



CHAIRMAN

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

June 14, 2017

The Honorable Thomas R. Carper  
Ranking Member, Committee on  
Environment and Public Works  
United States Senate  
456 Dirksen Senate Office Building  
Washington, D.C. 20510-6175

Dear Ranking Member Carper:

I appeared before the Committee on Environment and Public Works on June 13, 2017, at a hearing entitled, "Hearing on the Nominations of Kristine Svinicki (Reappointment), Annie Caputo and David Wright to be Members of the U.S. Nuclear Regulatory Commission, and the Nomination of Susan Bodine to be Assistant Administrator of the Office of Enforcement and Compliance Assurance of the U.S. Environmental Protection Agency." In response to the Committee's letter of June 13, 2017, enclosed please find my responses to questions for the record, directed to me, from that hearing.

If I can be of further assistance, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read "KS", written in a cursive style.

Kristine L. Svinicki

Enclosure: As stated

Identical letter sent to the Honorable John Barrasso.

**Senate Environment and Public Works Committee  
Hearing entitled, “Hearing on the Nominations of Kristine Svinicki  
(Reappointment), Annie Caputo and David Wright to be Members of the U.S.  
Nuclear Regulatory Commission, and the Nomination of Susan Bodine to be  
Assistant Administrator of the Office of Enforcement and Compliance Assurance  
of the U.S. Environmental Protection Agency.”**

**June 13, 2017**

**Questions for the Record for Kristine Svinicki**

**THE HONORABLE COREY BOOKER**

**QUESTION 1.**

Some private sector companies are working on new technologies such as fusion reactors and sub-critical reactors that are not currently subject to NRC review. If NRC was to amend its definition of “nuclear reactor” to cover advanced reactors such as these, do you believe that NRC should subject these technologies to the existing regulatory framework designed for light water reactors, or would you expect that NRC would instead quickly develop a more appropriate risk based regulation for these types of inherently safer technologies?

**ANSWER.**

While the current regulations provide the NRC with sufficient flexibility to review and appropriately make conclusions on the safety and security on all reactor designs, the NRC acknowledges the potential inefficiencies for non-light water reactor (LWR) applications reviewed against existing LWR criteria. Therefore, the NRC is enhancing its existing framework in a technology-neutral manner to increase efficiency, timeliness, and predictability of non-LWR reviews. If reconfirmed as Chairman, I commit to continuing to support these efforts.

**THE HONORABLE EDWARD MARKEY**

**QUESTION 2.**

The 2005 Energy Policy Act includes a provision, which I authored, that mandates that the NRC conduct security inspections at U.S. nuclear power plants. These inspections must include force-on-force exercises, where a mock adversary force conducts a simulated attack on a power plant to probe potential gaps in the plant’s security.

These exercises allow the NRC to ensure that nuclear power plants are adequately protected against terrorists or other bad actors. The alternative – of having plant operators run their own exercises – would not only violate the law, but it would also create a clear conflict of interest, and undermine public safety.

In the past, the nuclear industry lobbied the NRC to get rid of its force-on-force exercises in favor of exercises conducted by power plant operators. In effect, this would have nuclear power plant operators inspect themselves, in violation of the law.

**Do you support security evaluations of nuclear power plants that are conducted by the Nuclear Regulatory Commission, and not by licensees?**

**ANSWER.**

Section 170D of the Atomic Energy Act of 1954, as amended, requires the NRC to conduct triennial security evaluations at facilities designated by the Commission. These security evaluations must include a force-on-force (FOF) exercise that simulates security threats in accordance with the Design Basis Threat to the maximum extent practicable. Additionally, the Commission must mitigate any potential conflict of interest that could influence the results of an FOF exercise. Section 170D does not specifically state that the NRC must conduct these FOF exercises. If the NRC was petitioned to amend its regulations to have licensee-conducted FOF exercises, the Commission would need to determine whether that proposal would meet the requirements of Section 170D in order for such a change to be permissible. This determination has not been made.

**QUESTION 3.**

**When Entergy announced its intention to cease operations at the Pilgrim Nuclear Power Station, the Nuclear Regulatory Commission promised that the closure would “not relieve [Entergy] of the responsibility of running that plant as safely as possible until the end of its life.”**

**But in the last several months, the NRC has broken that promise by providing Pilgrim with exemptions from critical safety upgrades. After the Fukushima nuclear disaster in 2011, the Fukushima Near-Term Task Force recommended a series of safety upgrade for America’s nuclear fleet. The NRC opted to accept these recommendations, and apply them to reactors of the same design as Fukushima, like Pilgrim.**

**Among the critical safety upgrades were the requirement to reevaluate and address the risk of earthquakes and floods. The other critical safety upgrade was to install hardened containment vents capable of operating under severe accident conditions. These are meant to prevent the release of radioactivity in the event of a terrorist attack or severe accident.**

**But instead of requiring Entergy to carry out these commonsense safety upgrades, the NRC provided Pilgrim with exemptions. Do you believe that providing exemptions from NRC safety regulations to U.S. nuclear plants increases public confidence in the safe operation of those plants?**

**ANSWER.**

The practice of considering exemptions is a well-established part of the NRC’s regulatory process that allows licensees to address site-specific situations or implement alternative approaches for circumstances not necessarily contemplated in the regulations. A key part of the NRC’s review of an exemption request is the determination that granting the exemption will not present an undue risk to the public health and safety and is consistent with the common defense and security. This determination, combined with the NRC’s inspection oversight of the licensee’s implementation of safety regulations, license requirements, and the conditions of the exemption, provide assurance that the safe operations of facilities to which an exemption has been granted will be maintained.

**QUESTION 4.**

**Do you intend to continue granting exemptions to nuclear plants that have announced their intention to shut down operations?**

**ANSWER.**

The NRC considers the use of exemptions to be an appropriate and essential part of our regulatory program. Exemptions allow licensees to address site-specific situations or implement alternative approaches for circumstances not necessarily contemplated in the regulations or to seek regulatory relief from existing requirements to address special circumstances, such as when application of the regulation in the particular circumstance is not necessary to achieve the underlying purpose of the rule, or to avoid undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted. The exemption process also allows the NRC to grant appropriate regulatory relief that permits permanently shut down power reactor licensees to develop programs that are commensurate with the site-specific risks, and to focus resources on decommissioning, while continuing to maintain adequate measures to protect the health and safety of the public and not endanger common defense and security.

