House Committee on Energy and Commerce

Subcommittee on Energy, Climate, and Grid Security

Hearing Entitled, *"Oversight of NRC: Ensuring Efficient and Predictable Nuclear Safety Regulation for a Prosperous America"*

June 14, 2023

Questions for the Record for Chair Hanson

The Honorable Cathy McMorris Rodgers

1. Would you each provide for the record, your recommendations for ensuring and enabling staff leadership to work in service to policies Congress establishes?

RESPONSE:

Each of the Commissioners will provide their individual recommendations to this question. The agency utilizes its Strategic Plan to provide a blueprint for the agency to plan, implement, and monitor its work to achieve the agency's mission consistent with the authorities provided by Congress. The NRC also maintains and timely updates its management directives, which provide guidance to staff leadership regarding a wide range of statutory, regulatory, and policy requirements. In order to ensure a transparent and unified approach to executing its mission, the NRC establishes annual performance targets, and holds staff leadership accountable for achieving progress towards them, both at the organizational and individual levels. This is the framework that will be utilized for assessing and implementing any new or emerging policies Congress establishes.

a. Would you include in your recommendations how the Commission should measure or monitor the effectiveness of staff leadership?

RESPONSE:

The NRC has existing policies and processes for managing the performance of its employees in the Senior Executive Service (SES). They include adherence to the "Principles of Good Regulation," establishing and meeting or exceeding annual performance metrics, and working toward achieving the goals and objectives in the agency's Strategic Plan. Our SES performance appraisal system, which has been certified by the U.S. Office of Personnel Management, requires multiple levels of review of each SES employee's performance appraisal. SES employees are appraised by their supervisors, and the majority of SES appraisals must also be reviewed and signed by a reviewer or Ranking Official, who is one level above the SES employee's supervisor. In addition, a Performance Review Board and the Appointing Authority review the

appraisal information. This process provides a robust framework for measuring, monitoring, and validating the performance and effectiveness of staff leadership.

Additionally, the NRC actively utilizes tools and data such as the annual Federal Employee Viewpoints Survey (FEVS) results to inform leadership on whether the staff leadership is succeeding in areas of strategic focus. Some current areas of strategic focus include increasing the Leaders Lead and Employee Engagement Indexes.

> 2. Recent NRC experience with advanced reactor licensing and development of new regulatory frameworks for advanced reactors has highlighted the importance of effective communication. Discussions with NRC applicants and licensees indicate that effective communication between applicants and NRC staff and management is critical to successful resolution of licensing questions. Ineffective communication between NRC and stakeholders has contributed to challenges encountered during the development of the 10 CFR Part 53 regulatory framework.
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> > a. What steps is the NRC taking to promote effective communication between the NRC and stakeholders including applicants, licensees, members of the public, and other stakeholders?

RESPONSE:

The NRC staff continues to engage extensively with external stakeholders, including applicants, licensees, members of the public, and other stakeholders, with the goal of promoting an effective exchange of information among all parties. Since 2018, the NRC staff has held over 140 public engagements per year on specific advanced reactor licensing reviews, including for light water small modular reactors and non-light water reactors, as well as on generic regulatory infrastructure improvements such as the Part 53 rulemaking. These engagements also include periodic advanced reactor stakeholder meetings held approximately every 6 - 8 weeks to share information on topics related to the development and licensing of advanced reactors with the nuclear industry, the Department of Energy, national laboratories, members of the public, and other stakeholders. These meetings serve as an effective venue to exchange information. Effective communication does not necessarily equate to agreement on all issues between all parties but rather means that concerns are shared and heard. The NRC staff made a number of changes to the draft proposed Part 53 rule based on stakeholder feedback, including providing options for using a probabilistic risk assessment and expanding the performance-based provisions in areas such as fire protection and operator licensing. Open communication with stakeholders and further opportunities for the agency to leverage feedback will continue as part of the rulemaking process once the Commission has provided its direction on the proposed rule currently before it.

For prospective new reactor applicants, the NRC staff encourages engagement with NRC staff early in their design process through drop-in meetings and public meetings where the NRC staff

can provide any needed clarifying information about its licensing processes and expectations for conducting effective and efficient reviews.

To promote effective communication, the NRC staff also encourages prospective applicants to submit a regulatory engagement plan. This would assist the NRC staff in establishing a common understanding on the objectives, milestones, and resources for pre-application activities.

During pre-application reviews, there are several options for prospective applicants to engage with the NRC staff, including submitting white papers and topical reports to obtain written NRC staff feedback. In the case of topical reports, the NRC staff provides conclusive findings in safety evaluation reports that can be referenced in future license applications. This can enhance regulatory predictability on key licensing and technical issues before an application is submitted.

Effective communication does not only involve engagement with stakeholders from industry. The NRC staff also proactively engages with state and local stakeholders to provide informational briefings on licensing processes and requirements to encourage an understanding of the process and opportunities for stakeholder participation. The agency has also started sharing dashboards on project status, such as in the case of the Kairos Hermes dashboard. In addition, the agency is working to provide more public-friendly information on topics of interest, such as the accident tolerant fuel webpage.

> b. What is the value of allowing informal, non-public meetings between applicants and staff to facilitate more efficient, effective communication and licensing processes?

RESPONSE:

The NRC staff adheres to its "Principles of Good Regulation," which includes conducting its business in a manner that is open and accessible to the public to the greatest extent practicable. The agency also closely adheres to its policy regarding public meetings, "Enhancing Participation in NRC Public Meetings." This policy "applies to planned, formal encounters between NRC staff members and outside individuals or entities, with an expressed intent of discussing substantive issues directly associated with the NRC's regulatory responsibilities" and prioritizes accessibility and transparency in agency actions. The NRC has processes in place that allow for non-public interactions that are consistent with these policies. For example, meetings may appropriately be closed to the public to allow for discussion of sensitive information, such as proprietary or security related information. The NRC staff has also increased the use of regulatory audits during application reviews as a streamlined process tool to promote efficiency. Regulatory audits provide a mechanism for more robust and direct exchange of information. Any information identified in an audit as needed to support the NRC staff's safety findings is submitted on the docket and made publicly available, as appropriate. Regulatory audits have proven to be valuable in enhancing the understanding of technical issues and increasing the overall effectiveness of reviews. Additionally, prospective licensees and vendors can schedule drop-in meetings, which are informal, non-public discussions limited to a general exchange of

information. The NRC staff conducts numerous public meetings with prospective applicants ahead of submittals to create an opportunity for attaining a common understanding of expected timelines, regulatory requirements, and expectations, as well as to identify significant policy and technical issues to enable timely resolution.

c. What should be done to increase informal communication?

RESPONSE:

The NRC is committed to providing opportunities for candid and meaningful stakeholder participation and demonstrating that the agency is a capable, independent, trustworthy, and objective regulator. The NRC supports informal communications where appropriate, but must do so in an open and transparent manner to ensure all stakeholders have access to relevant information and have a meaningful role in the regulatory process On some occasions, to allow for the discussion of proprietary, safeguards, personal privacy, or other exempted information, the NRC conducts closed meetings with stakeholders, but those meetings are announced for public awareness. The NRC staff continues to be open to exploring additional ways to enhance communication with its stakeholders, including informal communications, as long as it remains consistent with our policy regarding public meetings and our "Principles of Good Regulation."

