process. Last year DOE awarded a cost-shared grant to the Utah Associated Municipal Power Systems to partially fund the construction of the first NuScale SMR at DOE's Idaho National Laboratory. If this and other planned advanced SMR demonstrations are successful, the U.S. will overtake China and Russia's nuclear ambitions to provide international markets with U.S. origin nuclear technology. These projects will require a sustained funding commitment throughout this decade. I hope you will build on the Department's successful work with the NuScale project and other advanced reactor demonstrations. Will you commit to build upon the successful work with the NuScale project and other advanced reactor demonstrations, if confirmed?

Answer 9: If confirmed as Secretary, I look forward to learning more about the Department's efforts to support the development of small modular reactors and other advanced reactor technologies and to working with you and your staff on this issue.

Risch Question 10: Our nation's 94 operating nuclear reactors provide about 20% of our nation's electricity and more than half of our carbon-free electricity. This year, five reactors, or 5.1 GW of firm carbon-free electricity capacity, are slated to come offline. The loss of these plants, and additional plants that have announced premature retirement this decade, would significantly set back any deep emission reduction effort. In addition, recent premature nuclear plant closures have also resulted in increased emissions as their electricity is primarily replaced by low-cost natural gas, not renewable energy. How can the DOE continue supporting our existing nuclear plants to decrease costs while maintaining safety so they do not prematurely retire?

Answer 10: I am aware that DOE is currently pursuing several research, development, and demonstration pathways to support existing U.S. nuclear power plants to ensure their continued efficient operation, and support reduced U.S. emissions through plant modernization, risk informed safety analysis, physical security, and advanced materials research. If confirmed as Secretary, I will review these initiatives, and other DOE efforts, to ensure the continued efficient operation of the U.S. nuclear power fleet.

Daines **Question 1:** Governor Granholm, if confirmed, do you commit to be source neutral or will you prioritize wind and solar over baseload sources like hydro, coal, or nuclear?

Answer 1: To reach our net zero emissions goals, the United States will need to employ technology solutions for all fuel sources. If confirmed, I fully plan to commit resources to carbon management across the fuel and technology spectrum. I am particularly excited by the opportunities for game-changing advances in carbon capture and advanced nuclear technologies in the next several years.

NUCLEAR WASTE

Manchin **Question 30:** The Nuclear Waste Policy Act (NWPA) directs DOE to site, construct, and operate a geologic repository for high-level waste at Yucca Mountain. DOE has failed to fulfil its statutory obligation to move forward with the repository. How will you ensure DOE compliance with the NWPA?

Answer 30: I support examining the recommendations from the “Blue Ribbon Commission on America's Nuclear Future”, which recommended seeking a consent-based approach to siting our nation’s spent nuclear fuel and high-level radioactive waste. If confirmed, I look forward to working with you and other Members of Congress to make progress towards that goal.

CLEANUP

Wyden **Question 2:** As I mentioned in the hearing, billions of dollars have been spent at Hanford on building technology to turn highly toxic nuclear waste into solid material that can be stored safely, but not a single ounce of waste has been treated yet. The ongoing failures to address the issues have put workers health and safety at significant risk.

How would you increase transparency with respect to worker safety so that we don’t have to rely solely on whistleblowers for information?

Answer 2: While the Department should foster an environment where whistleblowers are free from the threat of retaliation, I agree with you that we should not solely rely on whistleblowers for information. That’s why if confirmed as Secretary, I will continue, and improve upon, efforts to strengthen programs such as the Department’s Employee Concerns Program and the Office of the Ombudsman, among other potential options.

Risch **Question 2:** The INL site is storing a range of spent fuel, including defense-related spent fuel as well as commercial and research fuel from domestic and foreign reactors. In 1995, Idaho and the

DOE entered into a settlement agreement that established a timeline for DOE to treat and remove legacy waste from the state. I want to stress the importance of these cleanup activities at the Lab and encourage you to keep your foot on the accelerator to get this cleanup done – getting it done is good for Idaho, DOE and the future of nuclear energy. As you work with DOE’s Environmental Management program, can you commit to prioritizing resources to continue and accelerate the cleanup mission at the INL?

Answer 2: I understand the importance of continuing the Department’s legacy cleanup activities at INL. If confirmed as Secretary, I commit to working with you and your staff to help ensure the cleanup of INL is conducted in a safe, effective and cost-efficient manner.