Several reactors in the U.S. are transitioning to decommissioning. During the transition period, numerous site-specific licensing actions are required to revise the plant's licensing basis to reflect the diminished potential for accidents and reduced risk after permanent shutdown and defueling. The NRC's current process establishes an appropriate regulatory framework for decommissioning a plant; however, the NRC has initiated a decommissioning rulemaking that could reduce the numerous licensing actions needed during the transition period. The proposed rule will be provided for Commission consideration in 2018. Until the rulemaking is complete, NRC and licensees will continue to follow the existing licensing action approach to transition to decommissioning, which may include granting site-specific exemptions on a case-by-case basis.

**QUESTION 5.**

**The recent National Academies of Sciences report on lessons learned from the Fukushima nuclear disaster noted that the risk of a spent nuclear fuel fire may actually rise at a decommissioned nuclear plant, because "the pool may be filled to near capacity and some plant safety systems may be inoperable." Yet the Commission has made it a habit of providing exemptions to decommissioned reactors from emergency response and security regulations. Exempting these plants from NRC rules wholesale permits the nuclear industry to lower the safety margin at decommissioned reactors, which continue to have dangerous spent nuclear fuel on site.**

**Do you agree that the danger of accidents at spent-fuel pools at decommissioned reactors warrants the application of all emergency response and security regulations that are designed to protect against spent fuel fires?**

**ANSWER.**

While NRC regulations support the agency's statutory mission to promote the common defense and security and to protect the health and safety of the public, a licensee may at times seek exemptions from emergency planning or security requirements to reflect the lower risk and reduced security focus associated with a power reactor being permanently shut down. These exemption requests are evaluated on a case-by-case basis, and are granted only if a licensee demonstrates that the applicable regulatory criteria in 10 CFR § 50.12(a) or 10 CFR § 73.5 are met.

**QUESTION 6.**

**In June 2016, I wrote to the NRC to urge the Commission to re-examine and address the risk to public safety posed by overcrowded spent-fuel pools at commercial reactors, in light of two reports that identified serious gaps in the NRC’s previous analysis. A fire in a densely-packed spent-fuel pool could result in health and economic consequences comparable to those caused by an accident at an operating reactor, including the displacement of millions of people and untold economic damage. These risks could be much reduced by transferring spent fuel to dry casks, which are more resilient against accidents or attacks.**

**The National Academy of Sciences (NAS) report, *Lessons Learned from the Fukushima Nuclear Accident for Improving Safety and Security of U.S. Nuclear Plants*, recommends that the NRC “perform a spent fuel storage risk assessment to elucidate the risks and potential benefits of expedited transfer of spent fuel from pools to dry casks.” Do you intend to carry out this recommendation? If not, why not?**

**ANSWER.**

The U.S. Nuclear Regulatory Commission (NRC) staff has previously evaluated expediting the transfer of spent fuel from pools to dry casks. Based on the staff’s assessment, the Commission decided that, due to the low risk to public health and safety from spent fuel pool storage, additional regulatory action is not needed. The agency’s evaluation was supported by several studies of spent fuel storage, for both pools and dry cask storage, performed or sponsored by the NRC. The NRC also evaluates operational experience and risk assessments performed by the scientific and international community, industry, and members of the public to ensure the risks posed by spent fuel pools and dry cask storage are understood and are adequately addressed by regulatory requirements. In addition, the NRC staff participates in international activities associated with assessing and addressing potential issues related to the storage of spent fuel. The NRC staff reassessed the NAS recommendation and found that existing studies and ongoing activities noted above are sufficient to support regulatory decisions on the safety and security of spent fuel pools.

**QUESTION 7.**

**The NAS report recommended that the NRC “strengthen their capabilities for identifying, evaluating, and managing the risks from terrorist attacks,” and that the NRC’s spent fuel storage risk assessment “should address accident and sabotage risks.” Do you agree with the NAS recommendation that the NRC must fully account for the risk of terrorism and sabotage in its re-assessment of spent-fuel risks? If not, why not?**

**ANSWER.**

Plant security is one of many topics within the NRC’s risk-informed, performance-based framework that is assessed in combination with, but not fully integrated into, probabilistic risk assessment models. The NRC has used and will continue to use risk insights in the security area to ensure an appropriate level of security is maintained at NRC-regulated facilities. Security issues were extensively assessed in studies and regulatory analyses following the terrorist attacks of September 11, 2001. As a result, enhanced security requirements were

established to reduce the risks of radiological sabotage at nuclear power plants, including consideration of spent fuel pools.

**QUESTION 8.           What steps, if any, will you support to strengthen the NRC’s capabilities for identifying, evaluating, and managing the risk of terrorist attacks on nuclear facilities, including spent-fuel storage sites?**

**ANSWER.**

The NRC works in close cooperation with other Federal agencies to continually assess the possible nature and likelihood of security threats, and determine if changes to plant security programs are needed. In addition, the NRC and industry response to the September 11, 2001, terrorist attacks included plant changes as part of mitigating strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with loss of large areas of the plant due to explosions or fire. The NRC staff assessed the NAS recommendation and did not identify a need to initiate new activities or to otherwise redirect resources to revise existing programs or to accelerate initiatives to enhance the use of risk assessment techniques in the security area.

**QUESTION 9.           As the Fukushima disaster demonstrated, a major release of radioactivity at a nuclear plant could have significant societal effects. As such, to fully capture spent-fuel storage risks, the NAS report recommended that the NRC’s analysis “[c]onsider societal, economic, and health consequences” of a spent-fuel fire, as well as the direct risks of radioactive release. Do you agree with this recommendation? If not, why not?**

**ANSWER.**

The NRC staff evaluated changing its approach to analyzing severe accident scenarios and related costs and benefits of new regulatory requirements after the accident at the Fukushima Dai-ichi nuclear power plant in Japan. The staff’s 2012 assessment was provided to the Commission in the publicly available report, "Consideration of Economic Consequences within the U.S. Nuclear Regulatory Commission's Regulatory Framework,"(SECY-12-0110). At that time, the Commission determined that major changes such as those cited in the NAS recommendation were not needed to support its regulatory decisions on whether new requirements were needed for operating nuclear power plants. Further, in performing economic analyses, the NRC does consider public health, occupational health, environmental considerations, and property impacts.

**QUESTION 10.       According to the NAS report, the NRC “has not carried out an independent examination of surveillance and security measures for protecting stored spent fuel,” as recommended by the NAS’s 2006 report. As such, the 2016 NAS report recommended that the NRC fulfill this recommendation, and that the NRC’s analysis “should include an examination of the effectiveness of [the NRC’s] programs for mitigating insider threats.” Do you support carrying out an independent examination, as recommended by both NAS studies? If not, why not?**

ANSWER.