3. In the Nuclear Energy Innovation and Modernization Act (NEIMA), Congress directed the agency to develop a new risk-informed, performance-based rulemaking to enable the timely and predictable licensing of advanced reactors. NRC staff provided a draft proposed rule to the Commission that the Nuclear Energy Institute and the U.S. Nuclear Infrastructure Council consider not viable.

a. What was the staff's justification for providing an unusable rule to the Commission?

RESPONSE:

The NRC staff engaged in a comprehensive and transparent effort to develop the Part 53 draft proposed rule for Commission consideration. The draft proposed rule rests on licensing methodologies that reflect close adherence to Commission policy and direction and rely on considerable public engagement, including substantial interactions with the industry. The NRC staff diligently solicited and considered stakeholder feedback throughout the draft proposed rule's development. Over a 22-month period between December 2020 and September 2022, the staff published over 20 iterations of preliminary proposed rule language. The staff also made a number of changes to the draft proposed rule based on stakeholder feedback, including providing options for using a probabilistic risk assessment and expanding the performance-based provisions in areas such as fire protection and operator licensing. In parallel with frequent rule language releases, the staff conducted 24 public meetings. The staff also held 16 public meetings with the Commission's Advisory Committee on Reactor Safeguards to benefit from the views of the Committee. This process provided stakeholders the opportunity to actively engage with the

NRC staff during the development of the draft proposed rule language and enabled the staff to create a more refined set of draft regulations.

b. How much was spent to develop the proposed rule, both in dollars and FTE?

RESPONSE:

Since 2019, the NRC has spent 36.9 FTE ($7,283.7K) on NRC staff and $2,077K in contractor support, respectively, to develop the Part 53 draft proposed rule.

c. How will the Commission remedy this situation and produce a useful rule in accordance with Congress' direction in NEIMA?

RESPONSE:

The Part 53 draft proposed rule is currently under consideration by the Commission. The Commission continues to place a high priority on the timely establishment of the Part 53 regulatory framework and is actively considering the many important policy issues involved in this rulemaking. Once the Commission completes deliberations, the Commission will provide direction to the NRC staff. Based on direction from the Commission, the staff will revise the draft proposed rule before publication of the proposed rule in the *Federal Register* for public comment. The NRC will consider all comments received on the proposed rule and will provide written responses to the comments with the final rule. The public comment process may also result in additional changes to the draft final rule text prepared for Commission consideration. The NRC is currently working to complete this rulemaking significantly ahead of the NEIMA required deadline of December 31, 2027.

4. NRC applicants and licensees have reported that the quality of the NRC Project Manager responsible for a license application review or other regulatory review can have an outsized impact on the outcomes of the review. A high-quality project manager can facilitate an effective and efficient review while a poor-quality project manager may allow unnecessary delays or unproductive and distracting reviews by unfocused NRC staff. Some stakeholders have expressed concern that NRC project managers are not empowered to effectively manage technical staff and focus reviews on issues more important to safety.

a. What steps is NRC taking to improve project management, empower project managers to do their jobs and do them well, and ensure that all projects are assigned high quality project managers?

RESPONSE:

The NRC staff agrees that project managers are critical to executing efficient and effective license reviews, and they are empowered to do so by processes currently in place.

The agency has a formal qualification process to which all project managers are subject. This qualification process includes dedicated time to learn processes and procedures, train under a qualified project manager, apply project manager skills, and demonstrate knowledge by successfully completing a qualification board. In addition, the agency has established guidance to support project managers' effective and consistent execution of projects as outlined in office instructions such as "License Amendment Review Procedures," "Acceptance Review Procedures for Licensing Basis Changes," and "Processing Requests for Additional Information." Built into each of these processes are opportunities for licensees and stakeholders to engage with the NRC to question the staff's findings and determinations and, among other things, raise concerns with the regulatory basis for the staff's decisions. Project managers also facilitate significant agency decision-making such as potential non-acceptance, requests for additional information, or denials of applications, prior to engaging with the licensees. The NRC's guidance is also periodically reviewed and modified, as needed, to incorporate any process improvements and reflect lessons learned from prior licensing reviews.

Updating NRC processes, procedures, and training has a critical impact on the ability to conduct timely and reliable safety reviews. In 2023, the NRC updated its guidance to include a new appendix specific to the qualification of new reactor project managers. Leveraging lessons learned from recent application reviews, the NRC made improvements in how we prepare for and conduct reviews. Examples of improvements include enhanced pre-application engagement, and early alignment meetings, as needed, to provide a common understanding of the expected scope of review, streamlined reviews, use of requests for additional information templates, increased use of audits to support preparation of safety and environmental reports, and the development of draft documents in parallel with ongoing reviews.

> b. How are you incorporating industry accepted project management best practices and expertise?

RESPONSE:

The NRC staff adheres to project management best practice principles, which include establishing clear objectives, proper planning, managing resources, contingency planning, and monitoring progress and performance. These principles are reflected in key staff guidance documents that cover each phase of the licensing review process. In addition, the NRC has internal controls, such as periodic updates to the guidance or audits by the Inspector General for such processes to reaffirm or recommend improvements.

We offer project managers industry-recognized training and additional external project management training. This training helps establish foundational competencies for entry-level project managers and leverage current industry standard aptitudes for seasoned project managers. For instance, we recently graduated a class of thirty in Agile Project Management and will be graduating another thirty in the first quarter of fiscal year (FY) 2024. In addition, the NRC also has staff who have attained or are pursuing government or industry-recognized project management certifications.

We have introduced resources that detail review schedules and integrate master timelines, which support risk-informed decision-making and safety-focused reviews. Use of these schedules and dashboards allow for better communications and transparency, resulting in improved resourcing and application quality that enhances identifying, tracking, and addressing safety significant issues. Cohesion between technical staff and project managers during both the planning and execution phases of projects allows for technical challenges or policy issues to be clearly understood and identified. This early engagement allows for a prompt review by an interdisciplinary team.

The Honorable Jeff Duncan:

1. The Committee is updating a bill to direct the NRC to evaluate the current environmental review process for reactors and identify areas where there are reasonable options for less burdensome assessments under NEPA.

    a. What opportunity, beyond recent changes to NEPA, do you see to reduce duplicative or unnecessary environmental reviews to license reactors more efficiently?

RESPONSE:

The NRC has identified several opportunities to make reactor environmental reviews more efficient. For example, the NRC has processes in place to develop environmental review documents that utilize "tiering" and "incorporation by reference" to streamline environmental reviews. The staff used this approach for the Kairos Hermes reactor review, utilizing applicable information and analysis from the Clinch River early site permit Environmental Impact Statement (ESP EIS). Also, the body of the Kairos Hermes final EIS is under 150 pages. This is almost a 75% decrease in the number of pages from the Clinch River ESP EIS, the last new reactor EIS published by the NRC. The page count is also within the EIS page limit established by the Fiscal Responsibility Act.

The NRC is also updating multiple generic environmental impact statements (GEISs) to improve efficiency in reactor environmental reviews. Specifically, the NRC staff is:

- preparing a draft final rule package to update the NRC's "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (License Renewal GEIS) to account for new information and to address the impacts of initial license renewals (40-60 years), which the previous versions of the License Renewal GEIS considered, as well as subsequent license renewals (60-80 years);
- working to update the "Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities"; and
- provided to the Commission in November 2021, for its consideration, a draft "Generic Environmental Impact Statement for Advanced Reactors" (ANR GEIS) and a draft proposed rule that would codify the generic findings of the ANR GEIS.

