House Committee on Energy and Commerce
Subcommittee on Energy, Climate, and Grid Security
Hearing Entitled "The Fiscal Year 2025 Nuclear Regulatory Commission Budget"
July 23, 2024
Questions for the Record for Commissioner Caputo

The Honorable Cathy McMorris Rodgers

1. To help set the Commission up for success, Congress enacted reforms in 2019 that directed NRC to issue risk-informed regulations appropriate for advanced reactors. We also discussed last year with you how staff leadership allowed the so-called Part 53 proposal to go to the Commission, even though it ran counter to Congressional direction. You, the Commissioners, sent the proposal back with directions to conform with Congressional intent. This is an important rulemaking. What will you do if staff leadership again sends you a rule that fails to meet Congressional direction?

   Response: On July 18, 2023, I cast my vote on the staff's proposal for a risk-informed, technology-inclusive regulatory framework for advanced reactors, the Part 53 proposal, to conform with Congressional intent. In this vote, I provided direction to the staff and extensive edits to the regulatory text in keeping with historical Commission (also referred to as NRC herein) practice on significant rulemakings. I continue to have concerns with some of the elements in the recent draft that was published following the Commission's direction to the staff and look forward to robust public engagement and comments. When the draft final rule is provided to the Commission for its consideration, I intend to review the public comments and once again provide edits to the regulatory text if warranted.

   The existing regulatory framework as implemented for the currently operating plants sets a level of safety that provides adequate protection of public health and safety as directed in the Atomic Energy Act (AEA).[1] Efforts to establish a stricter level of safety for advanced reactors, however well-meaning, would exceed the agency's mandate and enshrine differing safety standards under different regulatory frameworks. This is also inconsistent with Congressional direction in the Nuclear Energy Innovation and Modernization Act (NEIMA) to develop a risk-informed, performance-based regulatory framework.[2] Furthermore, such an approach would disadvantage advanced reactors by denying them the benefit of a simpler regulatory framework that recognizes and appropriately values the safety innovations inherent in advanced designs. As noted by former Chairman Svinicki, "the Commission has been consistent in maintaining that new reactors should not be measured against a lower

[1] Atomic Energy Act of 1954, as amended, Section 161(b). As specified in Section 161(b), some portions of the regulatory framework are necessary to provide adequate protection to the public health and safety while other portions are not. Under AEA, Section 181, the regulatory framework is established by rule or regulation subject to the Administrative Procedure Act or parallel procedure. This includes the consideration of the views of public stakeholders using notice and comment as well as the consideration of the costs and benefits of those rules and regulations.
[2] *See* Nuclear Energy Innovation and Modernization Act (NEIMA), Pub. L. No. 115-439, 132 Stat. 5569 (2019).

quantitative risk threshold than operating reactors."[3] The agency should not disincentivize the investments necessary to bring to maturity such technological leaps in safety.

When completed, Part 53 should be technology-inclusive, risk-informed and performance based regulatory framework, consistent with Congressional direction in the NEIMA. Licensing decisions on Part 53 applications should be effective, efficient, and timely consistent with the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy (ADVANCE) Act of 2024.[4] Lastly, the agency should execute its safety and security mission consistent with its Principles of Good Regulation,[5] ensuring that regulatory activities are consistent with the risk reduction achieved. Nuclear safety is not exempt from the law of diminishing returns. As the agency pursues increasingly smaller risks, the safety benefit also gets smaller. However, the regulatory burden grows and demonstrating compliance becomes more difficult.

2. There are new and novel technologies and regulatory issues – like so-called "serial manufacturing"— which require the staff to think outside the box. These new approaches are coming faster than expected. How do you incentivize innovative rule development and timely reforms to NRC review processes to accommodate new manufacturing techniques to meet the moment?

   Response: At present, there are no incentives in place to encourage development of innovative licensing approaches. However, the ADVANCE Act of 2024 provided the Commission with additional authority for awards that could be used to provide incentives with regards to innovation and efficiencies. The staff developed plans and procedures for how this authority will be used, which I will be following closely. I would like to better understand how the staff are practically implementing these incentives and rewards

   The licensing of microreactors is an area where agency leadership should focus on, encourage, and reward innovative thinking. The goal should be licensing microreactors in batches, rather than individually, on sites that meet preapproved environmental parameters. Revitalizing our innovation accelerator, called Embark Venture Studio, and tasking them with this project would be a good place to start. Otherwise, the agency may default to a sequence of incremental steps that will not be completed on a timescale that supports development and use of these technologies.

3. NRC currently exempts certain nuclear medicine extravasations from medical event reporting requirements. But NRC is currently conducting a rulemaking to update its regulations pertaining to extravasations. What are the reasons for the proposed rule, how does it propose to meet NRC statutory obligations, and what is the anticipated timing for completing the rulemaking?

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[3] SECY-10-0121, Modifying the Risk-informed Regulatory Guidance for New Reactors, Commission Voting Record, Commissioner Svinicki's Comments (Mar. 2, 2011).
[4] *See* Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy (ADVANCE) Act of 2024, Pub. L. No. 118-67.
[5] Principles of Good Regulation (May 15, 2014) (NRC Agencywide Documents Access and Management System (ADAMS) Accession No. ML14135A076).

Response: The proposed rule would be responsive to the expanded use of nuclear materials in nuclear medicine and the corresponding increase in the possibility of extravasations. The addition of reporting requirements for certain nuclear medicine extravasations aligns with the objectives of NRC's Medical Use of Byproduct Material policy statement[6]. This policy statement provides that the NRC will regulate the radiation safety of patients primarily to assure the use of radionuclides is in accordance with the physician's directions. For this reason, the Commission directed staff to amend the medical event reporting requirements to include reporting of extravasations that require medical attention for a suspected radiation injury. This approach provides for patient safety without unnecessarily limiting the beneficial medical use of radioactive materials.

As noted by the Advisory Committee on the Medical Uses of Isotopes (ACMUI), extravasations can occur in normal intravenous or intra-arterial injections, and the volume of radiopharmaceutical not successfully injected will be reabsorbed by the lympathic system into the circulatory system, making the risk of adverse tissue reaction or cancer to the extravasated site and surrounding tissue negligible compared to the risk to other radiosensitive tissues from the radiopharmaceutical administration.[7, 8,9]

If certain nuclear medicine extravasations are reported to the NRC, the NRC would track these extravasations as medical events and collect information on their occurrence, detection, mitigation, and preventive strategies to determine if additional reporting is warranted. The NRC would evaluate any radiation-significant extravasations for inclusion in its annual report to Congress on abnormal occurrences. The NRC would also share any operating experience and trends identified with the Food and Drug Administration under its existing memorandum of understanding. I am carefully considering the staff's proposed rule and plan to issue my vote shortly. The NRC will plan to publish the proposed rule in the Federal Register for a 90-day public comment period following approval by the Commission, with final rule anticipated to be published in September 2026.

The Honorable Jeff Duncan

1. Congress is looking for a step change in NRC efficiency and regulatory predictability so the full benefits of nuclear technologies can be realized. Last year, I raised concerns that NRC-review of subsequent licensing for the existing reactors was taking too long, expending too many resources. Reactors that have been relicensed have already been subject to thorough review and to regular inspection of their aging management programs, so renewing a license should be straightforward. Staff had been taking longer for subsequent licensing than they had for initial relicensing—and charging twice as much, on the backs of ratepayers. You agreed with these concerns, yet staff just recently came back to you with a licensing roadmap to say they can only perform reviews at about half the rate they could 20 years ago. I don't

[6] NRC's Policy Statement on the Medical Use of Byproduct Material, 65 Fed. Reg. 47654 (Aug. 3, 2000).

[7] "Official Transcript of Proceedings, Nuclear Regulatory Commission, Meeting of the Advisory Committee on the Medical Uses of Isotopes," at 104 (Sept. 10, 2019) (ADAMS Accession No. ML19304B440).
[8] *Id.*
[9] "U.S Nuclear Regulatory Commission Advisory Committee on the Medical Uses of Isotopes, Subcommittee on Extravasations, Subcommittee Review and Comments on NRC Staff Preliminary Evaluation of Radiopharmaceutical Extravasation and Medical Event Reporting," Final Report (Sept. 16, 2021) (ADAMS Accession No. ML21288A125).

think this is acceptable. This prompted the Commission to issue direction to staff to shorten the timing for reviews further than staff proposed.

a. What is necessary to ensure NRC management will drive performance improvements in licensing sufficient to minimize Commission involvement?

Response: I share your disappointment. Progress in this area rests with leadership: setting expectations, guiding performance, and accountability for results. With new leadership, I expect to see improvement in the execution of this work within the coming months.

The NRC staff has decades of experience with license renewal reviews and aging management. Its regulatory practices and procedures are well established and practiced, including the use of the Generic Aging Lessons Learned Report (GALL)[10] and its companion Generic Aging Lessons Learned Report – Subsequent License Renewal (GALL-SLR).[11] Consistent with Congressional direction in the ADVANCE Act, subsequent license renewal (SLR) reviews should be narrower in scope than original license extensions, focusing on changes that will be made to existing aging management programs, issues unique to the 60-80-year timeframe, and any matters where an applicant deviates from the GALL-SLR.