The NRC establishes strategic goals and measures and issues routine reports regarding its performance related to its safety and security goals. In the security arena, the NRC also works closely with other Federal agencies to identify and address possible threats. In addition to the NAS studies, the NRC has obtained independent assessments in the security area from the NRC's Office of the Inspector General (OIG), U.S. Government Accountability Office (GAO), and other oversight bodies. Further, the staff routinely assesses information gained from operating experience, the inspection program, insights from drills and exercises, and the agency's participation in various international activities. Therefore, after evaluating the NAS recommendation, the NRC staff concluded that another independent assessment is not necessary, given that the NRC's requirements to ensure security of nuclear power plants and spent fuel storage will continue to be the subject of independent reviews by the OIG, GAO, and other organizations. The staff will also continue to benefit from independent insights gained from interactions with other Federal agencies, international bodies, licensees, and other stakeholders.

**QUESTION 11.**

**According to an article in the May 26 issue of *Science* magazine, the NRC's previous assessment of spent-fuel risks ignored the potential damage from a spent fuel fire beyond 50 miles of a plant, despite the fact that a significant portion of the radiation exposure would occur beyond that radius. Failing to account for this factor led the NRC to underestimate the destruction of a spent fuel fire. Do you support inclusion of contamination and other effects beyond 50 miles in the NRC's assessment of spent fuel fire risks?**

ANSWER.

The NRC will continue to evaluate any new information that arises in this area and assess its impact to existing regulatory requirements.

**QUESTION 12.**

**According to the *Science* magazine article, the NRC's previous analysis also assumed that, in the event of a spent fuel fire, contaminated areas could be effectively cleaned up within a one year timeframe, despite evidence from both the Chernobyl and Fukushima accidents. Do you support revising that assumption in any re-assessment by the Commission of spent-fuel risks?**

ANSWER.

The NRC will evaluate any new information that arises in this area and assess its impact to existing regulatory requirements.

**QUESTION 13.**

**According to the recent NAS study, under NRC rules, if the risk of prompt and cancer fatalities in the vicinity of a nuclear accident falls below a certain threshold, the NRC is not required to undertake a cost-benefit analysis of strategies for mitigating that risk. As a result of this rule, even though a spent-fuel fire could displace millions of people and result in trillions in economic damage, the NRC would not be required to evaluate the costs and benefits of strategies to mitigate such an event because it would not necessarily produce a significantly higher risk of fatalities in the immediate vicinity of the plant. To address this obvious deficiency, the NAS study cites experts who have suggested that the NRC should amend its rules by**

**setting a limit on the likelihood that a large number of people would be displaced for a long-term period following a release of radioactive fall-out. Do you support implementing such a rule?**

ANSWER.

The NRC considers a broad range of costs and benefits when determining whether to require safety enhancements at nuclear power plants. The NRC's NUREG/BR-0184, "Regulatory Analysis Technical Evaluation Handbook," directs that a value-impact analysis consider a wide range of attributes that could be affected by the proposed regulatory action (e.g., a proposed safety enhancement at a nuclear power plant). One of these attributes, discussed in Section 5 of NUREG/BR-0184, considers changes to offsite property in various forms, including costs of evacuations and indirect impacts to tourism and other industries. This same analysis also considers interdiction measures, such as decontamination and cleanup costs.

**THE HONORABLE BERNARD SANDERS**

**QUESTION 14.**

**As you know, the Vermont Yankee Nuclear Power Station is in the process of decommissioning. The Nuclear Regulatory Commission (NRC) requested comments on a draft regulatory basis ending this month to support a rulemaking that would amend NRC's regulations for the decommissioning of nuclear power reactors. The NRC's goals in amending these regulations would be to provide for an efficient decommissioning process; reduce the need for exemptions from existing regulations; address other decommissioning issues deemed relevant by the NRC staff; and support the principles of good regulation, including openness, clarity, and reliability. If confirmed, will you commit to supporting the following decommissioning requirements for the decommissioning rulemaking? If not, why?**

- **The enhancement of community involvement by requiring licensees of decommissioning reactors to include state and local officials' input into licensees' decommissioning plans;**
- **that decommissioning funds are used strictly for statutorily-authorized purposes;**
- **that spent nuclear fuel be removed from wet storage and placed into safer dry cask storage as quickly as possible;**
- **that the site of the plant is rapidly returned to beneficial use instead of decades after the plant ceases operations, and that licensees maintain or obtain the financial resources necessary to do so; and**
- **that all emergency preparedness and response, and security resources and licensing requirements, remain in place until all the spent nuclear fuel is placed into safer dry cask storage or removed from the site.**

ANSWER.

At this stage of the rulemaking process, as a member of the Commission, voicing support for specific issues could impede the open and transparent rulemaking process employed by the

staff as it engages with the public and stakeholders in formulating the draft and final rule, which NRC Staff will then present to the Commission for its consideration.

**QUESTION 15.      What do you believe should be the process for reviewing and processing public comments in the rulemaking and other formal proceedings? How should public comments be weighed by the Commission against comments from the industry?**

**ANSWER.**

The NRC Staff adheres closely to the Administrative Procedure Act in all aspects of its rulemaking process. This includes the notice and comment process whereby NRC Staff engages with the public to receive comments on its proposed rules. Each comment is independently evaluated by the NRC Staff as it refines the draft rule into the final rule. If confirmed, I will continue to support the NRC Staff in this process and ensure that the Staff closely adhere to the requirements in the Administrative Procedures Act.

**QUESTION 16.      How should the NRC educate the public about the existence and meaning of the ongoing decommissioning rulemaking process? What should be NRC's plan for community outreach for the remainder of this decommissioning rulemaking process?**

**ANSWER.**

The NRC extends opportunities to participate in the agency's regulatory process, including rulemaking activities, to a diverse body of stakeholders and the general public. Typically, the public is given 75 to 90 days to provide written comments for consideration on rulemaking actions. The NRC uses the government-wide Web site <http://www.regulations.gov> to provide an easy way for members of the public to access and comment on NRC rulemaking actions.

In the case of the decommissioning rulemaking, the NRC issued An Advance Notice of Proposed Rulemaking in November 2015. The NRC received 161 public comment submissions, which are being considered as part of the development of the regulatory basis for the proposed rule. A proposed rule is expected to be provided for the consideration of the Commission in May of next year. If the proposed rule is approved by the Commission, the NRC will subsequently seek public comments to help inform the final rule.

**QUESTION 17.      Should NRC plan public field meetings to gather comments or testimony from communities where nuclear plants are decommissioning now, or will be soon? If not, why?**

**ANSWER.**

The NRC has hosted public meetings to discuss the decommissioning rule. While the NRC may not be able to host meetings near all the nuclear plants that have announced premature shutdown, the NRC offers stakeholders the option to participate in our public meetings in a variety of ways, for example, they can participate in person or via telephone conference. The agency has also expanded its use of Web conferencing to allow participation by anyone with access to a computer, minimizing travel costs and increasing opportunities for public involvement.