Other activities the NRC staff are undertaking to increase the efficiency of environmental reviews include:

- awaiting Commission direction on a draft proposed rule developed in November 2022 to revise the NRC's categorical exclusions, including the addition of several new categorical exclusions;
- issued for public comment draft guidance, NUREG-2266, "Environmental Evaluation of Accident Tolerant Fuels with Increased Enrichment and Higher Burnup Levels" that generically analyzes the reasonably foreseeable environmental impacts of near-

term accident tolerant fuel technologies with increased enrichment and higher burnup; and

- increasing the use of memoranda of understanding with cooperating agencies, such as the Department of Energy, to reduce duplicative NEPA efforts on various projects.

2. What authorities can Congress provide to improve the efficiency of NRC's decision-making on advanced reactors?

RESPONSE:

The NRC staff has not identified any additional authorities necessary at this time to improve the efficiency of the NRC's decision-making on advanced reactors. The NRC staff continues to evaluate additional deployment scenarios, such as transportable microreactors with preloaded fuel, and will continue to consider whether additional legislation may be needed.

3. The NRC has yet to meet the cap NEIMA set for corporate support. For three years in a row, the NRC's fee-billable licensing and oversight work is below $200M while the agency's budget requests continue to grow. The agency had $92M in carryover in FY 2022 and asked for significant budget increases in FY 2023 and FY 2024.

    a. Whenever the agency overestimates its workload or total budget, the annual fee for operating reactors increases. How does the agency justify this as fair?

RESPONSE:

The agency budgets for projected workload largely based on information from licensees, applicants, and potential applicants. The underutilization of budgeted resources often occurs due to delays in the submittal of applications for licensing actions. The NRC's final fee rule is based on the appropriations legislation enacted by Congress. The NRC's final fee rule complies with NEIMA, which requires the NRC to recover, to the maximum extent practicable, approximately 100 percent of the total budget authority enacted for the NRC for the fiscal year, less certain amounts excluded from this fee-recovery requirement. NEIMA also caps the annual fee for operating reactors, to the maximum extent practicable, at the FY 2015 annual fee adjusted for inflation. Operating reactor annual fees have consistently been below this cap.

    b. Did the funding from licensing fees of the University Nuclear Leadership Program violate NEIMA restrictions? What is the justification for funding with licensing fees?

RESPONSE:

In recent years, the University Nuclear Leadership Program has been funded with carryover consistent with Congressional direction included in the explanatory statement accompanying the appropriations legislation for the fiscal year. The fee-recovery requirements in section 102(b) of NEIMA apply to budget authority enacted for the current fiscal year.

c. Of the $92M in carryover from 2022, how much was collected from taxpayers and how much from licensees?

RESPONSE:

The $92M in carryover did not come exclusively from FY 2022. It is a cumulative total of all prior years. Of the $92M carryover balance, approximately $60M came from fee-recoverable funds and approximately $32M came from non-fee-recoverable funds.

d. How much would the annual fee for operating reactors have decreased if the NRC had budgeted accurately without resulting in $92M in carryover?

RESPONSE:

Only a portion of the $92M in carryover was factored into the budgeted resources recovered through annual fees for operating reactors in the FY 2022 fee rule. Of the $92M in carryover, the portion from fee-recoverable funds in the Nuclear Reactor Safety control point is $42.9M, which consists of $32.7M from FY 2022 funds that were not obligated, $4.9M in carryover from prior years, and $5.3M in de-obligations from prior years recognized in FY 2022. Although the fee calculation is more complicated, using a simple approximation the $32.7M would equate to about $350,000 per operating reactor. The FY 2024 budget request proposes using $27.1 million in carryover to offset the Nuclear Reactor Safety budget, which would reduce the annual fee for operating reactors in FY 2024.

e. How did the NRC spend the $92M in carryover from 2022?

RESPONSE:

The NRC has not spent all of the $92M in carryover. Of this balance, the NRC allocated funds as follows:

Amount (In Millions)	**Description**
$15.5	University Nuclear Leadership Program/Integrated University Program grants
6.4	Commission carryover
4.9	Fee recoverable operating reactor emergent needs
3.6	Advanced reactor emergent needs
2.0	Corporate support - space planning and renovations

2.0	International activities emergent needs
1.0	Office of the Inspector General carryover
1.0	Minority Serving Institution grants
0.6	New reactors emergent needs
0.4	Ukraine supplemental appropriation carryover
0.4	Spent Fuel Storage and Transportation emergent needs
0.1	Nuclear Waste Fund carryover
0.1	Agreement State oversight travel needs
0.1	Miscellaneous emergent needs ($40,000 for Nuclear Material Users and $17,500 for Official Representation)
$38.1	**Total**

f. How much carryover does the NRC estimate for FY 2023?

RESPONSE:

The NRC estimates the carryover balance at the end of FY 2023 will be approximately $103M. Of this balance, approximately $54M is anticipated to come from the beginning balance not used in FY 2023, approximately $3M is anticipated to come from de-obligations of prior year funds not used in FY 2023, and the remaining $46M is anticipated to come from unobligated FY 2023 funds, much of which is due to schedule changes driven by licensees, applicants, and potential applicants. The FY 2024 budget request proposes using $27.1 million in carryover to offset the Nuclear Reactor Safety budget, which would reduce the estimated carryover from $103M to approximately $76M.

g. What actions is the agency taking to improve its fiscal discipline and comply with NEIMA?

RESPONSE:

The NRC is continuing to maintain fiscal discipline and comply with NEIMA. The NRC invests a considerable amount of time and effort to request the resources necessary to accomplish the NRC's mission. The NRC has a robust budget process for systematically improving the way that it plans its work, formulates budgets to accomplish the work, measures its performance, and adjusts its plans, budgets, and performance to best serve the public. During the budget

formulation process, the agency uses direct input from licensees, applicants, and potential applicants to project the resources that will be needed to perform the anticipated workload during a particular fiscal year. The agency also makes use of data from a number of agency systems to analyze actuals to project future need. These financial data and trend analysis are provided to agency decision-makers for the purpose of informing the budget planning, formulation, and execution processes. Fact-of-life changes and emergent shortfalls are evaluated in line with annual appropriations and budget execution.

4. The NRC has had an ongoing transformation effort for the last five years.

    a. How much has NRC spent on transformation and innovation over the last five years?

RESPONSE:

Transformation refers to a fundamental change in agency culture, with a goal of embedding risk-informed decision making and innovative thinking into all our work products. As such, resources spent on transformation and innovation have been interwoven into the agency's other activities. Over the past five years, the cultural shift towards transformation has resulted in the NRC streamlining processes and procedures and maximizing efficiencies to better serve the American public.

    b. Please provide a list of the transformation and innovation goals and objectives.

RESPONSE:

The NRC uses the "objectives and key results" methodology to assess and evaluate the progress of the agency's transformation. The objectives that are identified through this methodology correlate to annual goals. For calendar year 2023, the agency's objectives are:

Objective 1: Foster a healthy organizational culture in which the workforce is engaged, adaptable, and receptive to change and makes data-driven and evidence-based decisions.

Objective 2: Attract, develop, and maintain a high-performing, diverse, engaged, and flexible workforce with the skills needed to carry out the NRC's mission now and in the future.

    c. What metrics does the NRC have in place to track progress toward the transformation goals and objectives?