Based on this perspective, I joined my colleagues in issuing the direction to the staff to further shorten the timing and expenditure of staff-hours on these reviews.[12] In my view, the staff should be using its experience to pursue greater efficiency. Among previous initial license renewals, one review was completed with less than 10,000 staff-hours. This should be the agency's goal for subsequent license renewal reviews, particularly given the narrower scope as discussed above.

Further, given the growing workload of SLR reviews, the staff should re-establish the agency's previous benchmark rate of twelve reviews underway at a time. For the foreseeable future, all reactors operating today are likely to pursue subsequent license renewal. This means the agency should reestablish its previous benchmark rate of twelve reviews underway at a time. This will be necessary and adequate to meet the industry's needs, similar to the experience with the first round of license extensions.

Achieving predictable and timely reviews requires leadership and management at the staff level including prioritizing appropriate staffing and resources. Further Commission direction should only be necessary as a backstop or if novel policy issues arise.

[10] NUREG-1801, Rev. 2, "Generic Aging Lessons Learned (GALL) Report – Final Report" (Dec. 2010) (ADAMS Accession No. ML103490041).
[11] NUREG-2191, Vol. 1, Rev. 0, Initial Report, "Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report – Final Report" (July 2017) (ADAMS Accession No. ML17187A031); NUREG-2191, Vol. 2, Rev. 0, Initial Report, "Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report – Final Report" (July 2017) (ADAMS Accession No. ML17187A204).
[12] Staff Requirements – COMCTH-24-0003 – License Renewal and Subsequent License Renewal Review Expectations (Aug. 8, 2024) (ADAMS Accession No. ML24221A319).

Tracking the agency's performance is key to improving efficiency. Meaningful, objective performance metrics for licensing activities, such as subsequent license renewal reviews, would allow the agency to benchmark best practices, discover opportunities for process improvements, and refine budget estimates. Such information would guide performance improvement through better allocation of resources, setting expectations and goals for improved execution of licensing work and holding staff leadership accountable for results.

2. NRC licensing does not occur in isolation. It is part of the process for what can be major, multi-billion-dollar construction projects. A utility that plans to deploy an advanced nuclear reactor, will have expended about half the projects construction costs by the time NRC issues its construction and operating permit. NRC permitting delays that last months or years can result in huge carrying costs, expensive delays and in cancellations, which can be catastrophic for companies making these investments.

    a. Does the commission understand the impact these delays have on investments in nuclear projects?

    Response: I can't speak for my colleagues, but I do. My nuclear engineering education and start of my career were in the 1990's when the impact of construction delays following the Three Mile Island accident remained fresh in the industry's memory, with some plants said to have cost ten times that of plants built prior to the accident.

    I also closely watched the progress of previous new plant reviews in my roles at this Committee, at the Senate Environment and Public Works (EPW) Committee, and as a commissioner. While I have not had knowledge of proprietary financial specifics, I am sensitive to the ramifications that regulatory delays can have. In 2007, the NRC began receiving applications for significant numbers of new reactors. By the time the first construction and operating licenses were issued in 2012, the business environment was changing, eroding the business case for new nuclear development. In the following years, many of the remaining applications were subsequently terminated after significant expenditures for technology development, application development, environmental assessment, and agency review costs. While changing business cycles may exceed the pace of our regulatory processes, that does not diminish the agency's obligation to execute its mission efficiently and with a sense of urgency.

    In the Energy Policy Act of 1992, Congress directed the NRC to develop a 'one-step' licensing process. The existing regulation, Part 50, includes a construction permit followed by an operating license. 10 CFR Part 52 was developed as the new 'one-step' process entailing a construction and operating license (COL). The efficiency of the one-step COL application review is dependent on whether the applicant is referencing a design already certified by the NRC and a site pre-approved by the agency through an Early Site Permit making the 'one-step' label something of a misnomer. Regardless of which of these 4 processes an applicant will pursue, the staff strongly encourages robust "pre-application engagement" followed by 'readiness review' of the draft application, then an acceptance review once the application is ultimately filed and prior to commencement of the actual review. Pre-application engagement can last for several

years: a recent example of five years for an established vendor with an evolutionary design and an older example of eight years as an outlier. Recent readiness reviews seem to last a few months.

As our Principles of Good Regulation state: "[t]he American Taxpayer, the ratepaying consumer, and licensees are all entitled to the best possible management and administration of regulatory activities."[13] These principles also state that "[r]egulatory actions should always be fully consistent with written regulations and should be promptly, fairly, and decisively administered so as to lend stability to the nuclear operations and planning processes."[14] Adherence to the Principles of Good Regulation is essential to achieve effective, efficient, and timely decisions. It remains just as true today.

b. What is the NRC doing to create more internal discipline and more predictability and certainty for investors?

Response: While staff continues to espouse becoming a modern risk informed regulator that is efficient and predictable, the results are not there. Leadership must lead by example. The agency can create more predictability in its decision-making and having greater internal discipline, by prioritizing mission-direct licensing and oversight work, and ensuring that decisions are consistent with the Principles of Good Regulation.[15] However, as I described above, the agency needs to accurately measure its performance and hold leadership accountable for achieving results. [16]

In the wake of the ADVANCE Act, I am hopeful that the efforts underway will drive the agency to become more efficient, predictable, and timely. It is long overdue for management to rise to the occasion with the same sense of urgency exhibited by Congress, our stakeholders, and the public, in recognition of our national and global energy needs**.**

c. Companies spending billions have powerful incentive to submit quality applications. What incentives do NRC staff have to provide predictable decisions?

Response: There are currently minimal or no incentives in place for individual staff members at the NRC to provide predictable decisions. In my recent vote on SECY-24-0083, "Mission Statement Update Options Pursuant to Subsection 501(a) of the ADVANCE Act of 2024,"[17] I proposed, as a first step towards shifting the mission and culture of the agency, enabling the safe and secure civilian use of nuclear technologies as an underlying purpose for what the agency does when accomplishing its mission. However, I was pleased to see my colleagues propose language that reaches beyond mine. Our new mission statement acknowledges that enabling the safe and secure use

[13] Principles of Good Regulation (ADAMS Accession No. ML14135A076).
[14] *Id.*
[15] *See id*.
[16] *Id*.
[17]SECY-24-0083, Mission Statement Update Options Pursuant to Subsection 501(a) of the ADVANCE Act of 2024, Commission Voting Record, Commissioner Caputo's Comments on SECY-24-0083 (Nov. 20, 2024) (ML24326A018).

and deployment of civilian nuclear energy technologies is a necessary element of how the NRC protects public health and safety and advances the nation's common defense and security.[18] This principle has long been an aspect of how the agency operates in some areas,[19] but a recognition of this as the fundamental reason why the agency exists would support the development of an incentive structure to deliver predictable decisions.

My view is that a revised mission statement should become the foundation for the issuance of the upcoming strategic plan, covering fiscal years 2026-2030. The strategic plan should set the overarching direction for long term goals and objectives, including outcome-oriented goals for major functions and operations of the agency. This should serve as a framework for setting annual goals for mission execution and performance metrics to track progress. Performance plans for agency leadership and staff should be developed accordingly to establish accountability for contributing to the agency's effectiveness.

The Honorable Robert E. Latta

1. The events in Ukraine and our competition with China and Russia on nuclear, underscore the need to build out our own nuclear fuel infrastructure, including for advanced fuels. Building on past work, Congress enacted two important laws this year to accelerate the development and expansion of a domestic fueling industry –the Nuclear Fuel Security Act, and the Prohibiting Russian Uranium Imports Act. In the fuel security act Congress directed that NRC expedite its work on fuel facility licensing. It also directed NRC in the ADVANCE Act to maximize efficiency in considering license applications.

    a. Given the national importance of securing the fuel supply chain from Russian influence, what steps is the NRC taking to be efficient and risk informed for licensing new fuel cycle facilities?

    Response: In 2019, the agency began enhancing its fuel facility licensing program to further risk-inform our licensing processes, to prioritize reviews and focus on safety significant activities, and to increase transparency during the review process. Since then, the staff has developed additional guidance documents for staff and has increased pre-application engagement, as part of broader process improvements. The staff used this streamlined program to complete an amendment request for increased enrichment 15% faster.

    Given the urgency in securing a domestic supply of nuclear fuel, the staff must find efficiencies in its licensing processes by focusing on safety-significant aspects of

[18] Staff Requirements – SECY-24-0083, Mission Statement Update Options Pursuant to Subsection 501(a) of the ADVANCE Act of 2024 (Jan. 25, 2025) (ADAMS Accession No. ML25024A040).

[19] *See, e.g.*, NRC Enforcement Policy, Section 3.8, "Notices of Enforcement Discretion for Operating Power Reactors and Gaseous Diffusion Plants," (Aug. 23, 2024) (ADAMS Accession No. ML24205A249). Section 3.8 of the NRC Enforcement Policy provides that "The NRC staff may … grant enforcement discretion in cases involving severe weather or other natural phenomena, based upon balancing the public health and safety or common defense and security of not operating against the potential radiological or other hazards associated with continued operation, and a determination that safety will not be impacted unacceptably by exercising this discretion."

reviews and consistent decision-making. As our Principles of Good Regulation state: "Regulatory activities should be consistent with the risk reduction they achieve…Regulatory decisions should be made without undue delay."[20] This program would benefit from a data-driven focus on safety significance and prioritizing resources on mission-centric licensing and oversight work. Such a focus would improve efficiency of workload execution and resource expenditures. This would also result in more accurate budgeting and fairer fee recovery.

b. Would you explain how NRC staff are leveraging previously reviewed and approved licensing work to not duplicate efforts on any current or forthcoming applications for fuel cycle facilities?

