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# United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

WASHINGTON, DC 20510-6175

RICHARD M. RUSSELL, MAJORITY STAFF DIRECTOR  
MARY FRANCES REPKO, MINORITY STAFF DIRECTOR

March 18, 2020

Kristine L. Svinicki  
Chairman  
U.S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Rockville, MD 20852

Dear Chairman Svinicki:

On behalf of the Senate Committee on Environment and Public Works, we would like to thank you for testifying before the Committee on Wednesday, March 4, 2020, at the hearing entitled, "*Oversight of the Nuclear Regulatory Commission*." The Committee greatly appreciates your attendance and participation in this hearing.

In order to maximize the opportunity for communication between you and the Committee, follow-up questions have been submitted by the members. To comply with Committee rules, please e-mail a copy of your responses to [QFR@epw.senate.gov](mailto:QFR@epw.senate.gov) or deliver one hard copy by COB Wednesday, April 1, 2020. Responses should be delivered to the EPW Committee at 410 Dirksen Senate Office Building, Washington, DC 20510.

If you have any questions about the requests or the hearing, please feel free to contact Staff Director, Richard Russell in the Majority Office at (202) 224-6176 or Staff Director, Mary Frances Repko in the Minority Office at (202) 224-8832.

Sincerely,



John Barrasso, M.D.  
Chairman



Thomas R. Carper  
Ranking Member

**Senate Committee on Environment and Public Works**  
**Hearing entitled, “*Oversight of the Nuclear Regulatory Commission*”**  
**March 4, 2020**  
**Questions for the Record for Chairman Svinicki**

**Chairman Barrasso:**

1. Last year, the Nuclear Regulatory Commission (NRC) entered into a Memorandum of Cooperation with the Canadian Nuclear Safety Commission to collaborate on licensing of advanced nuclear reactor technologies.
  - a. What NRC actions have been undertaken as a result of the Memorandum?
  - b. How is the NRC benefitting from this collaboration?
2. The Nuclear Energy Innovation and Modernization Act (NEIMA) requires the NRC to establish a regulatory framework to license and deploy advanced nuclear technologies. New nuclear reactors can be smaller, safer, and more efficient. The law requires the safety rules to reflect those attributes through a risk-informed, performance-based regulatory approach. How is the Commission ensuring that safety regulations for advanced reactors are established commensurate with the risk and performance of advanced nuclear technologies?
3. The NRC’s inspection programs are primarily implemented by the regional offices and resident inspectors. The NRC recently provided recommendations to resolve issues of very low safety significance.
  - a. How is the Commission ensuring that inspectors are not spending an excessive amount of time on issues that are of very low safety significance?
  - b. How is the Commission ensuring that the regional offices are aligned with the Commission’s direction on matters of very low safety significance?
4. Two years ago, the Commission launched a “Transformation Initiative” to move the agency towards a modern, risk-informed regulatory approach. It is important that changes adopted under this initiative are sustainably incorporated into the agency’s culture.
  - a. What is the current status of the Transformation Initiative?
  - b. How will the Commission ensure that any resulting changes will endure throughout NRC’s programs?
5. Test and research reactors are currently classified based on power level. The NRC staff stated during a public meeting on January 28, 2020 that revisions are being considered to better reflect a risk-informed, performance-based approach.
  - a. How would these revisions affect test and research reactor regulation?

- b. Micro-reactors may be very similar to research and test reactors. How might the potential changes to research and test reactor regulation translate to micro-reactors?
- 6. The NRC conducted a lessons learned assessment following the licensing of the Westinghouse AP-1000. Despite being a smaller light-water reactor design with additional safety systems, NuScale's design certification application review will be among the most expensive in history. That is the wrong trend.
  - a. What lessons learned from the AP-1000 experience were applied to NuScale's design review?
  - b. Can you point to any tangible process efficiencies in NuScale's review as a result of the AP-1000 lessons learned?
  - c. What is the NRC doing to incorporate lessons learned, manage costs, and be more efficient in future design reviews?
- 7. The first application for a combined operating license (COL) for a micro-reactor was submitted on March 17, 2020. This application was submitted after extensive pre-application engagement between the NRC and the applicant. The applicant expects to submit additional COLs in the future.
  - a. What did the NRC staff learn from this pre-application engagement that will result in a more efficient, predictable, and affordable review of the COL application?
  - b. Will NRC incorporate the knowledge from the pending COL into future applications?
- 8. Accident tolerant fuels are expected to enhance the safety of our currently operating nuclear power plants. They may also allow nuclear reactors to run longer between refueling outages, which offers an economic benefit for using the fuel. Will the NRC incorporate the enhanced safety and performance of accident tolerant fuels into the regulatory requirements of nuclear power plants?
- 9. Advanced fuels may be requirement enrichment levels up approaching twenty percent, much higher than fuels currently in use. How is the NRC preparing to address licensing challenges associated with these new fuels?
- 10. Developers of advanced nuclear technologies are considering the use of advanced manufacturing processes, such as additive manufacturing.
  - a. What regulatory challenges do these new processes pose?
  - b. Is the NRC prepared to review and approve the use of novel manufacturing processes?
- 11. Experienced leaders are essential to sustaining the NRC's efforts to transform itself and to change its culture. The NRC needs leaders who see this vision and can implement and

sustain real change, both procedurally and culturally. What is the Commission doing to develop leadership that will sustain today's transformational efforts?