RESPONSE:

The agency's transformation initiative is rooted in making cultural changes in the way that the NRC does its work. At a large-scale organizational level, success in transformation can be tracked though shifts in agency processes that result in more risk-informed and durable regulatory decisions.

The objectives and key results methodology is one way the NRC seeks to quantify the transformation initiative's success. This methodology correlates to annual goals (e.g., objectives) and identifies measures of success by key results in a given year. In 2020, one agency-level objective was selected with three corresponding key results, which laid the foundation for the transformation journey by identifying the broad goals associated with fundamental concepts. Thereafter, each annual iteration of agency-level objectives and key results were designed to successively build upon the prior year's transformational successes. The objectives and key results methodology has allowed for a focused and coordinated agencywide approach to achieving the NRC's vision of becoming a more modern, risk-informed regulator.

This methodology has allowed the agency to strategically drive agencywide alignment and engagement while identifying targeted progress areas within the four transformation focus areas (i.e., Be riskSMART, Innovation, Focus on Our People, and Use Technology). It has also allowed the agency to maximize use of the resources and tools that it has developed to support transformation efforts. For example, the 2020 objectives and key results were intentionally broad and intended to help employees understand what the transformation vision of becoming a more modern, risk-informed regulator meant in practice. This first iteration of objectives and key results enabled the agency to develop the roadmap by identifying and implementing the tools and resources necessary for the transformation journey.

The tools and resources that were developed in 2020 include the Be riskSMART framework, IdeaScale innovation platform, and the Guide to Career Enhancement. These tools and resources helped provide the necessary infrastructure to support the agency's transformation. This important foundational work served as the springboard for the 2021 objectives and key results, which were crafted, in part, to collect data on the staff's use of transformation tools as well as external stakeholder views on the agency's efforts. These were the next strategic steps in helping transformation take root throughout the agency by empowering the staff at all levels and across all organizational sectors, while gathering insights into how transformation has improved the efficacy and efficiency of agency operations. The 2022 objectives and key results were intended to sustain transformational progress in the long term and further reinforced the four transformation focus areas. The 2023 agency-level objectives and key results are focused on our organizational health, particularly in the areas of staff retention and engagement as well as recruitment and hiring.

d. Please provide a list of the innovations, efficiencies, and cost savings resulting from the transformation effort.

RESPONSE:

The purpose of transformation efforts at the NRC is twofold: to foster a culture of creativity and continuous improvement and to make better, more robust regulatory decisions. The point of transformation is not focused on cost-savings; it is driven by a desire to bolster better overall regulatory decision-making.

Our transformation initiatives are focused on 1) our people; 2) risk-informed decision-making; 3) technology, including data analytics; and 4) innovation. These efforts have resulted in the following innovations and efficiencies:

- Our People
    - We launched the Nuclear Regulator Apprenticeship Network (NRAN), which currently includes 25-member cohorts of diverse and talented staff from different colleges and universities.
- Using Technology
    - Over 160 data analytic dashboards are used at the NRC to assist in its decision-making and help external stakeholders easily find information.
    - Developed online portals to standardize and streamline submission of licensee requests.
- Be riskSMART Framework
    - A plain language framework that:
        - Assesses risk to focus on issues of greater safety significance.
        - Uses risk information to inform the agency's regulatory decisions in all areas: technical, corporate, and legal arena.
    - Using this framework has been key in activities such as developing the new Operating Reactor Analytics public website, allowing users to filter and sort results by site, Region, or licensee. This project provides an overview of plant performance, with the Reactor Oversight Process explained in plain language, to make it easy for members of the public to understand how findings and performance indicators relate to our assessment.
- InnovateNRC 2.0
    - IdeaScale, the agency's innovation platform, has produced success stories such as:
        - 2022 – eConcurrence:
            - Streamlined document concurrence and enhanced transparency by allowing individuals to see comments, respond to comments, and make edits in real time, thereby increasing focus on the most safety significant issues.
        - 2023 – Modernized Agency Document and Management System (ADAMS) Content Search using Azure Cloud Services:
            - Leverages technology to allow staff to easily search for documents to enhance risk-informed decision making.

5. For the last three years, the NRC has billed less than $200M for all of its oversight and licensing work, a small fraction of the NRC's budget.

a. What actions does NRC take to ensure its safe mission is balanced with the need for timely decision-making?

RESPONSE:

NRC management is appropriately engaged in the status of planned and ongoing reviews. For example, workload management meetings are held frequently with NRC management to discuss status, challenges, and actions related to licensing programs, including for operating reactors, non-power production or utilization facilities, new and advanced reactors, decommissioning facilities, and other materials facilities. This active management engagement allows for quicker identification and resolution of issues as they arise.

The NRC has taken a number of steps to incorporate risk-informed decision-making into the performance of the agency's safety and security mission. For example, the NRC staff have received training on the use of risk-informed decision-making. Leaders at all levels have communicated the expectation to incorporate the use of risk concepts in all agency decision-making.

> b. What actions does the NRC take to ensure adequate resources are prioritized for licensing reviews to ensure those reviews are completed timely and on schedule?

RESPONSE:

The NRC staff encourages robust pre-application engagement prior to the submission of an application. This allows for the timely identification and resolution of technical and policy issues and assists the NRC in determining resource and budget needs to support efficient reviews.

As discussed in Regulatory Issue Summary, "Process for Scheduling and Allocating Resources for Fiscal Years 2023–2025 for the Review of New Licensing Applications for Light-Water Reactors and Non-Light Water Reactors," potential advanced reactor applicants are encouraged to engage with the NRC as early as possible to help the NRC plan its resources appropriately. Early notification of future application submissions allows the NRC staff to engage in pre-application activities with developers. These pre-application interactions permit the NRC staff to become familiar with the proposed design and approaches to be used by the potential applicant, to promptly identify and resolve potential policy issues, and to help the NRC prioritize resources in preparation for the review once the application is formally submitted.

Once an application is submitted, the staff performs an acceptance review to determine if there is sufficient information to complete the review in a timely and efficient manner. Also, during the acceptance review process, the staff determines the appropriate technical disciplines required for the review and whether additional support is needed from other parts of the agency or through contract support. Once an application has been accepted, the NRC has the capability to assign additional resources, if needed, to support the timely completion of a review. The staff establishes and communicates review schedules to applicants once applications are accepted.

c. What metrics are in place to track the timeliness of licensing reviews?

RESPONSE:

The NRC has a number of metrics to track the timeliness of licensing reviews.

Section 102(c) of NEIMA required the NRC to develop performance metrics and milestone schedules for "requested activities of the Commission." In response, the NRC established generic milestone schedules for the requested activities of the Commission that involve the issuance of a final safety evaluation, including licenses, permits, certifications, license renewals, and license amendments, and posted them on the NRC's public website (https://www.nrc.gov/about-nrc/generic-schedules.html). NEIMA also established reporting requirements for certain delays in issuance of the final safety evaluation for these activities.