Response: This is an area that I am following closely and where, in my view, we can do better. To be more efficient, the agency must focus on safety significant aspects necessary to reach licensing decisions. While the fuel cycle facility program has pursued some enhancements to improve its efficiency, results have so far been limited. the staff continues to review the TRISO-X fuel fabrication facility application.

The staff continues to toute the use of licensing precedents to help focus reviewer efforts. However, ongoing discussions on the designation of buildings or structures as items relied on for safety (IROFS) and the analysis of natural phenomena hazards as part of the facility's integrated safety analysis speak to the contrary. These discussions signal that the agency seems to be setting different standards for new fuel facilities than the standards that were used for currently operating fuel facilities, which are considered safe. Even more concerning is that staff has not provided a data-driven safety case to justify this apparent shift in our regulatory position.[21] In my view, this has delayed progress on the TRISO-X license review. Fuel cycle stakeholders have expressed concerns to the Commission that the staff has recently changed its position regarding designation of buildings and structures as IROFS. The staff maintains that the requirements and the staff's position have not changed since promulgation of 10 CFR Part 70, Subpart H in September 2000.

The NRC should not be raising the bar for new facilities or reconsidering past licensing decisions which would increase regulatory burden without a detailed, data-driven justification for doing so. Without a safety benefit that is cost-justified, new facilities should not be required to meet safety standards that exceed currently operating facilities that are licensed and operating safely. This goes against our Reliability Principle of Good Regulation, which states, that, "Once established, regulation should be perceived to be reliable and not unjustifiably in a state of transition. Regulatory actions should always be fully consistent with written regulations and should be promptly, fairly, and decisively administered so as to lend

[20] Principles of Good Regulation (ADAMS Accession No. ML14135A076).
[21] Transcript for the Strategic Programmatic Overview of the Fuel Facilities and the Spent Fuel Storage and Transportation Business Lines, Commissioner Caputo's Comments, at 24-30, 71-77, (Apr. 23, 2024) (ADAMS Accession No. ML24123A018).

stability to the nuclear operational and planning processes."[22] I will continue to engage with senior leadership on this topic to ensure that we are not unjustifiably increasing regulatory burden. As I stated in my recent vote on SECY-24-0083,[23] we should enable the safe and secure use of nuclear energy, not encumber it.

2. Maintaining a robust domestic fuel supply chain is a matter of national security, and the current fleet of fuel cycle facilities is growing to support an increased global electricity demand. However, unpredictable NRC annual fees are inhibiting such planned growth. For example, fuel cycle facilities saw an unexpected NRC annual fee increase of 19% in FY23 above FY22 levels. This increase was further compounded by an additional increase of 24% in FY24 above FY23.

    a. What is NRC doing to address this unsustainable pattern and avoid a similar outcome in future years? Did the NRC consider the application of carryover funds to mitigate these increases?

    Response: I share your concern that unpredictable, increasing fees create challenges for licensees. This recurring issue highlights the need for more accurate budget formulation. From 2021 to 2024, the fuel facilities budget increased $7.7 million from $23.2 million to $30.9 million, or 33%.[24] However, Part 170 fees for the mission direct licensing and oversight work only increased $1.4 million from $7.3 million to $8.7 million, or a 19% increase.[25] Thus, the total budget was growing much faster than the growth in licensing and oversight work: $7.7 million vs $1.4 million. This resulted in an increase of Part 171 annual fees by $6.2 million, from $16 million to $22.2 million, or 38.7%.[26]

    If the agency overbudgets or overestimates the licensing and inspection workload, the Part 170 fees, it must ultimately recover any excess via Part 171 or annual fees. For example, fuel facilities overbudgeted by $6.1 million in 2023[27] and in 2024, the agency overestimated the licensing and inspection workload by $3 million, or 34%. Both cases led to pronounced, unpredictable increases in the annual fees.

    There is a strong need for more efficient operations and planning for fuel facility workload across the business line. In 2024, the mission-direct licensing and inspection work billed to licensees was only 27% of the total collections for the fee class.[28] This suggests a high degree of regulatory and administrative burden which, together with inaccurate budgeting, has resulted in annual fees representing 73% of

[22] Principles of Good Regulation (ADAMS Accession No. ML14135A076).
[23]SECY-24-0083, Mission Statement Update Options Pursuant to Subsection 501(a) of the ADVANCE Act of 2024, Commission Voting Record, Commissioner Caputo's Comments on SECY-24-0083 (Nov. 20, 2024) (ML24326A018).
[24] *See generally* NRC, License Fees, available at https://www.nrc.gov/about-nrc/regulatory/licensing/fees.html (last updated Mar. 18, 2025) (showing NRC Proposed Fee Rules for FY 2021-2024).
[25] *Id.*
[26] *Id.*
[27] *See* NRC, Congressional Budget Justification: Fiscal Year 2025, Vol. 40, at 71 (Mar. 2024) (ADAMS Accession No. ML24061A093..
[28] *See id.;* NRC, License Fees, available at https://www.nrc.gov/about-nrc/regulatory/licensing/fees.html (last updated Mar. 18, 2025) (showing NRC Proposed Fee Rules for FY 2021-2024).

total collections for the fee class. This puts considerable strain on licensees given the small number of licensees in this fee class. The Commission needs to be cognizant of the total annual fee increases and ensuring it's not outpacing mission direct workload during budget formulation.

With respect to the use of carryover funds to mitigate fee increases, the NRC's ability to use carryover to offset fees is dependent on available amounts of carryover in the corresponding control point and subsequent Congressional direction and authorization to utilize the carryover during the annual appropriations process. To be clear, I would support the usage of carryover, if available, to mitigate fee increases for the fuel facilities business line and also support proactive agency engagement with appropriators.

b. Excessive fees risk undermining our energy security. Commissioners, should NRC apply more budget discipline, so its fees do not get out of hand for the small number of fuel facility licensees?

Response: Yes. The NRC is required to "assess and collect fees from any person who receives a service or thing of value from the Commission to cover the costs to the Commission of providing the service or thing of value."[29] The agency does this, in part, by assessing fees for licensing and inspection services under 10 CFR Part 170, charged by the hour and for contract support costs.[30] In FY 2024, this workload totaled $8.7 million, approximately 28% of the Fuel Facilities total collection of $30.9 million. Thus, roughly 72% of the agency's fuel facilities budget is for generic activities and corporate support that indirectly support licensing and oversight work. The annual fees for this fee class have increased by roughly 39%over the last four years, as noted in my response to Question 2.a, above, this is neither fair nor sustainable.

3. We have seen the NRC focus significant time and attention on issues of very low safety significance. Two recent illustrative examples pertain to dry cask storage that have required several years to disposition, one in fact remains open.

a. What is NRC doing to ensure that resources are used efficiently?

Response: Our Principles of Good Regulation state: "Regulatory activities should be consistent with the degree of risk reduction they achieve."[31] The examples you reference depart from this principle. The agency developed the Very Low Safety

[29] NEIMA, Pub. L. No. 115-439, § 102(b)(2), 132 Stat. 5569 (2019).
[30] There are enumerated exemptions under Part 170 to these fees, which include certain facilities licensed under Section 104c. of the Atomic Energy Act and certain contested hearings. See 10 C.F.R. § 170.11(a). In addition, the NRC can grant fee waivers. See 10 C.F.R. § 170.11(b).
[31] Principles of Good Regulation (ADAMS Accession No. ML14135A076).

Significance Issue Resolution process to address such situations.[32] The staff should ensure appropriate use of this process and other tools at its disposal to disposition issues of lower safety significance prior to prevent a disproportionate expenditure of time and effort that achieves little to no safety benefit.

b. Has the staff's pursuit of very low safety significant issues contributed to the agency's increase in used fuel licensees' annual fees by 24.9% in 2024?

Response: It does not appear so. The increase in FY 2024 annual fees in the Spent Fuel Reactor Decommissioning fee class was primarily due to fewer reactor decommissioning activities than anticipated and an increase in generic transportation costs. Specifically, the FY 2024 annual fees for the Spent Fuel Reactor Decommissioning fee class increased due to an increase in budgeted resources to support licensing and oversight activities for the reactor decommissioning program, which includes both power and non-power reactors in various stages of decommissioning.[33] A decline in estimated 10 CFR Part 170 billings because of the completion of Holtec's HI-STORE consolidated interim storage facility application and a decrease in decommissioning licensing and inspection activities at multiple sites contributed to the increase in this annual fee. This is yet another example of the staff's need for more accuracy and discipline in budget development and execution. Budget estimates should be informed by actual expenditures and consistent with the planned workload.

The Honorable Brett Guthrie

1. When you were before us last year, I asked about ways to cut down the time it takes for a reactor to come online. Part of this requires quality applications, and that too can involve good pre-application interactions with NRC staff. I understand the NRC says to engage in pre-application "early and often." But I also understand that, in pre-application meetings, the NRC staff often say they cannot provide feedback and would require a formal submission to review. For example, if an applicant requests a preapplication meeting and presents its plan for environmental characterization and drilling for a site, I understand that the staff won't say if it is sufficient or not, they will say that they will review that section of the application once submitted.

   a. What is the need or value of that pre-application meeting, if the applicant receives limited feedback?