Cantwell Question 1: HANFORD: TRI-PARTY AGREEMENT COMPLIANCE DATA
According to the Tri-Party Agreement, DOE is required to identify its compliance-level funding requirements.

• Can you commit to providing me and the state of Washington the Tri-Party agreement the funding compliance numbers for FY 2022 as soon as they are finalized?

Answer 1: Yes, if confirmed as Secretary, we will provide you and the state of WA the compliance-level funding requirements for FY22.

HIGH-LEVEL WASTE REDEFINITION

Lee Question 1: Governor Granholm, Congress recently received a report from the Department of Energy requested in the FY 2018 National Defense Authorization Act. DOE estimates that we could accelerate the timeline for the legacy cleanup of the Nation's nuclear defense complex by roughly a decade and potentially save the U.S. taxpayer in excess of \$200 billion dollars if management and disposal of nuclear waste within the complex is based on the radiological risk of that waste to human health and the environment rather than relying on what activity led to the formation of the waste. The Department's recent report makes clear that while using an approach that defines and characterizes nuclear waste based on the materials risk characteristics can lead to great savings, it does not yet represent a policy decision for complex-wide implementation. I do understand that this new approach has been successfully demonstrated with respect to certain tank waste at the Savannah River site and that a second demonstration is underway.

a. Will you pursue the management and ultimate disposal of radioactive waste in the complex based on the radiological risk that the constituent elements of that waste present to public health and the environment as opposed to the activity that produced that waste?

b. Can you assure that the DOE will promptly complete the ongoing environmental assessment so that the second demonstration of this risk-based definition concept can proceed?

Answer 1: If confirmed as Secretary, I will work to ensure the Department is conducting its important legacy cleanup activities in a safe, effective and cost-efficient manner. I will examine how the Department’s Office of Environmental Management’s high-level waste (HLW) interpretation can support those efforts.

Question 2: Section 3121 of the recently enacted FY '21 National Defense Authorization Act requires the Secretary of Energy to make an annual statement of environmental liabilities for each facility in the complex. Section 3122 of that law requires future year cleanup plans to identify missed milestones for each site. It seems to me that it would be most useful to the Department, the Congress and the affected members of the public if these annual statements also identified an inventory of

discrete waste streams at each facility that would benefit from application of this risk-based approach, the impact of such application to overall liabilities and milestones at each facility and a budget estimate for implementation. Would you concur and make that commitment?

Answer 2: If confirmed as Secretary, I will review the Department's implementation of the HLW interpretation to ensure the Department is conducting its important legacy cleanup activities in a safe, effective, and cost-efficient manner.

NUCLEAR WEAPONS/NNSA

Risch Question 17: The Department's nuclear weapons enterprise has long been underfunded and undervalued. Meanwhile, Russia and China have modernized their nuclear weapons enterprises and improved their capability to produce and sustain their nuclear weapons stockpiles. In recent years, the Department has invested in the U.S. enterprise, but sustained and even greater investments are needed to overcome decades of neglect. **Do you commit to ensure appropriate increases are approved and sustained to modernize the nuclear weapons enterprise?**

Answer 17: Yes.

Cantwell Question 3: NATIONAL NUCLEAR SECURITY ADMINISTRATION WORKFORCE

Ensuring a diverse workforce as the National Nuclear Security Administration is necessary to build the capable and highly skilled workforce we need maintain the Nation's nuclear deterrent.

- Will you work on ensuring a diverse workforce within the NNSA, with a particular focus on increasing diversity and inclusivity in the NNSA's security forces?

Answer 3: Yes.

Daines Question 10: Governor Granholm, Montana is the proud home to one-third of our nation's inter-continental ballistic missiles. Many of these are now over 50 years old. Maintaining a credible nuclear deterrent is vital to our national security, and a core mission of the Department of Energy. If confirmed, will you ensure that the Department remains focused on that mission?

Answer 10: Yes. If I am confirmed as Secretary, I will focus on three missions. First and foremost being the important responsibility of advancing the national security of the United States by ensuring the National Nuclear Security Administration has the tools and resources required to protect our nation.

Daines Question 11: Governor Granholm, earlier this month, Congress passed the National Defense Authorization Act which requires a greater degree of cooperation between the National Nuclear Security Administration and the Pentagon to adequately fund our nuclear modernization efforts. If confirmed, will you commit to maintaining our competitive edge through a robust and credible nuclear deterrent?