The NRC has established NEIMA performance indicators for each NRC business line that performs requested activities of the Commission, to track the issuance of final safety evaluations against the generic milestone schedule. The NEIMA performance indicators provide an increased level of transparency into the NRC's timelines for issuing final safety evaluations. The performance indicator is 100 percent timely issuance of final safety evaluations by the issuance date set in the generic milestone schedule for all the requested activities of the Commission, as identified by NEIMA, for each business line. The results of the NEIMA performance indicators are tracked in a database and reported on a quarterly basis to senior management at an internal agencywide Quarterly Performance Review meeting and are also included annually in the NRC's Congressional Budget Justification (CBJ). If a NEIMA performance indicator is not met, the Commission is notified consistent with the reporting requirement in NEIMA Section 102(c)(2). In addition, a risk report is prepared consistent with the NRC's process for Enterprise Risk Management, which includes a mitigating strategy to reduce the likelihood of exceeding the 180-day congressional reporting requirement in NEIMA Section 102(c)(3). The NEIMA performance indicators are also included in a quarterly status report provided to the Congressional Committees with oversight of the agency.

High level agency metrics are also periodically reported to Congress in other reports such as the NRC's Annual Performance Plan and Report and a semiannual status report on the NRC's licensing activities and regulatory duties.

In addition, the NRC has many internal metrics to track timeliness of licensing reviews. These internal metrics provide an early indication to identify any schedules that may be at risk. Examples of operating reactor licensing metrics include "timeliness in completion of acceptance reviews" and "completion of 90% of licensing workload within 1 year." These early indications allow the staff to take mitigating actions to address potential delays where possible early in the process. Using a data-driven review process, the NRC periodically reviews these metrics for effectiveness and modifies them as appropriate. The NRC staff also utilizes dashboards to track and communicate the status of reviews relative to established milestones.

d. How does NRC leadership indicate a sense of urgency to completing application reviews for advanced reactors?

RESPONSE:

NRC leadership prioritizes the preparation for and completion of advanced reactor licensing reviews through the establishment of a dedicated internal organization focused on efficient licensing and oversight of advanced reactors and non-power production or utilization facilities, promoting submission of high-quality and complete applications, establishing initial review schedules, emphasizing the safety focus of reviews, and assisting in resolution of issues with applicants. The NRC staff's goal is to complete its review of a licensing application for an advanced reactor on an aggressive but achievable timeframe. The staff takes various steps to achieve this. For example, the staff creates a project charter for each advanced reactor application review, which establishes the expectations for the review and includes the expectation that any issues should be escalated in a timely manner to facilitate prompt resolution. The staff utilizes dashboards to track and communicate the status of each review. In addition, Office of Nuclear Reactor Regulation (NRR) management is routinely briefed on the status of applications and is involved directly in the resolution of issues, as they arise.

d. How does NRC leadership indicate a sense of urgency to completing application reviews for subsequent license extension reviews?

RESPONSE:

NRC leadership remains committed to maintaining the established schedules for both initial and subsequent license renewal reviews. The schedules for individual reviews are communicated to the licensee when the applications are accepted. If the staff proposes to change a schedule, they must justify to management why the change is needed in order to resolve an issue. NRR management is routinely briefed on the status of applications and is involved directly in the resolution of issues, as they arise.

d. How does NRC leadership indicate a sense of urgency to completing application reviews for power uprate reviews?

RESPONSE:

The NRC has a well-established process for reviewing and approving power uprate applications, as demonstrated in the 124 uprates that have been approved since 2000. Since 2015, the NRC has received only 'measurement uncertainty recapture' (MUR) applications, which are small power uprates achieved by implementing enhanced techniques to calculate reactor power more precisely, thus reducing the degree of uncertainty in power level. The NRC has established an Office Instruction, "Power Uprate Process," for reviewing power uprate applications. This Office Instruction describes roles and responsibilities and strengthens coordination for all aspects of power uprate activities. The staff plans to review this Office Instruction and enhance it, as appropriate, as the staff prepares for potential future reviews.

d. How does NRC leadership indicate a sense of urgency to completing application reviews for other license amendment reviews for operating reactors?

RESPONSE:

The NRC staff receives, on average, approximately 1000 licensing requests a year for operating reactors, over half of which include license amendment requests. NRC leadership monitors the effectiveness and efficiency of these reviews through established performance metrics for the reviews, including CBJ metrics as well as internal performance metrics that are tracked and reviewed monthly and quarterly with agency senior leadership. The agency also utilizes dashboards to provide real-time information on the status of reviews and effectiveness of the licensing program.

d. How does NRC leadership indicate a sense of urgency to completing application reviews for fuel facility licensing reviews?

RESPONSE:

The NRC has a well-established process for reviewing fuel facility licensing actions that is documented in formal division-level Instructions and guidance on work prioritization. This process ensures acceptance of high-quality and complete applications, establishes initial review schedules, emphasizes the safety focus of reviews, and assists in resolution of issues with applicants. The NRC encourages any potential applicants to have substantial pre-application engagement that allows for a better understanding of regulatory requirements, NRC staff familiarity with unique aspects of the potential application, and early identification and resolution of technical and policy issues that may affect licensing reviews. It is important for applicants and licensees to communicate with the NRC regarding applications for licensing actions and their schedule needs, so the NRC can adjust resources, if needed. As part of the NRC staff's acceptance reviews, the staff routinely assesses resources and schedule needs to determine assignments in the context of planned work that would require specific technical expertise. To provide transparency, the staff shares the anticipated schedule and resources with the applicant in the acceptance letter and holds routine calls to discuss status. NRC leadership routinely discusses workload and relative priorities and schedules for fuel facility licensing reviews, monitors metrics, and identifies ways to mitigate schedule risk, as needed. Should there be a significant change in the schedule or resources, the NRC staff notifies the applicant.

e. The NRC issued a decision on the Kairos Hermes non-power reactor in 18 months. How long will it take to reach a decision on an advanced power reactor?

RESPONSE:

The NRC staff issued the final safety evaluation for the Kairos Hermes construction permit application in 18 months, ahead of schedule. The NRC has established generic milestone schedules for issuance of the final safety evaluation for the various pathways available for licensing an advanced power reactor (https://www.nrc.gov/about-nrc/generic-schedules.html).

For example, the generic milestone schedule for issuing the final safety evaluation for a combined license application referencing a certified design is 30 months. The NRC staff works with each applicant to establish a specific schedule for each application, which may be shorter or longer than the generic milestone schedule, based on the complexity of the review, information provided by the applicant, and agency resource availability.

The NRC staff encourages all potential applicants to engage in robust pre-application activities to enhance the efficiency of a future license application review. In May 2023, the NRC staff published for public comment draft Interim Staff Guidance, "Review of Risk-Informed, Technology-Inclusive Advanced Reactor Applications—Roadmap," which would, among other things, provide guidance on a set of pre-application activities that would enable the NRC staff to offer more predictable and shorter schedules for the review of an advanced reactor license application.

f. How long does it generally take for the Commission to develop and finalize a policy statement?

RESPONSE

The process generally starts with a proposal from the staff or direction from the Commission to develop a policy statement on a particular topic. After the staff has developed a draft policy statement, the staff typically conducts public engagement, usually publishing the draft policy statement in the *Federal Register*, receiving public comment, making revisions as appropriate to the policy statement, and then providing the proposed final policy statement to the Commission for its consideration. This proposed final policy statement is then subject to the Commission's voting process. As a result, the amount of time to develop and finalize a policy statement varies based on the scope and content of the proposed policy statement, the public engagement conducted during the development, and other factors, such as agency resource availability.

6. What steps will the Commission take in lieu of Commissioner Baran's proposed policy statement on timely decision-making?