   Response: To the extent that the NRC staff and the potential applicant leave a pre-application meeting without a mutual understanding of what is necessary to meet NRC requirements, there is little value to the meeting. The NRC's Clarity Principle of Good Regulation states that "[r]egulations should be coherent, logical, and practical. There should be a clear nexus between regulations and agency goals and objectives whether explicitly or implicitly stated. Agency

[32] NRC Inspection Manual Chapter (IMC) 0612, Appendix B, Issue Screening Directions (Aug. 9, 2023) (ADAMS Accession No. ML23219A174).
[33] Fee Schedules; Fee Recovery for Fiscal Year 2024: Final Rule, 89 Fed. Reg. 51789 (June 20, 2024).

positions should be readily understood and easily applied."[34]

Pre-application meetings should provide clarity. Some staff may fear being criticized for 'counseling' applicants and this may explain the example you describe. However, such a one-way discussion may educate agency staff but don't provide clarity for the applicant regarding what is necessary to meet regulatory requirements. That clarity is essential to drafting a high-quality application and the primary purpose of pre-application engagement. Meetings that fail to improve clarity aren't useful and merely increase costs.

b. How should the process work?

Response: In pre-application meetings, the NRC should be providing constructive feedback to potential applicants and explain what is needed to meet NRC requirements. This feedback is a part of the goal of achieving clarity and openness in our processes and procedures and does not fall into the realm of counseling or advising. Although pre-application engagement for potential applicants is voluntary, the NRC issued guidance outlining expectations for pre-application engagement and the benefits that can be achieved through pre-application engagement.

c. Should staff be more communicative to applicants' questions in pre-application meetings? Does this undermine NRC efficiency?

Response: Yes, NRC staff should be more communicative to applicants' questions in pre-application meetings. Providing constructive feedback to the questions of potential applicants that helps to ensure a common understanding of what is necessary to meet NRC requirements would align with the Efficiency Principle of Good Regulation. I also believe improved communication would advance our principle of openness which states: Nuclear regulation is the public's business, and it must be transacted publicly and candidly. Providing more candid feedback is consistent with this principle. Additionally, since these meetings are conducted publicly, with certain exceptions, such communication would also improve the public's understanding of how the agency's requirements will be met.

2. As you know, I along with Rep. Tonko sponsored provisions incorporated in the ADVANCE Act that requires the Commission to evaluate, implement changes, and report to Congress on efficient, timely, and predictable licensing reviews for new facilities at brownfield and retired fossil fuel sites. The use of these sites has the potential to provide good jobs for those employed at retiring facilities, minimize environmental impacts and need for new infrastructure, and expedite new projects.

a. What opportunities do you currently see for expanding the use of these sites for new nuclear facilities and expediting the licensing reviews given the existing site infrastructure and detailed information on those sites?

[34] Principles of Good Regulation (ADAMS Accession No. ML14135A076).

Response: Consistent with Section 206 of the ADVANCE Act, the NRC staff is evaluating opportunities to improve current processes to enhance efficiency and timeliness of licensing reviews for new nuclear facilities at brownfield and retired fossil fuel sites. The NRC staff has been engaging with both Federal government and industry stakeholders to get feedback on how the agency can expedite licensing at brownfield sites. Repurposing these sites for new nuclear facilities would make use of that community's infrastructure and experience in running industrial and energy operations.

Current and potential opportunities for expediting the NRC's safety and environmental reviews could include:

- For energy-producing brownfield sites, applicant reuse of secondary systems such as switchyard components, transmission lines, cooling water intake and discharge structures, pipelines, existing roads, rail lines, parking lots, and auxiliary buildings could simplify the NRC's environmental review and result in minimal regulatory safety reviews if the electrical output of the new nuclear plant is similar to or less than what is present at the brownfield site.
- Use of existing environmental documents that could be incorporated by reference to streamline the NRC's environmental review process.
- Use of the environmental review efficiency efforts outlined in the ADVANCE Act Section 506 report to Congress.[35]
- Utilizing existing data and studies from these sites and reducing the need for applicants to provide new information to satisfy requirements under the Endangered Species Act and the National Historic Preservation Act. This includes groundwater characterization from onsite and offsite monitoring wells, data from an existing meteorological tower, ecological studies and surveys, existing biological sampling data, and using a previously disturbed site.

The Honorable Larry Bucshon, M.D.

1. Given the significant advantages of advanced reactors over traditional light-water reactors, such as additional safety features, lower cost, reduced waste, increased fuel utilization, enhanced reliability, and so on, do you believe it is important to establish a regulatory process that does not impede the development and construction of this advanced technology?

   Response: Yes.

2. What is your sense of NRC's ability to meet that demand, today? Do you believe the NRC is prepared to field an increase of applications for advanced reactors while maintaining a timely, yet effective, review process?

[35] Modernization of Nuclear Reactor Environmental Reviews Report (Jan. 2025) (ADAMS Accession No. ML24290A159).

Response: The agency's future will be dynamic, changing faster than the agency is accustomed to. While it seems very likely that our workload will grow, it remains to be seen how soon and how big the wave of work will grow. I believe readiness to execute timely reviews in a dynamic environment lies in being prepared for the workload that is currently known but also developing a surge capacity to manage any acceleration or growth in workload that is unplanned. Agency leadership must improve the staff's agility to quickly adapt to evolving industry plans and licensing needs and foster a culture that embraces change and promotes innovation. In the wake of the ADVANCE Act, I am hopeful that the efforts underway will improve the agency's readiness.

With regard to readiness for the workload currently envisioned, the NRC staff continues to prepare for the workload currently envisioned, but progress in this area must be measured by the efficient and timely completion of work. In this respect, the agency's new mission statement, developed at the direction of Congress, emphasizes enabling the safe and secure use of nuclear energy through efficient and reliable licensing.[36]

As I testified in the hearing, the path to improving performance lies in adhering to the Principles of Good Regulation and getting back to basics, which means focusing on mission execution, improving the agency's agility, timely and consistent decision-making, and achieving results. The agency has skilled, capable staff so it isn't a matter of working harder, just smarter. Agency leadership must do a better job at setting priorities and ensuring regulatory activities are risk-informed including broader use of agency processes like Be riskSMART[37] and the Very Low Safety Significance Issue Resolution (VLSSIR) process.[38] Agency leadership must also set clear and aggressive, but achievable goals; embrace the use of meaningful, objective metrics; and be accountable for results. As outlined in the response to Question 3 below, the staff is not there yet. The recent examples below highlight the current reluctance to risk inform our regulatory approaches and instead adhere to the status quo or pursue ever diminishing safety gains.

Additionally, there is a need to improve strategic workforce planning and knowledge management, two areas where I believe the agency has been poorly positioned. Significant hiring was accomplished over the last few years to address retirements and attrition resulting in a 20% turnover in employees. However, this hiring effort was conducted without a strategic workforce plan in place. Only recently has the agency become able to track the number of staff who are qualified for licensing and environmental reviews. The agency must be more intentional and strategic in both hiring and knowledge management to support readiness for a dynamic, growing licensing workload.

While the Commission has made some progress in some areas, opportunities remain that can only be accomplished with legislative support. We have simplified the process for conducting mandatory hearings, eliminating the use of oral hearings in favor of using

[36] News Release-25-005: NRC Approves Updated Mission Statement (Jan. 24, 2025) (ADAMS Accession No. ML25035A025).
[37] NUREG/KM-0018, Be riskSMART; Guidance for Integrating Risk Insights into NRC Decisions (Mar. 2021) (ADAMS Accession No. ML21071A238).
[38] NRC IMC 0612, Appendix B, Issue Screening Directions (Aug. 9, 2023) (ADAMS Accession No. ML23219A174).

written materials.[39] The requirement for mandatory hearings has been in the Atomic Energy Act for eight years longer than the existence of the NRC[40] and predates the extensive public engagement that supports its licensing process detailed in my vote on this matter.[41] Given that the NRC conducts its business transparently and continually strives to improve and expand the nature of its public engagement, the purpose for uncontested hearings has been accomplished far beyond what its proponents envisaged. With that purpose accomplished, the burden on applicants and the agency unwarranted. It would be appropriate for Congress to eliminate this requirement.

Likewise, Congress should revisit whether the requirement for reviews by the Advisory Committee on Reactor Safeguards is warranted in routine license applications. For example, the Advisory Committee on Reactor Safeguards (ACRS) reviews and reports on the renewal of all licenses for nuclear power plants.[42] With the extensive experience the agency has from the review of the initial license renewal applications for the currently operating fleet of power reactors, there are diminishing returns from the review of subsequent license renewal applications by the ACRS. The Commission should have the discretion to focus ACRS reviews on new and novel issues based on their safety significance rather than all license applications. Reforming the required scope of ACRS review and reporting would more effectively focus ACRS's limited time and may well be needed to make the efficient micro-reactor licensing envisioned in Section 208 of the ADVANCE Act possible.

3. The ADVANCE Act made reforms, based on legislation I sponsored with Mr. Peters, to reduce the licensing costs for advanced reactor applicants. Apart from decreasing the hourly regulatory review fees charged to applicants and pre-applicants, has the focus of the safety review process for advanced reactors changed under this law? Reactor applicants will need to meet the same safety standards and oversight as before, correct?