12. According to the Commission's end-of-year report to the Appropriations Committee, the NRC ended fiscal year 2019 with authorized carryover funding that exceeds \$40 million. The amount of carryover has increased over the past few years. This is a concerning trend.
  - a. Why did the Commission's carryover funding increase last year?
  - b. What is the Commission doing to reverse this trend?
  - c. What is the current projected amount of carryover for the current fiscal year?
13. The Commission has been examining how to authorize the use of digital instrumentation and controls (I&C) since 1994. To date, the NRC has limited the use of digital I&C. Commissioner Caputo testified that "[t]he use of digital instrumentation and controls has been a particular challenge for this agency, but it is also one that is fairly important for the future of the existing fleet."
  - a. What will the Commission do to swiftly resolve remaining barriers that hinder the deployment of digital I&C?
  - b. Does the Commission recognize potential added benefits associated with digital I&C, such as real-time monitoring and response or increased data analytic capabilities?
14. In 2016, the NRC released a draft Standard Review Plan (SRP) on foreign ownership, control, or domination (FOCD). The FOCD provisions in the Atomic Energy Act of 1954 and NRC regulations are country-neutral. Current provisions that govern America's engagement on international civil nuclear commerce, such as Part 810 authorizations, provide for a country by country approach.
  - a. Would a country by country approach better reflect the current geopolitical outlook?
  - b. Are there opportunities for closer collaboration with our allies, such as Canada or the United Kingdom, compared to others, such as Russia or China?
15. Nuclear utilities must develop negation action plans if they know or have reason to believe they may be subject to NRC's FOCD requirements. Does the NRC have data regarding the cost to licensees to support the Security Subcommittees and Nuclear Advisory Committees that are required as part of these plans?
16. For several years the NRC staff has worked to determine the appropriate level of training and experience necessary to administer radioactive pharmaceuticals. The NRC staff recently recommended eliminating specific training and experience requirements for physicians to be able to prescribe and use therapeutic radiopharmaceuticals. The NRC staff's recommendation is intended to reduce regulatory overlap and burden for physicians. How is the Commission balancing the NRC staff's recommendations against feedback from stakeholders, to increase patient access to therapeutic

radiopharmaceuticals consistent with the NRC's policy not interfere with the practice of medicine?

17. The NRC staff recently proposed development of a new regulatory guide on volcanic hazards assessment for new nuclear power plants. The staff's analysis cited the need to develop this regulatory guide because several prospective applicants may consider sites with known volcanic hazards, such as Idaho or Washington State. The sites in question host Department of Energy sites that have a long history of siting nuclear reactors and other radiologic facilities.
  - a. With the increased safety features of advanced nuclear technologies and previous nuclear facilities in those regions, why is the staff considering this additional layer of regulation?
  - b. NEIMA requires the completion of both near-term and long-term actions to support the development of advanced nuclear technologies. Is the staff's volcanic hazards activity a priority relative to the other work that is necessary to meet NEIMA's deadlines?
  - c. How many staff hours and dollars have been spent on this project thus far?
  - d. Have all activities thus far been funded using money that is subject to the Commission's fee-recovery requirements?
  - e. If it is a lower priority, will you defer additional work on the study?

**Senator Markey:**

18. Under this current administration, the Nuclear Regulatory Commission (NRC) has been highlighting its "risk-informed" approach in recent decisions. This approach has been cited in some of the NRC's proposed inspection reductions, including cuts to independent spent fuel storage installation (ISFSI) inspections and changes to the Reactor Oversight Process (ROP). The NRC's emphasis on this kind of decision-making seems to have led to a consistent series of cuts to oversight hours or other reductions in NRC involvement. Can you cite a recent example of a "risk-informed" increase in regulatory oversight?
19. I am concerned about reports that NRC Region II staff have been spearheading an effort to cut independent spent fuel storage installation (ISFSI) inspections. There are several alarming allegations, including that Region II ISFSI inspectors are not qualified to perform ISFSI inspections and that they are not following proper inspection requirements for a loading campaign. Has NRC recently assessed ISFSI inspection capabilities across its regions, and if so, what were its findings? Can you confirm that all regional staff are fully satisfying the requirements for ISFSI activities?
20. In December 2019, several of my Senate colleagues and I sent a letter to the NRC outlining our concerns about the NRC's staff proposal to reduce the frequency and stringency of spent nuclear fuel site inspections. As we state in the letter, NRC staff have proposed to slash some ISFSI inspections by up to 88 percent, according to the staff's presentation. Do you support the staff proposal to drastically cut ISFSI inspections,

especially considering the recent high-profile spent fuel canister loading incident that happened at the San Onofre nuclear plant?

21. Starting in 2004, nuclear power plants in the United States used the Composite Adversary Force (CAF) managed by the Nuclear Energy Institute (NEI) as a mock attack force for NRC's force-on-force security exercises. However, in 2018, NextEra and Entergy left NEI and are no longer using NEI's CAF. Instead, NextEra and Entergy created a Joint Composite Adversary Force (JCAF) comprised of staff from their reactor fleets. What is the NRC doing to ensure consistency in quality of force-on-force testing amongst all nuclear power plants?

**Senator Whitehouse:**

22. Is the NRC going to make it a priority to look at technologies that convey the collateral advantage of putting an alternative use to what is now a big liability and a big hazard sitting out there, which is our current nuclear waste stockpile?