RESPONSE:

Commissioner Baran's proposed policy statement on timely decision-making, "Establishing Commission Expectation for the Effectiveness, Efficiency, and Timeliness of New Reactor Reviews," remains pending before the Commission for its consideration. The Commission therefore can still take action on it.

7. Surveys of NRC staff over the past 10 years have shown a relatively steady decline in NRC staff satisfaction with the workplace and management. What do you believe are the root causes for declining employee satisfaction at the NRC, and what steps are you taking to improve NRC staff morale and culture?

RESPONSE:

Over the last ten years, a variety of internal and external factors have affected employee satisfaction at the NRC. One example of an external factor is the aftermath of a "nuclear renaissance" that did not come to fruition. In addition, the agency averted a reduction-in-force of staff by implementing a hiring freeze and encouraging many individuals to move to new positions, which, in some instances, stalled promotions and developmental opportunities. Based on the FY22 FEVS results—which are aimed at assessing various aspects of federal agencies, such as global satisfaction, employee engagement, intrinsic work experience, supervision, and leadership—the recent Public Health Emergency also had a significant impact on the NRC's employees' morale. Specifically, the impact of returning to in-office work despite increased desire to continue teleworking has affected employee satisfaction. In the FY22 FEVS results, approximately 41% of the respondents indicated they were considering leaving the agency, a 15% increase from two years ago. Our data indicates that dissatisfaction with teleworking flexibilities remains a top consideration for staff seeking outside employment.

To reverse this trend, the agency leadership continues to focus on several strategies. Specifically, leadership is working to build trust with staff, engaging and empowering supervisors, and developing teams to foster effective working relationships. On April 13, 2023, the Office of Management and Budget (OMB) issued Memo M-23-15, *Measuring, Monitoring, and Improving Organizational Health and Organizational Performance in the Context of Evolving Agency Work Environments*. It commits OMB, in coordination with the Office of Personnel Management (OPM) and the General Services Administration, to providing agencies with analysis assessing trends of select organizational-level indicators of engagement, performance confidence, and other measures related to organizational health. In accordance with Memo M-23-15, OPM recently performed an Organizational Health and Performance Assessment on the NRC. This assessment noted higher than government-wide average scores in key FEVS metrics such as employee engagement, global satisfaction, and Diversity, Equity, Inclusion, and Accessibility. Recent FEVS scores also demonstrate other strengths, including NRC employees' strong connection with their supervisors and a deep commitment to the agency's mission. As we continue to work to establish an ideal culture, we have made noted progress, which resulted in higher levels of performance confidence than many other federal government agencies. Going forward, the agency will continue to leverage organizational strengths and build on areas where we can improve that are identified through the FEVS and other metrics and assessments, to focus on building morale and improving employee satisfaction.

The Honorable Tim Walberg:

1. NEI recently conducted a survey that found that over half of nuclear utilities are exploring power uprates, which could provide over 2 additional gigawatts of clean, baseload energy in the next decade. This means more uprate and license renewal applications submitted to the NRC, but the problem is the NRC's review process has gotten longer and longer, and consequentially more and more expensive. Is the NRC prepared to perform the safety reviews for power uprates in an efficient manner and reverse the trend of longer and more costly reviews?

RESPONSE:

The NRC has a well-established process for reviewing and approving power uprate applications (as of August 2023, 124 uprates have been approved since 2000). The NRC has established an Office Instruction, "Power Uprate Process," for reviewing power uprate applications. This Office Instruction describes roles and responsibilities and strengthens coordination for all aspects of power uprate activities. The staff plans to review this Office Instruction and enhance it, as appropriate, as the staff prepares for potential future reviews.

In SECY-13-0070, the staff estimated resources for MURs, stretch power uprates, and extended power uprates application reviews to be 1,200, 3,500, and 7,500 hours, and 9, 12, and 18 months, respectively. Since 2015, the NRC has only received applications for MUR power uprates, with the review resources and schedule falling generally within the estimates above. The staff intends to continue to leverage its proven process for future reviews and will continue to review historical data for trends and areas to improve efficiency. The NRC staff will continue to be sensitive to licensee plans for power uprates and, provided licensees inform the NRC of their plans with sufficient lead time, will devote the review resources necessary to support timely application reviews.

Although there are currently no power uprate applications in house, the NRC staff continues to engage with licensees in preparation for the potential increase in power uprate applications in response to the Inflation Reduction Act.

The Honorable Randy Weber:

1. NRC encourages advanced reactor developers to engage in pre-application. Although NRC has stated that the pre-application engagement is voluntary, pre-application was a factor in denying an application for an advanced reactor. Pre-application guidance to developers has also remained in draft form since 2021.

a. When does NRC plan to finalize its guidance on pre-application, and to what extent does it plan to clarify to applicants the extent to which developers should engage in pre-application so that developers are certain about NRC's expectations?

RESPONSE:

The NRC staff plans to finalize draft Interim Staff Guidance DANU-ISG-2022-01, "Review of Risk-Informed, Technology Inclusive Advanced Reactor Applications—Roadmap," by mid-2024. This draft guidance was published for public comment in May 2023, and the public comment period closed on August 10, 2023. DANU-ISG-2022-01, if issued as final guidance, would, among other things, provide information on the benefits of robust pre-application engagement with advanced reactor developers in order to optimize both safety and environmental application reviews. Pre-application engagement is voluntary and thus an application would not be denied solely on the lack of it. However, the lack of pre-application engagement is a missed opportunity for applicants to better understand staff expectations and agency acceptance requirements. This lack of engagement also could result in an increased need for clarification during the staff review process (e.g., RAIs, RSIs). The NRC staff emphasizes the importance of pre-application engagement through various outreach activities and methods of communication with stakeholders, including in periodic stakeholder meetings. The NRC is currently engaged with more than 15 separate entities in pre-application interactions.

b. Does the NRC provide milestones for measuring how much pre-application engagement speeds up the licensing process and reduces costs?

RESPONSE:

The NRC does not currently have specific milestones for measuring the impact of pre-application engagement on the timeliness and cost of the licensing process. In the most recently completed advanced reactor application safety review of the Kairos Hermes test reactor construction permit, the NRC staff and Kairos were engaged in significant pre-application interactions, including approval of eleven topical reports, participation in four pre-application audits of the application, and engagement in numerous pre-application meetings focused on the novel and most safety significant aspects of the design. This helped to enable the staff to complete the safety review in 18 months—six months faster than the NEIMA generic milestone schedule—and on budget. The pre-application draft guidance in DANU-ISG-2022-01 would provide suggested topics for engagement during pre-application (e.g., source term development,

quality assurance program, fuel qualification) that may support more efficient reviews of license applications.

i. If yes, will you supply these milestones for the committee?

RESPONSE:

- N/A

The Honorable Troy Balderson:

1. There was a recent survey from nuclear utilities which found that these utilities expect to more than double their nuclear energy capacity to meet emission-reduction goals. If you assume the reactors are 300 Megawatt on average, that would mean 300 new reactors by 2050, or nearly 12 reactors every year. Could the NRC handle reviewing a dozen or more reactors every year from now until 2050? If not, how can we ensure NRC is prepared for this future market?

