

Additional Detail on Expert Panels, Guiding Coalitions, and Tiger Teams

This enclosure discusses the Transformation Team's (the Team's) recommendations for organizational tools to implement the risk-informed licensing framework and for preparing the agency for new technology.

A. Organizational Tools To Implement Risk-Informed Licensing

The U.S. Nuclear Regulatory Commission (NRC) staff is recommending the development and endorsement of an agencywide process to systematically expand the use of qualitative and quantitative safety and risk insights to scope the appropriate level of detail necessary to make a finding of adequate protection in licensing. The Team determined that one of the best practices adopted by transformative organizations to address novel issues is developing organizational tools to guide and expedite decisionmaking. Specifically, many innovative organizations use expert panels and small groups of individuals that have the flexibility to develop novel solutions. To support implementation of the revised licensing review process and facilitate timely decisionmaking on licensing decisions associated with new technology, the Team recommends considering the use of several organizational tools. The following table identifies the recommended organizational tools, their purpose, and their composition.

Organizational Tool	Primary Use	Composition
Expert Panel	Guides incoming submittals for new technologies and major licensing actions	Internal and external experts
Guiding Coalition	Guides the licensing process for licensing reviews that are challenged by the current regulatory framework	Small internal group of NRC staff
Tiger Team	Facilitates resolution of NRC challenges presented in licensing activities, such as with new technologies	Small internal group of NRC staff

(1) General Approach Applicable to Each Organizational Tool

The following attributes are generally applicable to an expert panel, guiding coalition, or tiger team:

- addresses a significant regulatory issues in a safety-focused and timely manner;¹
- is formed and chartered at the discretion of an NRC manager (the decisionmaker);
- includes executives, managers, legal staff, and subject matter experts, as appropriate;

¹ Care would be required to ensure that these groups comply with all applicable Federal laws, including, as appropriate the Federal Advisory Committee Act, the Government in the Sunshine Act, and applicable ethics statutes and Executive orders. The specific applicable statutes and regulations would depend on the purpose and membership of each group.

- is not constrained by current practices or precedent;
- reports the majority view as well as any differing expert views, to provide the decisionmaker with the benefits of all available insights; and
- empowers the decisionmaker to decide the extent to which recommendations will be implemented, with the ultimate authority to determine the agency's course of action.

(2) Attributes Unique to Each Organizational Tool

a. Expert Panel

The agency currently uses expert panels but has not formed them for the express purpose of reviewing the safety aspects of new technologies. As part of its recommended licensing strategy, the staff would use expert panels to address regulatory matters for future technologies (e.g., the next reactor technology) and major licensing actions. Expert panels could be leveraged to provide recommendations in areas like the application of agencywide revised licensing guidance to identify the critical aspects of a new technology and could provide advice on the development of technology-specific licensing review guidance. The panels would provide broad expertise, diverse backgrounds, different viewpoints, external awareness, and a wide range of knowledge. Depending on the issue, the panel might include NRC experts (e.g., members of the Senior Level Service, agency executives), external experts (e.g., industry, academia, government), and nongovernmental organizations. The panel would be guided by the agencywide licensing framework for safety-focused and risk-informed reviews.

An example of an ongoing expert panel is the collaborative work between the NRC and the Electric Power Research Institute in a number of areas, including the fire events database. An example of a regulatory matter that may require an expert panel is developing the design-specific review guidance for a new reactor technology.

b. Guiding Coalition

A guiding coalition would operate much like an expert panel, except with only NRC experts. A guiding coalition would be similar to the current NRC practice of using steering committees, except the guiding coalition would act within the agencywide licensing framework and would not be constrained by current practices.

A guiding coalition can be stood up for any regulatory matter currently being addressed by the Commission that is challenged by our current regulatory framework. Ideally, a guiding coalition should address the appropriate scope and depth of the licensing review for applications associated with new technology or regulatory matters affecting more than one office or region (e.g., use of Big Data in licensing or oversight). The guiding coalition is intended to benefit the agency's efforts on a specific issue by providing senior management sponsorship, broad agency leadership, diverse expertise, extensive knowledge of NRC guidance and regulations, and an integrated view of NRC programs.