**QUESTION 18.      What is the justification for the NRC to continuously waive its own regulations, especially those pertaining to the decommissioning**

**trust fund, even though it is working to create new decommissioning rules?**

ANSWER.

A licensee may at times seek exemptions from emergency planning requirements to reflect the lower risk and reduced security focus associated with a power reactor being permanently shut down. These exemption requests are evaluated on a case-by-case basis, and are granted only if a licensee demonstrates that the applicable regulatory criteria in 10 CFR 50.12(a) or 10 CFR 73.5 are met.

**QUESTION 19.      What justification is there for the NRC to approve withdrawals from Vermont Yankee's Decommissioning Trust Fund for spent fuel management when NRC's regulations expressly prohibit such use? (10 C.F.R. § 50. 75 at FN 1.)**

ANSWER.

Under NRC regulations, some licensees choose to place funds in their decommissioning trusts to pay for costs associated with spent fuel management and site restoration. Vermont Yankee Nuclear Power Station sought regulatory exemptions to use decommissioning trust funds for spent fuel management expenditures on the grounds that the amount of money projected to be in the fund exceeded the amount projected to be needed for radiological decommissioning. The NRC has approved the request to use these excess funds, consistent with the criteria set forth in Title 10 of the Code of Federal Regulations (10 CFR) 50.12.

In approving this exemption, allowing withdrawals from decommissioning trust funds for spent fuel management, the staff acted under the authority delegated to it by the Commission. The staff found the exemptions were authorized by law, concluded the exemptions presented no undue risk to public health and safety and were consistent with the common defense and security, and determined that special circumstances existed.

**QUESTION 20.      Former NRC Chair Allison Macfarlane authored a paper in 2003 along with other experts that concluded that dry cask storage offers compelling advantages over wet pool storage: it is safer and it is less prone to failure. They recommended that spent fuel should be transferred from wet pools to dry cask storage within five years of discharge to reduce the risk of fire and subsequent radioactive contamination of air and land. Do you have a position on dry cask versus wet pool storage? If confirmed, will you commit to supporting more studies of this issue?**

ANSWER.

The NRC's responsibility is to ensure that spent nuclear fuel is managed safely and securely in either wet or dry storage. Both storage modes have been determined to be safe. In May of 2014, the Commission approved the staff's recommendation not to pursue additional study to assess possible regulatory action to require expeditious transfer of spent fuel from nuclear power plants' spent fuel pools to dry cask storage. In my vote on this question, I noted the large body of evidence presented by the staff, and concluded that this record, taken as a whole, overwhelmingly supported the staff's recommendation. If reconfirmed, I would support more studies of this issue should new and significant information on this matter be developed.

**QUESTION 21.**

**State regulatory officials from Vermont have raised concerns that the NRC is less likely to consider commentary received from state and local governments on reactor license change requests, and NRC rulemaking and regulatory guidance efforts, than commentary from nuclear power plant operators (e.g. Entergy, Exelon and First Energy) and nuclear power industry organizations such as the Nuclear Energy Institute (NEI). If confirmed, what steps would you take to assure that commentary and concerns expressed by state and local governments, or other nuclear power plant stakeholders, are given consideration equal to that already enjoyed by nuclear power plant operators and their supporters?**

**ANSWER.**

Under the Administrative Procedure Act and the Atomic Energy Act of 1954, as amended, the NRC has an obligation to provide stakeholders, including state and local governments, with an opportunity to participate in rulemakings and adjudications and must consider the input from all entities in developing the final agency action. As an additional matter, the agency frequently makes its guidance documents available to members of the public for a similar opportunity to comment. The State of Vermont has often participated in these activities, and last year prevailed in its adjudicatory claim that the agency staff should have prepared an environmental assessment for an exemption request related to the Vermont Yankee decommissioning fund. *Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-16-17, 84 NRC 99 (2016). If reconfirmed, I commit to ensuring that the agency continues to meet its legal obligation to consider input from interested stakeholders in an even-handed manner.

**QUESTION 22.**

**To date, nuclear power plants that have permanently shut down have been permitted to eliminate their offsite Emergency Planning Zones (EPZs) roughly 15 to 20 months after cessation of power generation. The risk of a spent fuel fire resulting from a significant loss of spent fuel pool water inventory is greatly reduced, but a reduction in risk is not an elimination of risk. A reduced risk of a spent fuel fire still requires a significant offsite emergency response that requires drills or exercises to demonstrate proficiency in response and funding to maintain essential emergency response equipment and staff. If confirmed, will you support maintaining offsite EPZs for permanently shut down nuclear power plants until such time that all spent fuel is removed from onsite spent fuel pools?**

**ANSWER.**

Following the permanent removal of all spent fuel from the reactor vessel, the range of events that can have significant offsite consequences is greatly reduced. As a result, some decommissioning licensees have requested relief from emergency planning requirements that do not reflect the reduced risk. If these exemptions are granted, licensees must continue to maintain an onsite emergency plan addressing the declaration of an emergency up to the second-lowest classification level (“Alert”), capability to notify licensee personnel and offsite authorities of emergencies, onsite exercises with the opportunity for offsite response organization participation, arrangements for offsite response organizations (i.e., law

enforcement, fire and medical services) that could respond to onsite emergencies, and coordination with designated offsite government officials following an event declaration so that, if needed, offsite authorities can implement appropriate response actions. If reconfirmed, I will continue to approve exemptions that are authorized by law and maintain an appropriate level of safety at the facility in question, subject to the NRC staff's specific evaluation.

**QUESTION 23.**      **When NRC staff respond to concerns raised by state or local government officials, or individual concerned citizens, they rely heavily on references to voluminous regulatory documents which are difficult to follow, or use jargon that only makes sense to other NRC staff. If confirmed, what actions would you consider taking to facilitate clear communication by NRC officials with lay members of the public?**

**ANSWER.**

The Commission has directed staff to make greater use of plain language when speaking to the public, particularly about high profile events, such as the nuclear accident at Fukushima-Daiichi in Japan. In addition, the NRC's Executive Director for Operations has issued guidance to the staff on improving the quality of documents, emphasizing clarity of writing and the use of plain language, with links to training opportunities. Finally, the agency held approximately 1,000 public meetings last year, at many of which members of the public had opportunities to ask the technical staff questions or engage in discussions before or after the meeting. These meetings provide an important opportunity for members of the public to better understand regulatory issues. If confirmed, I will continue to emphasize the need for clear communications, consistent with the Principles of Good Regulation.