RESPONSE:

The NRC is well positioned to review multiple reactor applications in parallel over the coming years. The staff expects knowledge from the initial review of a reactor design to enhance the NRC's ability to perform licensing reviews efficiently and effectively for subsequent applications for the same and similar designs. The staff is currently reviewing evolutions of the Kairos Hermes and NuScale reactor designs and anticipates completing these reviews more quickly and with fewer resources than the first reviews. Additionally, the staff developed the Design Centered Review Approach, "Applications for Nuclear Power Plants," to encourage the standardization of applications and to facilitate a predictable and consistent method for application review. This approach, originally developed for 10 CFR Part 52 applications, is currently being augmented to address 10 CFR Part 50 applications and will enhance the NRC's ability to review similar applications in a timely manner. The NRC forecasts the necessary staff to complete anticipated work through our budgeting and Strategic Workforce Planning processes. The NRC is in the process of hiring additional staff to support the anticipated workload. The NRC staff is also enhancing its processes to gain efficiencies such as use of core teams that develop expertise in the designs under review that is applied to subsequent reviews, developing templates for safety evaluations, and instituting parallel reviews of documents where possible. The agency is also focused on incorporating risk-informed decision-making into its review and streamlining its environmental review process consistent with the recent amendments to NEPA.

2. I've heard concerns that if the NRC waits for industry to grow before adequately preparing to regulate; it will be a self-fulfilling prophecy that there is no widespread deployment as the NRC is required to review and approve every application before it can be built. What are you doing to ensure that NRC is adaptable to the industry?

RESPONSE:

The NRC is prepared to license new and advanced reactors. The staff is executing its vision to conduct its work as a modern, risk-informed regulator by streamlining processes and risk-informing decision-making to enable the safe deployment of advanced reactor technologies. The NRC has developed implementation action plans to support readiness for advanced reactor reviews.

One area identified in the implementation action plans was development of an appropriately sized workforce with knowledge of the anticipated new technologies. The NRC staff has enhanced its advanced reactor technical readiness in accordance with Section 103(a)(5) of NEIMA. This section required the NRC to provide for staff training or hiring of experts to support the activities specified in Section 103(a)(1) - (4) of NEIMA, as well as to support preparations for pre-application interactions and license application reviews for advanced reactors. The NRC maintains external awareness of new technologies, industry implementation plans, and any potential associated regulatory and staffing needs through the NRC's continuing active engagement with potential vendors, prospective applicants, industry groups, research organizations, the Department of Energy and national laboratories, and international counterparts.

Using this information and the NRC's Strategic Workforce Planning process, pertinent staff skill sets are identified up to 5 years in advance of the anticipated need. The NRC leverages a spectrum of tools to facilitate having the relevant expertise in the expected timeframe. Examples include seminars to increase awareness and broad understanding of new technologies, focused training of existing staff on specific technology applications, hiring of new staff to fill known gaps for expected applications, using the expertise of rehired annuitants, and identifying national lab and contractor expertise for focused activities.

Another key goal of these plans is to develop guidance for a flexible regulatory review process within the current regulations. To this end, the staff has developed technology-inclusive guidance for various topics, including risk-informed and performance-based licensing approaches, advanced reactor design criteria, fuel qualification, probabilistic risk assessment, and high temperature materials. The staff is also in the process of developing final guidance on the content of non-light-water reactor applications and additional guidance on risk-informed and performance-based licensing approaches.

Consistent with NEIMA, the NRC staff continues work to develop a new technology-inclusive, risk-informed and performance-based regulatory framework which, when adopted, would be codified as 10 CFR Part 53. On March 1, 2023, the NRC staff provided the 10 CFR Part 53 draft proposed rule package, "Proposed Rule: Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors," to the Commission for its consideration. In addition to the 10 CFR Part 53 rulemaking, there are several other transformative rulemakings underway aiming to adapt the NRC's regulatory framework to be more technology-inclusive, risk-informed, and efficient. On August 14, 2023, the Commission approved issuance of a final rule amending 10 CFR Part 50 to include new alternative emergency preparedness requirements for small modular reactors and other new technologies. The NRC staff has also provided to the Commission for its consideration a draft proposed rule on physical security requirements for advanced reactors, as well as a draft GEIS for advanced reactors and a draft proposed rule to codify its generic findings.

The NRC staff continues to prioritize advanced reactor readiness activities and be cognizant of industry's deployment plans. As indicated in Regulatory Issue Summary, "Process for

Scheduling and Allocating Resources for Fiscal Years 2023-2025 for the Review of New Licensing Applications for Light-Water Reactors and Non-Light-Water Reactors," the NRC staff proactively seeks input from potential applicants regarding their plans for new reactor licensing activities. Robust pre-application engagement with prospective applicants also allows for the timely identification and resolution of technical and policy issues and assists the NRC in determining resource and budget needs to support efficient reviews. The NRC's budget formulation activities reflect this continual level of engagement with prospective applicants and prioritizes the appropriate resources to support new and advanced reactor licensing activities. Reviews of topical reports and white papers can be part of this pre-application engagement. To date, the NRC has completed the review of 79 topical reports and white papers and is currently evaluating 29 submissions.

3. It is anticipated there will be an influx of new reactor license applications to the NRC. What lessons has NRC learned from initial reviews and what review efficiencies are anticipated for future reviews?

RESPONSE:

The NRC staff has adopted a continuous learning approach to gain insights from completed reviews to improve the efficiency and effectiveness of subsequent reviews. For example, the staff performed an assessment of its experience with the NuScale design certification application review, which culminated in the publication of "Lessons Learned from the U.S. Nuclear Regulatory Commission Staff's Review of the NuScale Design Certification Application" in March 2022. This assessment identified several best practices and lessons learned from the NuScale review. Some of the best practices identified included pre-application interactions that improve the NRC staff's understanding of the design, use of topical reports for novel design features and approaches, and use of information technology to enhance efficiency during the review process. Some of the lessons learned included establishing interdisciplinary review teams during the pre-application engagement phase, using tools other than formal requests for additional information to gather information from applicants necessary for application reviews, and leveraging information technology and dashboards to enhance transparency regarding project status. The lessons learned from the NuScale review have been incorporated into staff processes and should lead to enhanced stability, more focused risk-informed reviews, better use of information-gathering tools, and greater transparency throughout the review process.

Similarly, the staff has proactively engaged in lessons learned activities associated with the Kairos Hermes construction permit application review. This has allowed the staff to identify best practices and address challenges that will help inform the Abilene Christian University construction permit application review as well as reviews of other potential future applications.

Lastly, the NRC issued a lessons-learned report in 2013 after the issuance of the combined licenses (COL) for V.C. Summer, Units 2 and 3 and Vogtle, Units 3 and 4 to provide potential enhancements to the licensing process under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," and contribute to more effective and efficient reviews of

future reactor applications. The suggested enhancements in the report were in the following areas: quality of license applications, new reactor review guidance, standardization, identification and resolution of technical issues, knowledge management, timing and sequencing of license applications, and updates to regulations. In “Proposed Rule: Alignment of Licensing Processes and Lessons Learned from New Reactor Licensing,” the NRC staff submitted for Commission approval a proposed rule that, in part, incorporates lessons learned from new reactor licensing into NRC regulations. In particular, the draft proposed rule includes recommendations to improve the design certification process, streamline the process for departures from NRC-approved designs, and enhance requirements for operator licensing and several operational programs. The NRC staff is also in the process of developing a report that addresses some of the lessons learned from activities conducted after COL issuance, that could be applicable to future advanced reactor projects. A few examples include:

- The Vogtle Readiness Group has been valuable in supporting construction oversight by using "core" teams to identify and resolve issues in licensing and inspection early, using performance monitoring tools throughout the project, and engaging management consistently.
- In the area of licensing, the staff developed an expedited license amendment review process for low-complexity issues regarding compliance with inspections, tests, analyses, and acceptance criteria (ITAAC). This revised process promoted faster review times, in which non-exigent license amendment reviews could be processed in as few as 35 days. This was a significant improvement over the previous average review time of 183 days for 56 license amendment reviews in fiscal year 2018.
- The adoption of weekly scheduled public meetings with the licensee allowed the NRC to address emerging licensing or ITAAC issues quickly.

