Summary of Ideas Submitted to the Transformation Team

The table below provides a high-level summary of ideas submitted to the Transformation Team. Ideas are organized according to overarching themes and subthemes. Broad themes are highlighted with applicable subthemes identified. High-level summaries of some specific feedback received are bulleted.

The Transformation Team received and evaluated over 700 individual ideas. The summary table below is intended to be representative of these ideas and does not necessarily reflect the specific, detailed content of each.

Systematic Expansion of Risk-Informed Decisionmaking	
• Expand the use of risk informed decisionmaking.	
Risk-Inform the Licensing Process	• Scale the scope and level of reviews according to risk significance. • Adopt a less compliance-based, more decision-based approach to regulating technology that focuses on building the safety case for the technology and communicating better about what is necessary to make a safety finding. • Increase the ability to accept uncertainty by: (1) leveraging U.S. Nuclear Regulatory Commission's (NRC's) inspection oversight and future licensee operational programs; or (2) providing conditional versus final approvals pending operational experience.
Incentives for Safety Improvements	• Provide licensee incentives to enact safety improvements. • Accept some uncertainty in review of safety improvements.
Systems or Integrated Approach to Risk	• Examine the system level impacts of not approving a safety enhancement. • Allow licensees and companies to take on more commercial risk while focusing NRC staff efforts on examining risk to public health and safety.
Application of Operating Experience	• Consider applying operating experience with new technologies from other industries or from abroad.
Leveraging Existing Reviews	• Consider leveraging reviews completed or information collected by other Federal agencies, third parties, other industries, and international efforts.
Additional Flexibility for Licensees To Make Facility Changes	
• Consider a process to grant licensees more flexibility to make nonsafety-significant changes without prior NRC approval. • Shift more responsibility to licensees to demonstrate a safety case. • Consider expanding the scope of the process in Title 10 of the *Code of Federal Regulations (*10 CFR) 50.59, "Changes, Tests and Experiments."	

Timely Resolutions to Challenges Associated with New Technology	
• Provide timely resolutions of regulatory challenges associated with new technologies and do not allow issues to linger.	
Organizational Tools to Facilitate Decisionmaking	• Establish panels or "tiger teams" that can operate outside the constraints of existing processes to arrive at a solution. • Establish or revise processes for effectively and efficiently resolving differing views. • Examine mechanisms to streamline the concurrence process.
Performance-Based Reviews	
• Increase use of performance-based approaches such that reviews can focus on meeting established performance criteria versus specific details of a system or methodology. • Adopt performance-based approaches similar to those successfully used by other U.S. or international regulators.	
Digital Instrumentation and Controls	• Consider a performance-based approach based on system behavior/higher-level criteria. • Decouple the clause-by-clause review approach associated with conformance to the Institute of Electrical and Electronics Engineers Standard 603, "IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations." • Consider using approaches adopted by other U.S. regulators in other industries.
Accident Tolerant Fuels	• Enhance flexibility to reduce regulatory burden associated with lead test assemblies.
Advanced Reactor Licensing	• Current work in advanced reactors is progressing towards increased regulatory flexibility and safety focus at a pace commensurate with industry development. Therefore, consider adopting technology-inclusive regulations as an optional alternative to current regulatory approaches so that current design development licensing activities are not impeded. • Consider a higher-level, "principled" approach. • Consider adding a performance–based 10 CFR 53

Incremental/Early Approvals	
• Adopt a process for reviewing a design or complex technical issue in stages (e.g., systems engineering or reviews of conceptual designs).[1] • Engage in new technology at an earlier developmental stage. • Increase use of conditional approvals for new technology, which would allow operating experience to be generated in low-risk settings before broader implementation.	
Transition to Accident Tolerant Fuels	• Allow for incremental changes based on post-irradiation surveillances.
Advanced Reactor Licensing	• Hold public meetings and provide more education to vendors. • Consider developing a more defined path for early design phase regulatory feedback.
Culture	
Advance Transformation as Agency Process	• Make transformation an ongoing process. • Consider both technical capabilities and a transformative mindset when making new hires. • Appoint an individual or create a specific organization to focus on transformation.
Vision and Communication	• Adopt a top-down approach to ensure proliferation of a transformational mindset.
Staffing Flexibilities	• Rotate staff and managers to other transformational organizations. • Rotate pertinent individuals from transformational organizations into the NRC.
Incentives for Advancing New Ideas	• Provide incentives for staff to be transformative.
Accountability and Expectations	• Hold staff and management responsible for supporting a transformative culture. • Ensure that staff has sufficient training on risk-informed decisionmaking, adequate protection, and the basis for NRC regulations.

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[1] A similar item is also listed under the "Risk-Inform the Licensing Process" subtheme.

Other	
Big Data	• Pilot the use of Big Data tools and expand the internal use of Big Data to allow for efficient access to information and to enhance decisionmaking. • Train staff on how to use Big Data tools. • Use Big Data tools to aid inspections.
New Materials and Manufacturing	• Develop guidance on NRC expectations for the data needed to demonstrate the safety of new materials to be used in power plant components.
Organizational Changes	• Streamline the NRC's organizational structure. • Reorganize the NRC's structure to integrate staff of different technical and administrative specialties. • Reorganize or merge regional organizations. • Consider additional matrixing of organizations and centers of expertise.
Fees	• Reduce fees for applicants seeking new technology. • Adopt a flat fee system. • For advanced reactors, apply a fixed (estimated) cost, fixed (core) team to projects to provide regulatory stability.
Reactor Oversight Process	• Focus inspections on the most risk-significant items. • Evaluate current finding thresholds and designations. • Reduce the documentation for low-significance findings.
Streamline Processes and Focus Efforts and Documentation	• Streamline National Environmental Policy Act reviews. • Streamline the rulemaking process. • Periodically review or update regulations. • Streamline licensing reviews by evaluating areas such as the Advisory Committee on Reactor Safeguards review process, the request for additional information process, the use of templates and work process tools, the use of audits, and the necessity of frequent public meetings on minor topics. • Create an expedited exemption process for NRC regulations that do not apply to new technologies.