**QUESTION 24.**      **One significant source of frustration for state and local governments, and individuals who are following nuclear power plant decommissioning efforts, is that the process of complete decommissioning and site restoration is under the jurisdiction of multiple federal agencies in addition to the NRC, such as the Environmental Protection Agency, the Department of Energy, the Department of Transportation, and the Department of Homeland Security, just to name a few. If confirmed, what steps would you take to assure that the scope of regulatory authority of all federal agencies with jurisdiction is clear to all stakeholders?**

**ANSWER.**

As discussed above in response to question 23, the NRC has undertaken extensive efforts in recent years to improve the clarity of its communications with interested stakeholders. If reconfirmed, I will continue to support these efforts.

**QUESTION 25.**      **What do you believe is the future of nuclear power in this country?**

ANSWER.

Nuclear power is likely to provide some fractional component of U.S. energy supply in the future at levels dependent on economic and other factors outside of the NRC's jurisdiction.

**QUESTION 26.      If confirmed, what role do you believe you should play—if any—as Commissioner in supporting the nuclear power industry?**

ANSWER.

As an independent agency, the NRC does not play a promotional role for the nuclear power industry. The mission of the NRC under law is to license and regulate the Nation's civilian use of radioactive materials to protect public health and safety and promote the common defense and security.

**QUESTION 27.      According to recent Energy Information Agency estimates, the generating capacity from nuclear power will drop from 20 percent to 11 percent by 2050. If confirmed, how will you ensure safety during this time of mass decommissioning?**

ANSWER.

The NRC ensures that safety requirements are being met throughout the decommissioning process by reviewing decommissioning or license termination plans, conducting inspections, and monitoring the status of activities to ensure that radioactive contamination is reduced or stabilized. The agency's previous experience in the 1990s, and currently, with groups of nuclear power plant ceasing operations before the end of their license terms and decommissioning at the same time, provided lessons learned regarding the safety oversight program for decommissioning sites. As more facilities complete decommissioning, the NRC has implemented those lessons learned in order to improve the effectiveness and efficiency of the safety oversight program for decommissioning sites and is currently undergoing rulemaking to further increase effectiveness and efficiency. If reconfirmed, I will continue to support these activities.

**QUESTION 28.      Most of the plants currently being decommissioned across the U.S. are doing so because they are not economically competitive. Some have proposed easing safety and other regulatory burdens to help the economic viability of the nuclear fleet. If regulations on existing and new power plants are decreased, how will you ensure the safety of our nuclear fleet?**

ANSWER.

While the Commission is aware of the economic pressures resulting from competition in the energy sector generally, the Commission's role as a regulator is to ensure that the Nation's nuclear plants operate safely, consistent with the agency's health and safety mission. The NRC will continue to maintain adequate measures to protect the health and safety of the public and not endanger common defense and security. If reconfirmed, I will continue to support these efforts.

**QUESTION 29.      If confirmed, how will you ensure the public safety of next-generation nuclear reactors that implement advanced technologies?**

ANSWER.

NRC maintains communication with and awareness of the Department of Energy and private industry activities so that we are aware of new and emerging technologies. This enables NRC to address regulatory policy issues in a timely manner and to be prepared to engage in pre-application and licensing reviews to ensure the safety and security of licensed designs.

Throughout the preparatory activities, we will ensure that the focus remains on safety -- NRC will independently verify applicant's data, determine safety margins, and explore uncertainties. If reconfirmed, I will continue to support these activities.

**QUESTION 30.      How will the potential development of advanced nuclear technologies affect the problems NRC is currently confronting in storing spent nuclear fuel long-term?**

ANSWER.

The NRC expects that its current regulatory structure provides the necessary flexibility through the use of a risk-informed, performance-based framework to accommodate on-site storage, potential offsite interim storage and, when available, geologic disposal of alternate waste forms arising from advanced reactor fuel cycles.

**QUESTION 31.      Currently the U.S. has no permanent storage for spent nuclear fuel. Where do you anticipate that spent nuclear fuel from next-generation nuclear reactors will be stored?**

ANSWER.

For spent fuel and high-level waste disposal, the NRC expects that the use of a risk-informed, performance-based framework would provide adequate flexibility to accommodate on-site storage, potential offsite interim storage and, when available, geologic disposal of alternate waste forms arising from advanced reactor fuel cycles.

**QUESTION 32.      The March 2011 Fukushima nuclear accident prompted the NRC to review its own regulations. The Commission's Fukushima Task Force, consisting of NRC experts with 135 years of nuclear regulatory expertise among them, made a range of key recommendations for improving nuclear plant safety. The final report included 12 recommendations ranging from requirements to upgrade seismic and flood protections to protections against the long power outages that were the ultimate cause of the Japanese meltdowns. They also concluded that all of the recommendations were necessary for the "adequate protection" of nuclear power plants. Despite the repeated urging of its own experts, the Commission has so far refused to make these recommendations mandatory. What steps will you take to ensure that the Commission revisits this decision and does, in fact, adopt the Task Force's safety recommendations as mandatory?**

ANSWER.

Following the issuance of the Task Force Report, the NRC staff prioritized the recommendations based on the urgency of the action and the need for additional information to develop an approach. The NRC staff has since evaluated all of the recommendations and developed an approach to addressing them. The orders, in particular, are mandatory. For example, the majority of plants are in compliance with the Mitigating Strategies Order, which requires plants to be able to maintain safety functions during long power outages. The need for upgrades for seismic and flooding protections will be determined on a plant-specific basis based on the results of ongoing evaluations; in many cases, plants have made interim improvements while the more detailed evaluations are being completed. The most safety-significant activities are either complete or progressing under clearly defined processes. If reconfirmed, I will continue to support the agency's plan for prioritizing and implementing the recommendations from the Task Force Report.

QUESTION 33.

**A paper published in *Science* last month by nuclear experts from the Union of Concerned Scientists and Princeton University argued that the NRC places the U.S. at risk of disasters like Fukushima because of problems in its approach to assessing the risks and benefits of safety improvements. The authors suggest that NRC should reform its risk assessments in the following ways (see below). Do you concur that these corrections to current NRC risk assessments are needed? If not, why? If so, how will you address these issues as a Commissioner, if confirmed?**

- **Take into account the possibility of a terrorist attack in regulatory decisions such as the one on whether or not to require the nuclear utilities to remove spent fuel to dry cask storage after 5 years.**
- **Take into account accident consequences beyond 50 miles of the site.**
- **Make assumptions concerning population relocation, and therefore property losses, after a nuclear accident consistent with the EPA's guidance concerning dose levels.**
- **Make realistic assumptions concerning the efficacy and speed of decontamination actions.**
- **Update the NRC's assumption concerning the value of a life lost to radiation-induced cancer by a factor of 2.5, as recommended by the NRC staff.**

ANSWER.