An example of a current regulatory matter that may require a guiding coalition is the use of Big Data to support a more dynamic oversight framework—one that could potentially adjust inspection focus or frequency based on real-time trends of equipment and licensee

performance. Another example is determining the appropriate scope and depth of review when the agency receives a major application associated with new technology. A further example is determining plant-specific design-and licensing-basis considerations for operating reactor matters, particularly when the plant was not licensed under the general design criteria in Appendix A, “General Design Criteria for Nuclear Power Plants,” to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, “Domestic Licensing of Production and Utilization Facilities.”

c. Tiger Teams

The tiger team approach aims to empower a small group of people to develop innovative solutions for complex problems (e.g., existing or new technologies) in a specific timeframe. The agency would charter the group to look at alternative resolutions without the constraints of existing processes and with a focus on safety as well as timeliness; enable the group to change, enhance, or eliminate current processes; and arm the team with needed resources (e.g., legal, financial, technical, and regulatory expertise) to arrive at a regulatory answer efficiently.

A tiger team can be stood up for any regulatory matter. Ideally, a tiger team should be used to address pressing regulatory matters challenging the current regulatory framework and would benefit from adaptive, flexible solutions (e.g., licensing of a digital instrumentation and control system). The tiger team is intended to enhance the agency’s efforts on a specific issue by providing focused leadership, a forum for innovative and adaptive solutions, and a framework to arrive at a regulatory answer efficiently.

Within the current framework of the agency’s day-to-day operation, the use of tiger teams would increase the focus on emerging issues that challenge the agency’s current regulatory framework and identify alternative or adaptive solutions for making decisions promptly. A tiger team would also develop solutions (or even implement the solutions) for ongoing challenging reviews or other issues.

B. Preparing the Agency for New Technology

Agency processes exist to forecast NRC work through strategic planning, budgeting, and strategic workforce planning. The Commission most recently considered forecasting work, environmental scanning, and assessing key trends and drivers in reviewing the recommendations in SECY-15-0015, “Project Aim 2929 Commission Report and Recommendations,” issued February 2015, and approving the agency Strategic Plan in early 2018. In addition, the agency has developed a process for systematically assessing new technologies and their potential regulatory, safety, and security impacts on NRC programs, which the Commission approved in COMSECY 16-0021, “Recommendations Regarding the Agency’s Long-Term Research Program,” issued October 2016. This forward-looking program helps to support the NRC’s anticipatory research program and ensures that the agency has the tools, information, and expertise required to accomplish its safety and security mission consistent with SRM-COMSECY-96-066, “Staff Requirements—COMSECY-96-066—Research (DSI 22),” dated March 28, 1997. As part of the agency’s revised licensing strategy, the NRC will enhance the effectiveness of this forward-looking assessment.

The feedback to the transform team indicated that the agency should engage as early as practicable in the development of new technologies to facilitate a timely agency response. The goal of these interactions should be to remain in stride and on pace with developments of new technologies in the private and public sector and to assess their significance with respect to the NRC's regulatory programs, rather than waiting for industry to complete technology development before beginning significant NRC engagement, such as anticipatory or confirmatory research, guidance development or rulemaking. More proactive, forward-looking engagement will help to ensure that the NRC is prepared to regulate the potential use of the technology and not unnecessarily impede the implementation of new technologies. The challenge for the NRC will be to use its limited resources appropriately to support early engagement with new technologies alongside other important regulatory activities. In addition, the staff recognizes that, by adopting a more proactive approach, some resources may be spent on learning about and assessing technologies that may ultimately not be implemented, either because the technology fails to achieve its intended beneficial uses, or it is not proposed for use by licensees and applicants. As needed, the NRC should use expert panels, consisting of internal and external experts, to guide the agency's regulatory focus on new technologies, including research activities, guidance development, and policy and regulation updates. The Office of Nuclear Regulatory Research, in collaboration with the other program offices, would continue to lead this activity, report on it in the quarterly performance reports, and coordinate with the regulatory program offices through the feasibility studies process established in accordance with SRM-COMSECY-16-0021 as well as user need requests and research plans.