   Response: For now, the safety review process for advanced reactors has not changed under the ADVANCE Act. It remains based on verification of reasonable assurance of adequate protection of public health and safety. The vast majority of the current operating fleet of power reactors was licensed under NRC's Part 50 regulatory framework. That licensing framework does not currently require probabilistic risk assessment (PRA). Under longstanding Commission policy, advanced reactor applicants are to meet the same safety standards and oversight as currently operating reactors.[43] Nevertheless, there are several rulemaking proposals that would result in more conservative standards and oversight of

[39] Staff Requirements – SECY-24-0032, Revisiting the Mandatory Hearing Process at the U.S. Nuclear Regulatory Commission (July 18, 2024) (ADAMS Accession No. ML24200A044).
[40] *See* Price-Anderson Nuclear Industries Indemnity Act, Pub. L. No. 85-256, 71 Stat. 576, 579 (Sept. 2, 1957). This provision was slightly revised in 1962. See Pub. L. No. 87-615 § 2, 76 Stat. 409 (1962).
[41] SECY-24-0032, Revisiting the Mandatory Hearing Process at the U.S. Nuclear Regulatory Commission, Commission Voting Record, Commissioner Caputo's Comments on SECY-24-0032 (July 12, 2024) (ADAMS Accession No. ML24197A064).
[42] *See* AEA Section 182b and 10 C.F.R § 54.25, Report of the Advisory Committee on Reactor Safeguards (2025).
[43] *See* Staff Requirements – SECY-89-102, Implementation of the Safety Goals, at 4 (June 15, 1989) (ADAMS Accession No. ML003707881) (stating "the NRC will not use industry's design objectives as the basis to establish new requirements." This policy has been reaffirmed over the years. *See, e.g*., SRM-SECY-10-0121, Modifying the Risk-Informed Regulatory Guidance for New Reactors (Mar. 2, 2011) (ADAMS Accession No ML110610166).

advanced reactors, and require PRAs.

One example of a rulemaking proposal that would result in more conservative standards and oversight for advanced reactors is SECY-22-0052: Proposed Rule: Alignment of Licensing Processes and Lessons Learned from New Reactor Licensing.[44] This proposed rule includes a variety of items that have traditionally been addressed in Commission policy statements rather than codified in Part 50 of the Commission's regulations. This includes codification of a requirement for power reactor licensees to have a PRA and periodically update it to meet changing consensus standards without regard to cost or benefit.

PRA provides a valuable tool for licensees and the agency to manage risk and is encouraged under Commission policy. While PRA is valuable as a tool to risk-*inform* decision making, I believe it would be cumbersome as a risk-*based* regulatory compliance framework. While a PRA is simple in concept, an actual PRA involves many assumptions, estimates, and uncertainties, likely engendering debate about the accuracy of each facet to verify compliance. The agency and the industry already struggle with this dynamic on a smaller scale in the Significance Determination Process for reactor inspection findings. Debates between licensees and staff over differences between the agency's computer model and the licensee's site-specific model often lead to delays in determining the risk significance of a finding. Unsurprisingly, in the specific case of SECY 22-0052, the staff's regulatory analysis for codifying it as a requirement shows that it would not be cost beneficial.[45]

Mandating the use of PRA would also be inconsistent with Congressional direction to develop risk-informed and performance-based strategies and guidance to license and regulate micro-reactors, including alternatives to probabilistic risk assessments. [46] Lastly, such a requirement would also be inconsistent with the ACRS recommendation that the NRC should expand the Alternative Evaluation for Risk Insights Approach from the draft of Part 53 to be available for applicants to pursue under 10 CFR Parts 50 and 52.[47]

The example of more conservative standards and oversight in SECY-22-0052 does not stop with advanced reactors. Recently, my colleagues issued a staff requirements memorandum (SRM) directing the staff to publish a proposed rule that would "amend [the current requirements for] maintenance and upgrading of plant-specific PRAs to make it applicable to operating license holders under Part 50 and combined operating license holder (sic) under Part 52."[48] This direction was not accompanied by a backfit analysis or evaluation documenting a substantial increase in safety that is cost justified and warrants the additional regulatory burden and despite the recent acknowledgement by the staff that it has "shown that [it] can effectively implement a number of risk-informed regulations without having the

[44] SECY-22-0052, Proposed Rule: Alignment of Licensing Processes and Lessons Learned from New Reactor Licensing (RIN 3150 AI66) (June 6, 2022) (ADAMS Accession No. ML21159A055).
[45] SECY-22-0052, Enclosure 3, Regulatory Analysis for the Alignment of Licensing Processes and Lessons Learned from New Reactor Licensing Proposed Rule, (ADAMS Accession No ML21159A069).
[46] ADVANCE Act of 2024, Pub. L. No. 118-67, tit. II, Section 208, Regulatory Requirements for Micro-Reactors.
[47] Joy L. Rempe, ACRS Chairman, Final Letter on Draft 10 CFR Part 53 Rulemaking Language (Nov. 22, 2022) (ADAMS Accession No. ML22319A104).
[48] Staff Requirements – SECY-22-0052, Proposed Rule: Alignment of Licensing Processes and Lessons Learned from New Reactor Licensing (RIN 3150-AI66), item 23 (Nov. 20, 2024) (ADAMS Accession No. ML24326A003).

PRA requirement."[49]

In my view, the current requirements for maintenance and upgrading of PRAs, while limited to new reactors under Part 52, including Vogtle Electric Generating Plant Units 3 and 4, go too far, creating a unwieldly compliance regime in and of itself. As I noted in a recent Commission meeting, the preamble to the 2007 rulemaking that codified the PRA requirements in Part 52 "highlights the thinking at the time that the agency expected everyone to continually upgrade PRA codes and standards to improve their quality and comprehensiveness, but without any mention of safety benefit."[50] As acknowledged by the staff in that meeting, a PRA upgrade "triggers more review by industry peer review[ers].... If things are stable and the practices are fine [for the PRA], then maybe we should feed that back into our process...."[51] This would present the NRC with an opportunity to correct an example in Part 52 where advanced reactor applicants are currently required to meet more stringent standards that increase regulatory burden but do not yield any safety benefit. This is inconsistent with our Efficiency Principle that states "Regulatory activities should be consistent with the degree of risk reduction they achieve."

Another example of a rulemaking proposal that would result in more conservative standards and oversight for advanced reactors is the recently published proposed rule, "Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors," (Part 53).[52] As published, this proposed rule would mandate the use and upgrade of PRA similar to the staff's proposal in SECY-22-0052. Part 53 would also include a requirement for a comprehensive risk metric that establishes a numerical limit for risk that effectively codifies the quantitative health objectives (QHOs) from the Commission's "Safety Goals for Nuclear Power Plant Operation,"[53] by providing them as the only identified acceptable method of developing comprehensive risk metrics.[54] This codification of the QHOs as a risk-based compliance limit is a more conservative standard than applied to currently operating reactors. QHOs have historically been used as the cutoff for deciding whether any new requirements would be cost-justified. As currently directed, QHO's would become a new minimum standard of safety, much more conservative than standards for existing reactors and applied without consideration of cost or benefit.[55]

4. The fee reduction provisions will result in significant cost reductions for advanced reactor applicants—almost half according to NRC. But there are other licensing fees all reactors and utilities have to pay, often passed on to ratepayers. Can you each speak to your views about

[49] Official Transcript of Proceedings, Nuclear Regulatory Commission: Strategic Programmatic Overview of the Operating Reactors and New Reactors Business Lines, at 61 (Nov. 14, 2024) (ADAMS Accession No. ML24325A523).
[50] *Id.*, at 59.
[51] *Id.*, at 62.
[52] Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors; Proposed Rule, 89 Fed. Reg. 86918 (Oct. 31, 2024).
[53] Safety Goals for Nuclear Power Plant Operation, 51 Fed. Reg. 28044 (Aug. 4, 1986), as corrected and republished in 51 Fed. Reg. 30028 (Aug. 21, 1986).
[54] Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors; Proposed Rule, 89 Fed. Reg. 86918, at 86925-6 (Oct. 31, 2024).
[55] *See* Regulatory Analysis Guidelines of the U.S, Nuclear Regulatory Commission, NUREG/BR-0058, Draft Revision 5, Section 2.2, "Safety Goal Analysis," (Apr. 2017) (ADAMS Accession No. ML17100A480).

ensuring fees are kept at a reasonable rate?

Response: The fee reduction provisions did result in a significantly reduced hourly rate for advanced reactor applicants. I understand that the increase is now non-fee recoverable, and the taxpayer will have an increased portion for this cost.

During my time as a commissioner, I have consistently and continually advocated that the agency must operate in an efficient and effective manner, starting with budget discipline. Fee recoverable and non-fee recoverable costs from either the licensee or the taxpayer must be fair and reasonable for what the agency *needs* to execute its mission. This rests on the fiscal discipline applied at each level of management to distinguish between "need" and "want." Fees are a direct outcome of the budgeting process for the agency, and any efforts to stabilize fees must start with budget scrutiny at all levels.

The agency should focus on using actual expenditures to inform budget development with a measure of detail commensurate enough to truly make informed decisions. Management, at all levels, should take a hard look at necessary activities and services that support the core mission of the agency, and use data driven decision making to reach effective outcomes. However, in my time on the Commission, we have yet to effect these changes.