Over the past several years, the NRC staff has evaluated these issues. In the first four cases, the staff has found that the agency's existing approach provides for reasonable assurance of adequate protection of public health and safety and common defense and security. The Commission has endorsed the staff's findings and recommendations in these matters. The staff is reviewing the article referenced in this question. The staff's proposal regarding the dollar per person-rem conversion factor (which is described in the fifth case above) remains under Commission review and deliberation.

QUESTION 34.

**A February 2017 report by Union of Concerned Scientists stated, "Just as nuclear plant owners have downplayed and dismissed clear and present signs about safety culture problems at their plants, the data suggest that the NRC's management is just as dismissive of**

**indications that it has a poor safety culture.” Are you concerned that staff at nuclear power plants and the NRC are reluctant to report safety problems because of the lack of trust between workforce and management? If so, how can NRC address the lack of a nuclear safety culture, and lessen risks to public and environmental safety? If not, what evidence do you have that NRC management maintains a robust safety culture?**

ANSWER.

Safety and security are the primary pillars of the NRC’s regulatory mission and consideration of both is an underlying principle of the Safety Culture Policy Statement issued in 2011. The Policy Statement communicated the Commission’s expectations that individual nuclear power plants establish and monitor a positive safety culture commensurate with the safety and security significance of their activities.

The NRC assesses our licensees’ Safety Conscious Work Environment (SCWE) through inspections, responses to allegations, and evaluation of performance deficiencies with a SCWE cross-cutting aspect. The NRC takes action, such as issuing chilling effect letters and orders, when it concludes additional actions are warranted to ensure that licensees take appropriate actions to foster a robust SCWE and safety culture.

Internally, the NRC is committed to fulfilling our important safety and security mission, while continuing to nurture an environment that reflects the characteristics of a strong safety culture that encourages all NRC employees and contractors to raise concerns and differing views promptly without fear of reprisal. When recent NRC employee surveys and self-assessments indicated the need for additional action, NRC’s management and staff partnered to develop an action plan that focuses on “fostering a greater climate of trust at the NRC” with the goals of strengthening the positive environment for raising concerns; promoting a culture of fairness, empowerment and respect across the agency; and establishing clear expectations and accountability for NRC leaders. I support these efforts.

QUESTION 35.

**NRC’s Office of Nuclear Material Safety and Safeguards (NMSS) is responsible for regulating activities which provide for the safe and secure production of nuclear fuel used in commercial nuclear reactors; the safe storage, transportation and disposal of high-level radioactive waste and spent nuclear fuel; and the transportation of radioactive materials regulated under the Atomic Energy Act. The United States is facing a significant long-term problem in its disposal of nuclear waste. What do you envision as a potential solution, and what role should NRC play?**

ANSWER.

The NRC’s authority to regulate the storage, transportation, and disposal of high-level waste comes from the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and the Nuclear Waste Policy Act of 1982, as amended. The NRC’s role under its authority is that of ensuring safety during transportation and the safety of any facility proposed for such storage or disposal. Those same statutes provide the U.S. Department of Energy (DOE) with the responsibility and authority for designing, constructing, operating, and decommissioning a permanent disposal facility for HLW, and potential interim storage facilities, under NRC licensing and regulation. In its role as a safety regulator, it is the NRC’s responsibility to process any such application regardless of the methods and technologies

utilized for transportation, storage, or disposal. The NRC has previously licensed a private fuel storage facility, and has made progress in the review of a geologic repository for HLW disposal. NRC will follow the national policy debate on disposal of HLW, but the establishment of or modification to this policy is the domain of the Congress.

**QUESTION 36.** President Trump's FY18 budget proposal would revive the approval process for Yucca Mountain nuclear waste site. NRC's role in approving the Yucca Mountain site has been to assess DOE's license application to consider whether the proposed facility meets its regulatory requirements for geologic disposal of the waste. The NRC process also includes conducting a Safety Evaluation Report and adjudicatory hearings before the Atomic Safety and Licensing Board. Adjudicatory hearings for Yucca Mountain, which must be completed before a licensing decision can be made, remain suspended. If confirmed, will you ensure robust public comment and involvement in any decision on a potential solution to this country's significant long-term problem of nuclear waste disposal?

**ANSWER.**  
Yes.

**QUESTION 37.** According to the NRC, radioactive iodine 131 is the most toxic isotope used in medicine. Before 1997, patients receiving therapeutic doses of I-131 for thyroid cancer had to be kept in radiological isolation until it was safe for them to go home and mingle with the public. In 1997, however, a radical deregulation by the NRC made outpatient treatment with I-131 the norm. The U.S. is now an outlier in the world radiation protection community, with weaker controls than those not only of Europe and Japan, but also of Iran and Indonesia. We are a first-world country with sub-third world radiation protection for the public. During the Chairmanship of Allison Macfarlane, she and Commissioner Magwood sought to correct this situation, but lacking your support, their efforts failed. If reconfirmed, will you commit to correct this situation and address the need to protect the public from exposure to medical radioactive iodine contamination?

**ANSWER.**  
The NRC believes the current criteria for the release of patients following radiation therapy contained in 10 CFR 35.75 adequately protect public health and safety. As directed in Staff Requirements Memorandum (SRM) COMAMM-14-0001/COMWDM-14-0001, "Background and Proposed Direction to NRC Staff to Verify Assumptions Made Concerning Patient Release Guidance," NRC staff has conducted additional research and is reevaluating its patient release regulatory requirements and guidance. The staff requested and is evaluating public input on this evaluation. The staff will provide their evaluation to the Commission in December 2017.

**QUESTION 38.** The National Council on Radiation Protection and International Commission on Radiological Protection both declare that the maximum radiation dose to a member of the public from a licensed activity should be 100 millirems per year. Yet the NRC allows all

**members of the public, including pregnant women and nursing mothers, to receive 500 millirems from released patients. If confirmed, will you commit to reconsidering the NRC's 500 millirems standard?**

ANSWER.

The NRC has conducted additional research and is currently reevaluating the existing patient release regulatory requirements and guidance, as directed in SRM COMAMM-14-0001/COMWDM-14-0001, "Background and Proposed Direction to NRC Staff to Verify Assumptions Made Concerning Patient Release Guidance." As part of this evaluation, the NRC staff is specifically looking at the allowable limits to pregnant women, nursing mothers, and children along with all members of the public. This evaluation includes input from a diverse group of stakeholders, including members of the public. The staff will provide its evaluation to the Commission in December 2017.