The Honorable Frank Pallone, Jr.

1. In 2021, FirstEnergy Corp., a utility that previously owned several nuclear plants, entered into a deferred prosecution agreement with the U.S. Department of Justice under which it admitted to committing bribery, wire-fraud, and conspiracy as part of a scheme to influence state legislation that would kickback over $1 billion to the company at the expense of ratepayers. The scandal that enveloped FirstEnergy – and a similar scandal in Illinois – has raised serious questions about the type of companies that are operating nuclear power facilities.

    a. What authority does the NRC have to review the financial stability of companies operating nuclear power facilities?

RESPONSE:

The Atomic Energy Act of 1954, as amended, (AEA) authorizes the NRC to issue licenses to operate a nuclear power facility in a manner that promotes the common defense and security and provides reasonable assurance of the adequate protection of public health and safety. The AEA specifically authorizes the NRC to review the financial qualifications of an applicant for a license. The NRC has promulgated regulations to implement this authority. Under these regulations, prior to issuing a license to a company, the NRC must review the company's financial qualifications to carry out the licensed activities. The NRC must also review whether the company has demonstrated reasonable assurance that sufficient funds will be available for the eventual decommissioning process. After a license has been issued, the licensee remains subject to the provisions of the AEA and to the rules, regulations, and orders of the NRC.

    b. How often, if ever, do such reviews occur, what triggers such reviews, and are the results made public?

RESPONSE:

The NRC conducts two separate financial reviews as part of its licensing process: (1) the NRC reviews the financial qualification of an applicant to carry out licensed activities prior to license issuance or license transfer; and (2) the NRC reviews whether an applicant has demonstrated reasonable assurance that sufficient funds will be available for the decommissioning process.

After license issuance, the NRC ensures that the licensee continues to comply with the AEA and NRC regulations as part of the NRC's ongoing oversight. Specifically, the NRC requires the licensee to submit annual financial reports unless the licensee is otherwise required to submit certain forms to the Securities and Exchange Commission or the Federal Energy Regulatory Commission. Further, the NRC reviews the licensee's decommissioning funding status reports that are required to be submitted to the NRC every two years while the plant is operating. NRC guidance provides the following, non-exhaustive, examples of when a review of decommissioning trust funds may be appropriate:

1. A licensee (or its representatives) is indicted or convicted of fraudulent financial activities;
2. A licensee or parent company declares bankruptcy per Chapter 7 or 11 of the U.S. Bankruptcy Code;
3. A licensing action (e.g., license transfer) or a required report reveals a significant decline in a licensee's decommissioning trust fund balance that may have an adverse impact on decommissioning activities; or
4. The NRC substantiates an allegation or inspection finding of licensees misrepresenting decommissioning trust fund balances or making improper withdrawals from the trust fund.

These reviews are rare and are typically associated with a licensee's bankruptcy. Licensees are required to report if they or a parent company declare bankruptcy. All activity associated with these reviews, including NRC requests for information and findings, are publicly available unless withheld under certain circumstances (e.g., business proprietary information, security-related information, etc.).

> c. Does a company's admitting guilt for bribery and fraud trigger a review of the operating license? If the NRC lacks statutory power to review a license after a company admits guilt for bribery or fraud, would it be useful for Congress to pass legislation granting it that power?

RESPONSE:

No, it does not trigger an automatic review because NRC's ongoing oversight ensures that licensees comply with the AEA and the rules, regulations, and orders. The NRC can and will take appropriate action to protect the public health and safety. If Congress were to pass legislation in this area, then the NRC would follow any new requirements.

> d. In the instance where a company is convicted of or admits guilt for crimes relating to its operation of a nuclear plant, does the NRC possess the authority to ban individuals working for the firm and involved in the crimes from ever working in the commercial nuclear industry again? Does the NRC have the ability to condition operating licenses so companies operating nuclear reactors cannot employ executives convicted of crimes relating to bribery or fraud?

RESPONSE:

If the NRC determines that an individual deliberately violated the agency's requirements, then the NRC may take enforcement action against the individual. In significant cases, the individual could be banned from NRC-licensed activities for years. Criminal prosecutions of individuals for willful violations of NRC requirements are the responsibility of the Department of Justice (DOJ). Accordingly, the NRC works closely with the DOJ for potential criminal prosecution referrals consistent with the memorandum of understanding between the NRC and DOJ.

NRC license conditions are focused on the common defense and security and public health and safety with respect to the construction, operation, and decommissioning of a nuclear power facility. License conditions do not typically focus on individual employees. NRC expects licensees and applicants to vet the criminal background of their own employees.

The Honorable John P. Sarbanes:

1. Cancer patients frequently receive nuclear medicine services given in the form of injections of radioactive isotopes, however these injections sometimes partially miss veins and can result in the irradiation of other tissue. This has the potential to result in radiation injury, misdiagnosis or other complications, some of which may take considerable time to manifest, and unintentional irradiation impacts thousands of patients each year. Despite this, NRC exempts events like this from reporting requirements and in 2022, approved a petition for a rulemaking to address this issue. However, I am concerned that NRC's plan may be insufficient and increase burdens on patients by requiring them to identify and report a radiation injury. For example, a patient would have to identify an injury that might not present itself until many months or more later, associate that injury with their nuclear medicine procedure, make a new appointment with a doctor and pay for that care, and convince a provider to look at the relationship between that injury and their prior nuclear medicine injection.

a. Do you believe that process is logistically feasible?

RESPONSE:

The Commission approved a rulemaking plan in December 2022, directing the NRC staff to begin developing a proposed rule to address radiopharmaceutical extravasations. The approach in the rulemaking plan would place the responsibility on medical institutions to report extravasations that require medical attention for a suspected radiation injury. If extravasations are included as medical events in the NRC's regulations, the Commission expects that medical providers would include procedures to properly identify and report these incidences. Medical providers are responsible for tracking, notifying, and following up with patients regarding potential adverse effects of **any** medical treatment.

b. What assurance can you give that NRC's rulemaking in this area will prioritize patient safety and transparency and will not place the burden of identifying and reporting large extraversions on patients?

RESPONSE:

The approach in the rulemaking plan approved by the Commission to begin development of a proposed rule would place the responsibility on medical institutions to report extravasations that require medical attention for a suspected radiation injury. This approach would provide for patient safety while not unnecessarily limiting the beneficial medical use of radioactive materials. As part of the rulemaking process, the NRC is exploring ways to reduce reliance on patient reporting, including potential requirements for detecting and reporting extravasations in a timely manner. The NRC is also developing regulatory guidance to clarify expectations for reporting of these extravasation events, including who can diagnose a radiation injury (e.g., a

physician well versed in radiation effects) and what information should be provided to patients to prepare them for the possible outcomes and side effects of a radiopharmaceutical extravasation.