While the ADVANCE Act reduced fees for advanced reactors, the other fee classes continue to face the same challenges in different degrees. For example, the problem is acutely felt by fuel cycle facilities since there are so few licensees in the fee class. Operating reactors also wrestle with fees increases but their significance is masked by the costs being allocated across such a large number of licensees. At the end of fiscal year 2024, the agency had a carryover balance of $72 million dollars. This is millions of dollars collected from licensees and the American taxpayer that the agency didn't need to fulfill its mission last year.

In 2024, the agency recovered approximately $202 million in Part 170 hourly fees for licensing and oversight work equaling merely 21% of the agency's total budget authority. The Nuclear Energy Innovation and Modernization Act directed the NRC to budget for "Requested Activities" which effectively includes all licensing work billed by the hour. This amount was estimated at $88.2 million[56], or roughly 9%, of the 2024 enacted budget.[57] The amount of this licensing work is expected to grow with an increase in new reactor and fuel cycle license applications, subsequent license renewals, and power uprate requests. However, the timing and ultimate amount of this work is uncertain and likely to fluctuate. This dynamic increases the difficulty in budgeting accurately and, thus, the risk that existing licensees will continue to pay the cost of overbudgeting.

Congress has made clear its desire that the agency be adequately resourced and efficiently executing its licensing decisions. If Congress increases the agency's total budget in an effort to fund licensing work, only a small portion is likely to be spent on it and the end result will likely be increased annual fees on existing licensees. I am convinced the time has come to fund licensing work separately from the remainder of the NRC budget. The challenge of

[57] *See* NUREG-1100, Volume 39, Congressional Budget Justification: Fiscal Year 2024, at 85 (Mar. 2023) (ADAMS Accession No. ML23069A000).

adequately resourcing licensing work would be aided by funding it in a manner that strictly limits use of these funds for licensing work. This could be done by establishing a licensing fund in the NRC budget and funding it exclusively using off-setting receipts from licensing fees and direct congressional appropriations for licensing. These resources should be preserved for licensing work, adjust to year-to-year fluctuations in workload, and ensure adequate funding for licensing work without unnecessarily increasing regulatory burden on existing licensees.

The Honorable Tim Walberg

1. As noted in a report from Idaho National Laboratory, reviews by the NRC's Advisory Committee for Reactor Safeguards or ACRS have become burdensome and time-consuming for industry and regulators alike. The ACRS was established when technologies were new and novel. We should return ACRS to this core mission and focus it on issues that would benefit from its expertise, which I've aimed to do in my draft legislation. The consequence of not clarifying the role of the ACRS is that the ACRS, due to resource constraints, may delay the approval and deployment of nuclear power plants with advanced safety features.

    a. What actions has the Commission taken to ensure that the ACRS becomes more efficient in the conduct of its mission?

    Response: Under the leadership of the Commission, the ACRS is seeking ways to improve its effectiveness and efficiency. These include:
    - Increased project management and coordination with NRC offices;
    - Standardized guidance and best practices to apply to the review of new reactor designs;
    - Improvements to more effectively and expeditiously conduct reviews of subsequent license renewal applications;
    - Increased involvement in scheduling reviews and early alignment on major ACRS actions;
    - Lessons learned relevant to future advanced reactor applications;
    - Measures to proactively conduct early reviews of critical topical reports for new and advanced reactor applications, and;
    - Status updates during the planning portion of each full Committee meeting.

    The ACRS improvements were discussed at a Commission meeting on June 7, 2024.[58]

    The Commission oversees the operations of the ACRS in meetings held annually to discuss ACRS activities and through the biennial renewal of its charter. In addition, the Commission approves the selection of candidates for ACRS membership. Over the years, the Commission has taken limited steps towards the

[58] *See generally* Official Transcript, Meeting with the NRC's Independent Advisory Committee on Reactor Safeguards to Provide their Views to the Commission on Issues Recently Reviewed by the Committee (June 7, 2024) (ADAMS Accession No. ML24169A555).

efficiency of ACRS reviews. For example, NRC regulations regarding the finality of standard design approvals require that the ACRS use and rely on a design approval in the review of an individual facility application review.[59] A similar requirement has been included in the proposed Part 53 rulemaking.[60]

However, Commission efforts in this area are somewhat constrained by the statutory requirement for ACRS review of and report on all license applications for utilization facilities.[61] As a result, the ACRS reviews and reports on all applications for license renewal and subsequent license renewal whether or not there is any deviation from NRC guidance in the area that the ACRS has reviewed. The ACRS also reviews and reports on all applications for renewals despite the lack of deviation from precedent reviewed in a prior renewal or at similar licensees. This is an area where Commission discretion to focus the ACRS on new and novel issues that are safety significant would be preferable to the current AEA requirement for review and reporting on all license applications.

b. Do you believe that the ACRS will ultimately be a bottleneck for new reactor licensing if it is not refocused on novel, safety significant issues?

Response: The ACRS has been receptive to input for improving effectiveness and efficiency as it provides independent advice to the Commission. Many recommendations have been made in recent internal and external reports. In fact, a number of these items were identified by ACRS members, NRC staff, and applicants, with specific actions being implemented to address those items.

As noted in both the June 2023 and June 2024 ACRS Commission meeting, there has been significant discussion regarding enhancing focus on safety significant matters, reducing duplicative meetings, increasing Commission and Executive Director for Operations awareness of ACRS activities, increasing communications with NRC staff, reducing costs, and ensuring members conduct tasks in an effective and efficient manner.[62]

Over the past three years, the NRC staff and the ACRS have made some progress working to re-envision the staff's engagement with the ACRS. The staff and the ACRS collaborated on aspects associated with planning and implementation of meetings and technical reviews. Through these efforts, the staff and the ACRS have focused on reviews of safety-related documents (e.g., topical reports, design certifications, standard design approvals, combined licenses, construction permits,

[59] *See* 10 C.F.R. § 52.145, Finality of standard design approvals; information requests (2025).
[60] Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors; Proposed Rule, 89 Fed. Reg. 86918, 87085 (Oct. 31, 2024). This proposed rule proposes a section parallel to 10 CFR § 52.145, "Finality of standard design approvals; information requests."
[61] AEA, Section 182b.
[62] *See generally* Official Transcript, Meeting with Advisory Committee on Reactor Safeguards (June 9, 2023) (ADAMS Accession No. ML23171B031); Official Transcript, Meeting with the NRC's Independent Advisory Committee on Reactor Safeguards to Provide their Views to the Commission on Issues Recently Reviewed by the Committee (June 7, 2024) (ADAMS Accession No. ML24169A555).

limited work authorizations). These enhancements were demonstrated during four recent reviews: the later stages of the NuScale design certification, both Kairos Hermes test reactor construction permit applications, and the ongoing NuScale standard design approval. These improvements helped the NRC staff and the ACRS in executing their statutory responsibilities in the review of one design certification, an updated design approval that is not yet complete, and applications for three construction permits. For example, the ACRS interactions for the Kairos Hermes test reactor construction permits were reduced from 12 subcommittee meetings and seven full committee meetings for Hermes 1 to three subcommittee meetings and one full committee meeting for Hermes 2.

Nevertheless, every review and report from the ACRS expends limited resources. The ACRS subcommittees meet only 40 times in a year and the full committee only meets 10 times. Those meeting frequencies are limited by the statutory cap of 130 days of work per year for the members of the ACRS as special government employees[63] and the need for preparatory work on the part of the ACRS members for the meetings. Absent a legislative change to provide the Commission with discretion to focus the ACRS resources on the review of new and novel or safety significant issues, the review and reporting capacity of the ACRS will be limited. Fourteen applications for micro-reactors could fully engage or overwhelm the capacity of the ACRS to meaningfully review and report given these limitations. The ACRS throughput has been appropriate for applications for large light-water reactor utilization facilities in the past, but will be untenable for the demand for microreactor utilization facilities that are smaller and more plentiful.

As noted above, Commission discretion to focus the ACRS on new and novel issues that are safety significant would be preferable to the current AEA requirement for review and reporting on all license applications. This is the surest way to ensure the ACRS does not become a bottleneck.

The Honorable Greg Pence

1. Congress sought to make sure to enhance NRC's tools for hiring extremely qualified individuals to fill urgent needs. Yet there are also routine workforce operations that NRC must excel at. For example, resident inspectors are the agency's 'boots on the ground' at all operating plants. At a recent Commissioner meeting, staff showed deficiencies in resident inspector retention. The NRC has had some challenges retaining qualified inspectors in these positions.

    a. What is the plan to improve retention?

[63] *See*, 18 U.S.C. § 202(a) (defining that "special Government employee" shall mean an officer or employee … of any independent agency of the United States … who is retained, designated, appointed, or employed to perform … for not to exceed one hundred and thirty days during any period of three hundred and sixty-five days, temporary duties either on a full-time or intermittent basis….")