**QUESTION 39.**

**Within the past two weeks, doctors at Pennsylvania State University published a paper analyzing 44 cases of thyroid cancer in the vicinity of the Three Mile Island nuclear plant and found convincing evidence that they showed signs of exposure to radiation. In 2002, as part of the response to the 9/11 disaster, Congress authorized an expansion from 10 to 20 miles of the radius within which the drug potassium iodide would be distributed. At the time, the NRC fought that expansion, and under President Bush, the law was not implemented. If confirmed, will you commit to a re-evaluation of the need for greater availability of potassium iodide in view of increased evidence of the sensitivity of the thyroid gland to the carcinogenic effects of radiation?**

ANSWER.

The NRC believes that current emergency planning and protective measures--evacuation and sheltering--are adequate and protective of public health and safety. However, the NRC recognizes the supplemental value of potassium iodide and the prerogative of the States to decide the appropriateness of the use of potassium iodide by its citizens. The NRC is currently reviewing the paper published by Pennsylvania State University and will take regulatory action if it is warranted.

**QUESTION 40.**

**The NRC used to be considered one of the top federal agencies in workplace satisfaction. Yet, according to index scores from the U.S. Office of Personnel Management's Federal Employee Viewpoint Survey, employee satisfaction at NRC is the worst since 2005 with declines of 3.5 points in just the last year (2015 to 2016). This drop in the last year represents one of the steepest declines among agencies of its size. Moreover, scores on leadership are consistently down across all categories, including senior leadership, empowerment, and fairness. Having served as a Commissioner since 2008, how would you explain these declines in workplace satisfaction? If confirmed, what will you do in your role as chairman to address these declines?**

ANSWER.

The agency maintains a clear focus on safety and security, and carrying out its core mission of protecting people and the environment, even as we continue to face a number of challenges, such as adapting to fact-of-life changes. The agency traditionally scores well above the government average in the Federal Employee Viewpoint Survey (FEVS), but has seen a decline in overall scores over the past few years. However, in 2016, the Office of Personnel Management (OPM) still ranked the NRC in the top 10 among large agencies (i.e., agencies with 800 or more employees) in the areas of global satisfaction and employee engagement. The agency continues to evolve using data from the FEVS and the NRC Office of Inspector General Safety Culture and Climate Survey. The agency is also implementing an action plan that focuses on “fostering a greater climate of trust at the NRC” with the goals of strengthening the positive environment for raising concerns; promoting a culture of fairness, empowerment and respect across the agency; and establishing clear expectations and accountability for NRC leaders. If reconfirmed, I will continue to reinforce the continued progress on this action plan.

**QUESTION 41.      The first of the Nuclear Regulatory Commission’s five Principles of Good Regulation is “Independence.” What does that principle mean to you?**

ANSWER:

The Principle of Independence means that nothing but the highest possible standards of ethical performance and professionalism should influence regulation. However, independence does not imply isolation. All available facts and opinions must be sought openly from licensees and other interested members of the public. The many and possibly conflicting public interests involved must be considered. Final decisions must be based on objective, unbiased assessments of all information, and must be documented with reasons explicitly stated.

**QUESTION 42.      Would you agree that the Nuclear Regulatory Commission (NRC) should not allow political meddling from Congress, other parts of the executive branch, or industry to interfere with the NRC’s independent decision-making processes?**

ANSWER.

Yes.

**QUESTION 43.      Do you commit to zealously guard the independence of the NRC and oppose any efforts to undermine it?**

ANSWER.

Yes.

**THE HONORABLE DAN SULLIVAN**

**QUESTION 44.      Earlier this spring the Committee on Environment and Public Works reported S.512, the “Nuclear Energy Innovation and Modernization Act” on a strong bi-partisan vote. The findings and purposes of this bill provide a framework for these questions. In S.512 the Committee found that one of the “...impediments to the commercialization of advanced nuclear reactors...” is the “... durations associated with applying the existing nuclear regulatory**

**framework to advanced nuclear reactors. We further found that “...license application reviews should be as predictable and efficient as practicable without compromising safety or security.” And, that “the existing nuclear regulatory framework and the requirements of that framework have not adapted to advances in scientific understanding or the features and performance characteristics of advanced nuclear reactor designs.”**

**To address these findings S.512 would establish “...a program to develop the expertise and regulatory processes necessary to allow innovation and the commercialization of advanced nuclear reactors”. S.512 provides the NRC with ample time to develop that program so, even if the bill were enacted this year, it will not be fully in place for several years.**

**Assuming that S.512 is enacted, I would like to understand your views with respect to the application of the NRC’s current regulatory authority to innovative nuclear technologies during the time between enactment and the establishment of this new program. Do you agree with the general findings of S.512? If not, please explain.**

**ANSWER.**

There are many similarities between the requirements of S.512 and the NRC’s ongoing activities related to advanced reactors. In addition, the fundamental requirements in S.512 are complementary in concept to the NRC’s ongoing activities. The NRC can review innovative, non-light water reactor designs using our existing regulatory framework. This approach would continue to ensure safe, secure, and environmentally responsible uses of nuclear power. However, the NRC is enhancing its existing framework in a technology-neutral manner to increase efficiency, timeliness, and predictability of such reviews. The NRC currently has significant ongoing and planned activities in the areas of advanced reactor licensing infrastructure, technical preparation, and stakeholder outreach. In addition, the NRC, in coordination with DOE, is training NRC staff to close technical skills gaps, and performing outreach activities to educate the new vendors on the regulatory process. I support these efforts.

**QUESTION 45.**

**In this interim period, the Commission likely will be confronted with innovative and advanced nuclear technologies, e.g. subcritical technologies, which may not fit within the scope of the NRC’s current regulations. The Atomic Energy Act vests the NRC with broad authority to determine the scope of its regulatory jurisdiction, including the discretion to issue additional regulations to bring new technologies within the scope of the existing regulatory framework. In the event you encounter such an issue while serving on the NRC, what views will guide how you exercise your discretion with respect to regulation of such new technologies? Will you regulate simply to regulate or will you insist that there be regulation only when it is needed to adequately address public health and safety risks?**

**ANSWER.**

The NRC and its predecessor agency, the Atomic Energy Commission (AEC), have regulatory experience with non-light water reactor (non-LWR) designs, including licensing sodium fast reactors, sodium graphite reactors, and high temperature gas cooled reactors, and performing

pre-application reviews for additional non-LWR designs. The current regulations provide the NRC with sufficient flexibility to review and appropriately make conclusions on the safety and security on all reactor designs. The most important element of the review is for the vendor to readily demonstrate the safety of its design, especially for innovative or novel features. LWR-specific regulations that do not apply to non-LWR design features could be addressed through the use of the existing exemption process. In addition, policy issues can be addressed during pre-application interactions, which will allow the NRC to complete non-LWR reviews in a timely manner. If reconfirmed, I will continue to insist that NRC regulation be tied to protecting the public health and safety, promoting the common defense and security, and otherwise complying with applicable law.