Answer 11: Yes.

Hirono Question 2: In recent years, Republicans have made repeated attempts through the National Defense Authorization Act (NDAA) to increase the Department of Defense's role in setting budget priorities for the nuclear weapons program at the DOE's National Nuclear Security Administration (NNSA). I worked with Senators Manchin and Murkowski and others on the Fiscal Year 2022 NDAA to maintain DOE's budget authority over the NNSA. Do you agree with me it is imperative that the weapons program remain under civilian control at the DOE?

Answer 2: Yes, I agree that it is important for DOE to retain its authorities as it relates to the National Nuclear Security Administration and its budgetary responsibilities while also committing to maintaining coordination and transparency with our Department of Defense partners.

Hirono **Question 3:** Last year, there was an effort by some Republicans to resume nuclear weapons testing. This would set a dangerous example to the world and is unnecessary because NNSA's scientific experts certify the safety and security of the nuclear weapons stockpile every year. Will you commit to working with the Secretary of Defense and others in the Administration to oppose any effort to return to nuclear weapons testing?

Answer 3: I am committed to the continued support of the science-based Stockpile Stewardship Program which has enabled us to maintain confidence in the nuclear stockpile without requiring additional nuclear tests for the past 20 plus years.

King **Question 1:** What is your philosophy on nuclear weapons stockpile stewardship, and do you support the bi-partisan consensus of maintaining the nuclear triad and continuing critical infrastructure and warhead modernization directed by President Obama in 2010?

Answer 1: If confirmed, I will continue to support the Stockpile Stewardship Program (SSP) and its role in maintaining the nation's nuclear deterrent. The White House and Department of Defense (DoD), in its role of identifying the requirements to meet the nation's nuclear deterrent objectives, determines whether the nuclear triad represents the optimal approach to meeting those requirements. The Department of Energy will continue to meet the requirements identified by the White House and DoD and execute the warhead and infrastructure modernization programs begun under President Obama in 2010.

Hoeven **Question 7:** Minot Air Force Base in North Dakota is the only base with two legs of the nuclear triad. As such, I closely follow efforts to extend and refurbish our nuclear warheads, including the W87-1 ICBM warhead that will be fielded on the Ground Based Strategic Deterrent (GBSD) and the W80-4 warhead that will be used on the Long Range Stand Off (LRSO) Missile that will replace the aging Air Launched Cruise Missile now carried on the B-52. With five warhead modernization programs underway, NNSA is executing an unprecedented variety of complex component development and production work. Do you support the life extension programs for the W80-4 and W87-1?

Answer 7: The Department of Defense has established the deterrent requirements being addressed by the W80-4 and W87-1 life extension programs. If confirmed, I will continue to support those on-going life extension programs.

DNFSB

Cantwell Question 4: DEFENSE NUCLEAR FACILITY SAFETY BOARD

The Defense Nuclear Facility Safety Board has provided an independent, essential role in ensuring the safety of our nuclear security and environmental management workers for more than three decades, including at the Hanford site.

• If confirmed, do you commit to work constructively and cooperatively with the Board and respect its independence and advice on all manner of safety issues within the complex?

Answer 4: Yes, if confirmed as Secretary I look forward to working closely with the Defense Nuclear Facilities Safety Board and advancing conversations on an MOU between the Department and DNFSB.

URANIUM RESERVE

Daines **Question 6:** Governor Granholm, nuclear power already provides carbon-free, baseload power throughout the United States. Advancements in new nuclear technologies such as small modular reactors, and fission and fusion reactors will only increase the United States ability to provide carbon-free, baseload power to customers. Unfortunately, the United States is falling far short in the production of uranium and other elements needed to power reactors, forcing us to rely on foreign countries for our supply. From a national and energy security point, how important is it for the U.S. to increase production here at home, and what role do you see the newly created Uranium Reserve at DOE playing in preserving domestic production?

Answer 6: Nuclear energy is an important resource that provides emissions-free baseload electricity generation at competitive prices. If confirmed as Secretary, I will follow the direction provided by Congress in allocating \$75 million to the creation of the Uranium Reserve in the *Fiscal Year 2021 Consolidated Appropriations Act*.