Response: The NRC has completed several actions to address the trend in resident inspector recruitment and retention since 2020, including the following:

- Allowing end-of-tour to telework while waiting for their next position to open;
- Shifting change of station management to the Department of Treasury, streamlining relocation support;
- Offering a lump-sum payment option for some relocation and house-hunting expenses;

- Establishing a new special rate pay scale for sites where locality pay is less than 20 percent of base pay;
- Modifying saved pay policy to 6 cumulative years instead of 6 consecutive years;
- Developing the Resident Inspector (RI) Program Lead position and RI Standing Committee to focus on resident inspector issues;
- Creating a centralized location to provide residents with information regarding program policies and procedures;
- Establishing a resident two-year detail rotational program where former residents work for the Office of Nuclear Regulation, Division of Reactor Oversight in HQ for two years;
- Enhancing the Resident Demographics Program to better monitor program health;
- Updating the resident inspector tour policies in the Inspection Manual Chapter 2515 "Light-Water Reactor Inspection Program—Operations Phase" by loosening and clarifying rules for a second tour;
- Advertising the availability of the Employees Assistance Program Relocation Support Group;
- Updating the relocation incentive program. The retention incentive, implemented in early 2024 with first payments to be made in early 2025, is anticipated to substantially impact program retention;
- Implementing a 15% annual retention incentive for resident inspectors who agree to remain in the RI Program for a year; and
- Initiating a 50th Anniversary campaign to highlight the importance of the resident inspector program to internal and external stakeholders.

While efforts have been made to improve retention, we have yet to see the results from these efforts and lack data to track progress. To address these challenges, I believe the agency should increase recruitment, focus on qualification efforts, and develop a robust strategic workforce plan.

b. What policy changes can help enable retention?

Response: The NRC has not identified any further policy changes and continues to assess the resident inspector program for future improvements. One item that remains as a disincentive to the resident inspector program is the income tax treatment of costs for permanent changes of station from one resident site to another. Under the Tax Cut

and Jobs Act of 2017,[64] resident inspectors are now taxed for certain reimbursements they receive for employment-related moving expenses. The treatment of these as taxable events is set to expire in 2025. If this treatment is renewed as a part of renewal of that act it would remain as a disincentive to the resident inspector program.

In maintaining an effective resident inspector program, retention should not be the exclusive focus at the expense of recruitment. Resident inspectors may choose to transition to other agency positions or leave the agency. Staff should recognize the need to improve adequate recruitment and a more efficient training and qualification program.

2. The NRC has ramped up its hiring over the last several years. It seems that coincident with this period of increased hiring, more and more regulatory matters that have been previously resolved are being reopened and reinterpreted.

   a. As you onboard new agency staff, can you explain how the NRC ensures that new hires are being trained on the regulatory process?

      Response: Over the last several years, the agency has experienced a higher-than-normal attrition due in part to an increased wave of retirement. In anticipation of this wave, the agency began a significant hiring effort in 2022 resulting in the onboarding of hundreds of staff since then. This has challenged the agency in its ability to quickly hire and inculcate a sizeable cadre of employees. This hiring effort was conducted without a strategic workforce plan in place. Much of this hiring was also done without a knowledge management program in place. While the agency has begun establishing a knowledge management program, work remains to ensure the program is structured, robust, and addresses the very concerns you have raised.

   b. How do you ensure that both new hires and agency management are knowledgeable of the regulatory history and are dispositioning issues in a manner that considers past precedent?

      Response: The perception that the staff's interpretation of regulatory requirements is a moving target or in flux with a reassignment of staff, suggests that the agency must provide more leadership here. Staff decisions should be transparent, high-quality, well-articulated, and then relied on going forward. The bar for revisiting a licensing decision or regulatory interpretation should be set high and involve a substantive safety issue. This should be reflected in the culture of the agency and evident in decision-making.

      While the agency has several tools for sharing regulatory history and past precedent with existing staff and management, it has some gaps in knowledge management. Generally, the NRC staff considers how similar issues were resolved in the past in its decision-making processes. The training on the regulatory process mentioned in the

[64] Pub. L. No. 115-97, §§ 11048, 11049, 131 Stat. 2054, 2088–89 (2017) (amending 26 U.S.C. §§ 132, 217).

response above will further emphasize the importance of considering previous actions. The NRC should use its formal backfitting process to consider potential changes to regulatory positions, and decisions made under this process can be appealed by licensees.

c. As the agency works to be more risk-informed, as Congress requires, do you have mandatory training on risk for the entire technical staff? If not, can you commit to address this area as you take a holistic approach to the training aspects of Section 507 of the Advance Act?

Response: There are training programs available for staff related to risk. Qualification programs for most technical positions require training related to risk analysis. In addition, the NRC has engaged in several agency-wide training campaigns to integrate risk-informed decision-making into the NRC's culture and continues to offer training on risk-informed decision-making to all agency staff. These campaigns include training on risk informed decision making, or RIDM, "Be RiskSMART" framework[65] and Very Low Safety Significant Issue Resolution process.[66]

The agency also has a rule, 10 CFR § 50.109, the Backfit Rule,[67] which is a structured process for evaluating the risk and cost-benefit of regulatory changes. With limited exceptions, a regulatory change must be analyzed to have a substantial safety benefit and be cost-justified before being imposed. Agency-wide training on the backfit rule was conducted several years ago. Given the passage of time, the amount of staff turnover, and the need to improve the agency's risk information practices, it would be beneficial to conduct this training again and encourage the use of these risk informed tools and decision-making processes. Moreover, a change in culture will also need significant change management and reinforcement by leadership to ensure the use of these risk informed tools.

The Honorable Randy K. Weber

1. Congress passed the Fiscal Responsibility Act amending the National Environmental Policy Act, and it became law in 2023. The NRC has since taken more than a year to even propose a rulemaking plan. The estimated rulemaking schedule (P.6) estimates that it will take almost 4 years to complete the rulemaking once the Commission approves the NRC staff's plan, and rates this rulemaking a 'medium' priority. This is not in line with Congressional intent to modernize and streamline permitting reform now to meet the needs of the nation. The NRC has extensive experience with both Environmental Impact Statements and Environmental Assessments.

    a. Why is this taking so long and how will you accelerate implementation?

[65] NUREG/KM-0018, Be riskSMART; Guidance for Integrating Risk Insights into NRC Decisions (Mar. 2021) (ADAMS Accession No. ML21071A238).
[66] NRC IMC 0612, Appendix B, Issue Screening Directions (Aug. 9, 2023) (ADAMS Accession No. ML23219A174).
[67] *See* 10 C.F.R. § 50.109 (2025).

Response: The Commission is currently reviewing the staff's recommended rulemaking and schedule in SECY-24-0046, "Implementation of the Fiscal Responsibility Act of 2023 National Environmental Policy Act Amendments."[68] This rulemaking would likely generate a high level of interest and significant public engagement. That said, if approved, the Commission can provide direction to the staff to pursue opportunities to increase efficiency and expedite the rulemaking schedule.

b. Congress just directed you to be identify more ways to be efficient in siting reviews. How is this a medium priority?

Response: In general, when developing rulemaking packages, the staff determines the prioritization of a proposed rulemaking based on the NRC's Common Prioritization of Rulemaking (CPR) methodology.[69] Regardless of the CPR prioritization score, the staff can seek to expedite the schedule either at its own discretion or at the direction of the Commission.

c. How does the NRC prepare for an influx of site permits efficiently if it won't set the policy until 2028?

Response: While the Commission reviews the staff's recommended rulemaking and schedule in SECY-24-0046, the agency has taken several actions to improve the efficiency of its environmental reviews, as outlined in the ADVANCE Act Section 506 report to Congress.[70] The staff has set shorter environmental review schedules and page limits for its NEPA documents. Additionally, the staff is developing procedures and guidance to facilitate timely completion of consultations and interagency coordination as well as taking a more risk-informed approach on environmental reviews, ensuring the level of review is commensurate with the level of potential environmental impact.

For example, in August 2024, the NRC issued an exemption from 10 CFR 51.20(b), allowing the use of an environmental assessment instead of an environmental impact statement to document its environmental review of an application for a construction permit for the proposed Kairos Hermes 2 test reactors. The Kairos Hermes 2 environmental assessment was completed in less than one year, about half the time of the Kairos Hermes environmental impact statement, and with 60% fewer pages and 40% less resources than the Kairos Hermes environmental impact statement.

While these are some examples of staff efforts to conduct environmental reviews

[68] SECY-24-0046, Implementation of the Fiscal Responsibility Act of 2023 National Environmental Policy Act Amendments (June 13, 2024) (ADAMS Accession No. ML24078A013).
[69] FY23/24 Guidance on Common Prioritization of Rulemaking Factor Selection Criteria (Jan. 18, 2023) (ADAMS Accession No. ML23018A148).
[70] Modernization of Nuclear Reactor Environmental Reviews Report (Jan. 2025) (ADAMS Accession No. ML24290A159).

efficiently, it is important that we continue to enhance our performance and processes in this area. This will ensure that the agency is fully prepared to handle the anticipated influx of work in the future and can maintain a high level of efficiency and effectiveness.[71] Applicants will not wait for Part 53 to be implemented; they will continue to utilize the existing regulatory frameworks. Therefore, it is important to recognize that we must ensure that these current frameworks remain efficient and effective.

2. Texas is leading the charge in deploying cutting-edge nuclear technologies. X-energy, a recipient of the Department of Energy's Advanced Reactor Demonstration Program award, has partnered with Dow Chemical to supply heat for one of their facilities on the Texas Gulf Coast in my district. Dow has said they don't want this to be a one-off project, and that they plan to deploy more of these reactors. But to potentially license dozens of reactors at the same time will require the Nuclear Regulatory Commission to be efficient and timely. The ADVANCE Act is a major step toward that goal.

    a. Is the NRC currently capable of licensing dozens of new reactors at the same time? If not, what is your plan to get to that capacity?