**QUESTION 46.**      **Nuclear industry activities frequently are subject to regulation by many different federal agencies which often have different perspectives and objectives. If you are presented with a situation in which regulation of a new innovative technology by other agencies appropriately addresses any public health and safety risks presented by that technology, will you insist that the NRC also regulate?**

**ANSWER.**

Under the Atomic Energy Act of 1954, as amended, the NRC has a statutory obligation to “protect the health and safety of the public” and “promote the common defense and security” with respect to civilian applications of nuclear technology. Consequently, for any new technology, the Commission legally must have a reasonable basis for finding that these standards are met. Nonetheless, if compliance with existing regulations from another entity sufficed to ensure these standards were met, then I would not propose additional requirements beyond those required.

**THE HONORABLE SHELDON WHITEHOUSE**

**QUESTION 47.**      **Last year, NRC’s budget included a \$5 million request to build up the infrastructure for improving licensing of advanced reactor concepts. This request was appropriated in this year’s Omnibus. Unfortunately, in this year’s budget request NRC does not ask for additional funding for their advanced reactor licensing work. Can you discuss what the NRC plans to do with the additional funding for advanced reactor licensing?**

**ANSWER.**

The NRC is enhancing its existing regulatory framework to address non-LWR in a technology neutral manner as part of its vision and strategy for safely achieving effective and efficient Non-Light Water Reactor (LWR) mission readiness. The FY 2018 budget does not include off-the-fee based funding for advanced reactors, but does include very limited on-fee based funding for non-LWR infrastructure development and pre-application interactions. Examples of activities underway include the development of advanced reactor design criteria and the NRC issued draft regulatory guide “DG-1330, “Guidance for Developing Principal Design Criteria for Non-Light Water Reactors,” for formal public comment in February 2017. The NRC plans to issue a final regulatory guide at the end of 2017. In October 2016, the NRC issued a draft “Regulatory Review Roadmap for Non-Light-Water Reactors, which described flexible review options, including the use of a staged-review process and the use of conceptual design assessments

during the pre-application period. The NRC is working with stakeholders on a utility-led licensing modernization project supported by the Department of Energy and the Nuclear Energy Institute. White papers are being prepared by the utility-led working group and provided to the NRC staff as part of development of regulatory guidance for non-LWR applicants. The NRC staff is currently reviewing the first white paper on risk-informed performance based-licensing bases event selection.

**QUESTION 48.**      **Why did NRC not ask for additional funding in the President's FY2018 budget to continue its work in this area?**

ANSWER.

NRC's FY 2018 budget request was developed to ensure the agency can meet its mission and to be consistent with budgetary direction from the Administration.

**QUESTION 49.**      **There have been tremendous advances in predictive modeling and simulation capabilities for new nuclear technologies that can yield new insights into new reactor behaviors and accelerate the licensing of new technologies. Will you help direct the NRC staff to embrace and adopt these tools?**

ANSWER.

Yes. The NRC supports the appropriate use of computer models and simulation tools to evaluate the safety of nuclear technologies. Throughout the history of licensing nuclear technologies, the NRC has approved applications that rely on a combination of computer simulation modeling and experimental data to demonstrate compliance with NRC safety requirements. Given the importance of nuclear safety, sole reliance on computer simulation models needs to be approached deliberately. Computer simulation models need to be validated to assure that they appropriately model physical processes and accurately predict the results of phenomena of interest.

The NRC is currently evaluating several DOE computer simulation models for applicability and use for new and advanced reactor technologies. The NRC recognizes that computer simulation models can allow a greater number and range of issues to be analyzed. I will continue to be supportive of the NRC staff's use of appropriate evaluative tools to carry out the NRC's mission.

**QUESTION 50.**      **The Chinese currently have 21 new nuclear reactors under construction. The Chinese regulatory system appears to be similar to the new, post-Fukushima Japanese system, where the nuclear regulatory body is housed in the Environment Ministry. Although it appears that the Chinese regulatory systems seems to have similar licensing and regulatory authority to that of the U.S. NRC, their ability to license reactors appears to be more efficient. Can you discuss whether the current regulatory licensing framework at NRC is different than the Chinese licensing system? If so, what are the differences?**

ANSWER.

There are significant differences between the U.S. and Chinese regulatory licensing frameworks. The most significant differences appear to relate to transparency and public hearing rights. These differences are manifestations of our different systems of government.

**QUESTION 51.** Can you comment on what may be enabling the Chinese to be able to license 21 new reactors under their framework?

**ANSWER.**

The NRC's engagements with its counterpart in China have focused on technical safety issues rather than licensing framework, in light of the significant differences in governmental systems and national laws.

**QUESTION 52.** Has the NRC looked at a cross comparison between the Chinese licensing process and the U.S. system?

**ANSWER.**

While the NRC has not performed a cross comparison between the Chinese and US licensing processes, it does participate in the Multi-National Design Evaluation Programme (MDEP), of which the US and China are members. MDEP is a 10-nation initiative with the goal of cooperating on safety design reviews of new reactors and identifying opportunities to harmonize and converge on safety licensing review practices and requirements. When appropriate, the NRC has applied lessons learned through this process and technical exchanges with the Chinese Regulator to its licensing process.

**QUESTION 53.** The NRC budget includes \$30 million from the Nuclear Waste Fund to fund activities for the proposed Yucca Mountain deep geological repository. DOE has been collecting fees since 1983 under the Nuclear Waste Policy Act of 1982 to go into the Nuclear Waste Fund. Until 2010, DOE was collecting around \$750 million a year (nearly \$31 billion in total) into the fund. The fee program was stopped in 2010 after the Obama administration backed away from the planned nuclear fuel repository at Yucca Mountain. If you are confirmed as Commissioner and Congress passes funding for Yucca Mountain licensing do you plan on moving the licensing process forward?

**ANSWER.**

Yes. If Congress provides funding, the NRC would continue its review of the construction authorization application for a repository at Yucca Mountain.

**QUESTION 54.** If the licensing process for Yucca Mountain moves forward do you support reinstating the fee for the Nuclear Waste Fund?

**ANSWER.**

Under its statutory authorities, the NRC's role associated with Yucca Mountain is that of licensing and oversight to ensure adequate protection of public health and safety and to promote the common defense and security. As such, the NRC has no role regarding reinstatement of the fee.

**QUESTION 55.** Do you believe that nuclear waste as a liability associated with it that should be quantified? Can you estimate what the liability of the existing nuclear waste stockpile might be?

ANSWER.

Under its statutory authorities, the NRC's role associated with nuclear waste is that of licensing to ensure adequate protection of public health and safety and to promote the common defense and security. As such, the Commission has no jurisdiction regarding this matter.