    Response: While the agency still has work to do, it is taking specific steps to further enhance its capacity to conduct reviews and implement efficiencies to reduce the burden of completing those reviews. For example:

    - Until recently, the agency had no clear process for tracking the number of employees who are qualified to do license reviews or environmental reviews. While the number of qualified personnel is now known and can be tracked, the agency will not have a strategic workforce plan in place for several more months. At that point, it should become clearer whether we have remaining staffing and training needs. The NRC can also leverage contract support to augment the staff's capacity, if needed.
    - It is incumbent upon the staff to risk-inform and standardize reviews. The staff should use knowledge from the initial reviews to inform reviews of subsequent applications for the same design, developing templates for safety reviews, and remain consistent in their decision making to ensure reliable, predictable, and timely reviews.
    - Development of the design-centered review approach in Regulatory Guide 1.206, "Applications for Nuclear Power Plants,"[72] encourages the standardization of applications and facilitates as a method for conducting multiple license application reviews of the same standard design. This should enable staff to perform a single technical review for design standard information and subsequent license applications of the same design. The review would then focus only on

[71] Additionally, staff should also look to the recently developed Council on Environmental Quality NEPA Implementation Guidance, which provides guidance on implementing NEPA to expedite and simplify the permitting process pursuant to Executive Order 14154, "Unleashing American Energy." *See* Council on Environmental Quality, Memorandum for Heads of Federal Departments and Agencies, "Implementation of the National Environmental Policy Act" (Feb. 19, 2025).

[72] *See* Regulatory Guide 1.206, Rev. 1, Applications for Nuclear Power Plants (Oct. 2018) (ADAMS Accession No. ML18131A181).

site-specific aspects, including the environmental review. The current manufacturing license pathway lends itself to maximize standardization which would support streamlined licensing approvals, including for factory-fabricated microreactors.

- The agency should also strive to have staff that develop expertise in designs under review continue contributing to future reviews to gain efficiencies through the benefit of a learning curve.
- The staff should institute parallel reviews of documents, where possible, to accelerate review timelines.
- Although pre-application engagement for potential applicants is voluntary, the NRC issued guidance outlining expectations for pre-application engagement and the tangible benefits that can be achieved through robust pre-application engagement.

While these activities may contribute toward readiness to simultaneously review multiple reactor applications, examples described in my response to Representative Larry Bucshon show that the agency will need to improve its results and risk-inform its decision-making processes to be the efficient and predictable regulator that Congress, the public, and our stakeholders expect us to be.

b. Specifically, how will these provisions aid the NRC to facilitate and accelerate projects like the X-energy and Dow Chemical partnership in Lone Star State?

Response: The ADVANCE Act includes a number of provisions that will enable the NRC to facilitate and accelerate projects like the X-energy and Dow Chemical partnership. These efforts include the following:

- Establishing a new combined license review procedure to allow the NRC to expedite licensing for qualifying applicants;
- Developing strategies and guidance for microreactors to allow the NRC to conduct more efficient and timelier microreactor licensing reviews including those listed above;
- Strengthening project management;
- Expanding the use of categorical exclusions, environmental assessments, and generic environmental impact statements to facilitate the NRC conducting efficient, timely, and predictable environmental reviews; and
- Evaluating new commercial reactors at brownfield sites and retired fossil fuel sites, including leveraging information that exists for these sites and minimizing the need for applicants to generate new information. This will enable the NRC to complete reviews in a timely manner and achieve predictable licensing reviews.

In keeping with the direction set by the ADVANCE Act, I believe the staff could further streamline the environmental reviews by enabling the use of site envelopes. Particularly with the concept of batch licensing of microreactors, through this site envelope approach, the staff can define site parameters and characteristics and their environmental effects, in a manner that is applicable to one site or various sites (e.g. specified sites in the Permian Basin for oil and gas exploration). The staff can also

define the appropriate level of NEPA review required based on thresholds of environmental effects for a site envelope.[73] While the staff has proposed a rule focusing on using generic environmental impact statements in advance reactor licensing,[74] the staff could explore whether a more appropriate level of NEPA review, such as a categorical exclusion, may be more useful and efficient with site envelopes for micro-reactor technologies, given the relatively lower level of environmental effects associated with micro-reactors. This concept is analogous to the Department of Energy's regulations excluding certain renewable projects from NEPA review based on the size and location of the project.[75] This approach could accelerate the licensing approval process for micro-reactors by (1) establishing a commensurate level of NEPA review required for certain site envelopes, and (2) eliminating individual and repetitive environmental reviews of projects within the same site parameters because environmental impacts are already analyzed at the site envelope level.

The Honorable Rick W. Allen

1. There are a number of advanced reactor designs in various stages of review that, if approved, would result in a design certification. However, if a utility wanted to pursue construction of a new reactor in the near term my understanding is that there is only one certified design that has a proven construction and operating record -- the Westinghouse AP1000 design, the design for Plant Vogtle. I understand that NRC design certifications are for 15 years and the current AP1000 design certification expires in February 2026. I also understand that two years ago the staff recommended removing the expiration date for designs that have been certified but needs the Commission's approval before implementing that recommendation. This seems like a no-brainer, but it hasn't happened yet.

    a. I asked at the hearing, but want elaboration for the record: Where does the Commission stand on a decision to remove the expiration date for design certifications as the NRC staff has proposed, and when can we expect a final decision?

    Response: On June 4, 2024, Commissioner David Wright proposed extending the duration of design certification to 40 years in his memorandum, "Revising the Duration of Design Certifications," COMDAW-24-0001.[76] I agreed with Commissioner Wright that the Commission should decide on modifying the duration of design certifications while continuing to deliberate on the other issues included in SECY-22-0052. I cast my vote on Commissioner Wright's proposal on June 6,

[73] *See generally* 10 C.F.R. § 51.25 (identifying various levels of NEPA review).
[74] *See generally* Generic Environmental Impact Statement for Licensing of New Nuclear Reactors, Proposed Rule, 89 Fed. Reg. 80797 (Oct. 4, 2024).
[75] 10 C.F.R. § 1021.410 (2025) (identifying a list of categorical exclusions under Appendices A and B to subpart D); *see e.g.*,10 C.F.R. § 1021, Subpart D, B5.18 (defining an exclusion for small commercial wind turbine development projects, generally not more than 2 turbines and less than 200 feet in height, located within a previously disturbed or developed area, at certain distance from airports and weather radars, with no potential to cause significant effect to bird populations, and designed to not have the potential to cause significant impacts to persons).
[76] COMDAW-24-0001, Revising the Duration of Design Certifications (June 4, 2024) (ADAMS Accession No. ML24156A066).

2024.[77] On November 14, 2024, the SRM directing this change was issued.[78]

The Honorable Ann M. Kuster

1. At the Seabrook plant in my state, we have had the benefit of NRC resident inspectors who go above and beyond in taking the time to talk with members of the community and explain what is happening at the plant. How can the NRC improve public engagement, including people living near existing or planned nuclear power stations?

   Response: The NRC has launched a systematic evaluation of the existing public outreach efforts to accurately identify gaps, best practices, and accurately capture and monitor its stakeholder engagement activities. Consequently, the NRC strives to improve public engagement by interacting with the public and assessing the effectiveness of the interactions on a case-by-case basis to ensure meaningful interactions are executed. For example, given the unusual nature of the Palisades Restart in Michigan, the NRC has coordinated over twelve public meetings last year, expanding the use of onsite public meetings to maximize local stakeholder engagement and transparency.

   Ongoing public engagement and participation activities normally conducted either virtually or near nuclear power plants include:
   - Public meetings and open houses to meet with the public and answer questions. The open houses are held at places with have wide public availability access.
   - Public meetings (virtual and/or in-person) to discuss issues regarding the NRC's rules or policies.
   - Making information about the NRC's regulatory activities available and accessible to interested stakeholders through the NRC's public website.
   - Responding to public comments or inquiries in writing.
   - Refining presentation materials to incorporate plain language to ensure that agency messages are easily understandable and accessible to everyone.
   - Regularly sharing information via NRC's social media channels such as Facebook and Instagram.
   - Ensuring the public has easy access to NRC's publicly available documents via the web-based ADAMS and the NRC public website.

   As I stated in my vote on SECY-24-0032, "Revisiting the Mandatory Hearing Process at the U.S. Nuclear Regulatory Commission, "[t]he NRC considers stakeholder engagement and transparency as a cornerstone for effective regulation."[79] As part of my vote, I provided a more detailed list of the extensive amount of public engagement the agency does for the NRC's licensing, rulemaking, and adjudicatory processes.

[77] COMDAW-24-0001, Revising the Duration of Design Certifications, Commissioner Caputo's vote (June 4, 2024) (ADAMS Accession No. ML24159A005).
[78] Staff Requirements – COMDAW-24-0001, Revising the Duration of Design Certifications (Nov. 14, 2024) (ADAMS Accession No. ML24319A209).
[79] SECY-24-0032, Revisiting the Mandatory Hearing Process at the U.S. Nuclear Regulatory Commission, Commission Voting Record, Commissioner Caputo's Comments on SECY-24-0032 (July 12, 2024) (ADAMS Accession No. ML24197A064).