Idea Harvesting, Screening, Prioritization, and Dispositioning Process

Summary

The Transformation Team gathered techniques, ideas, and methodologies (referred to collectively here as "ideas") from internal and external sources and analyzed them to determine whether they were within the scope of the team's task. The team combined those ideas that were within the task's scope according to themes and further evaluated them against prioritization guidelines. This enclosure describes the process for harvesting, screening, prioritization, and dispositioning ideas.

Process

1. The Transformation Team recorded ideas communicated to it in an idea-tracking spreadsheet. To facilitate internal information sharing, the team also used meeting summaries to document additional details on ideas, comments, and suggestions received during meetings.
2. Each idea in the idea tracking spreadsheet was initially sorted based on initiative area (i.e., advanced reactors, accident tolerant fuels, advanced materials, "Big Data", culture, digital instrumentation and controls, crosscutting, and other) to ensure routing of ideas to the pertinent transformation subteam assigned to each initiative area.
3. The team identified and developed initial themes for screening and prioritizing ideas to help decide which ideas to advance. The themes were informed by the tasking memorandum and a review of the ideas submitted to the Transformation Team.
4. Each idea was prioritized in accordance with the prioritization guidelines to facilitate decisions as to which ideas to advance. The prioritization guidelines leveraged Project Aim 2020 approaches, but specific prioritization criteria and weightings were changed to reflect the Transformation Team's task. The guidelines are described on the following pages.
5. Each week, the Transformation Team discussed whether new ideas submitted were of high merit based on the screening and prioritization criteria, the number of ideas received under each theme, and the benefits and drawbacks of each idea including whether the idea aligned with the team's task related to new technologies. In this manner, the priority of the ideas received and the number of ideas related to a certain theme formed the basis of the team's decisions on which ideas to advance.
6. After the Transformation Team had received most of the ideas, it further refined the themes and reviewed the overall scoring to ensure consistency. Although many of the ideas are relevant to more than one theme, the team assigned each idea to the theme deemed most pertinent.
7. Some ideas scored high according to the criteria but were not consistent with the tasking memo's focus on new technologies or were too complex to be evaluated in the timeframe of the team's activities. These ideas formed the basis of the potential followup activities included in Enclosure 6.
8. This Commission paper has incorporated portions of 262 of the 846 total ideas received. Ideas that were not incorporated into recommendations or mentioned elsewhere in this paper are being transmitted directly to appropriate offices or to the U.S. Nuclear Regulatory Commission's (NRC's) Innovation Forum for further evaluation and potential future action.

Guidelines for Screening and Prioritizing Transformational Ideas

Purpose:

To ensure all ideas are considered and prioritized using a systematic and unbiased approach.

Background:

This prioritization methodology leverages the Project Aim approach which was briefed to the Commission and the NRC Senior Leadership Team. However, specific criteria and weightings have been modified to reflect the Transformation Team tasking to harvest innovation techniques, ideas, and methodologies to successfully implement transformation, including strategies to enhance and sustain a transformative organizational culture; to develop and recommend specific area(s) to initiate transformative change within NRC; to develop a strategy to promote the success of the specific area(s) recommended for transformation; and to develop a Commission paper that describes the merits of transformation.

Screening Criteria:

An initial screening of ideas is performed to ensure that each idea is within the scope of the Transformation Team tasking. For an idea to be screened-in, the answer to the following question must be yes.

Is the idea transformative rather than innovative?[1]

All ideas that do not meet the initial screening criteria will be routed to the appropriate agency process or organization (e.g., Innovation Forum, program office).

Prioritization Criteria:

All ideas that pass initial screening are prioritized according the criteria below.[2,3]

Consistency with Mission	5 (high) – 1 (low)
Consistency with Principles of Good Regulation	5 (high) – 1 (low)
Degree of Transformation	5 (high) – 1 (low)
Impact	10 (high) – 1 (low)
Complexity	1 (high) – 5 (low)
Uncertainty	1 (high) – 5 (low)
Timing	5 (high) – 1 (low)

1 Both the innovative and transformative initiatives are complementary and they both drive to the same goal of enhancing the NRC's effectiveness, efficiency, and agility. Innovative ideas are ideas that if implemented would incrementally improve regulatory efficiency and effectiveness through new or modified ways of conducting existing work. Transformative ideas are ideas that if implemented would fundamentally change how NRC regulates in certain areas to allow enhanced agility and an ability to effectively and efficiently regulate new and evolving technologies.

2 Similar ideas may be binned and assigned the same prioritization.

3 Ideas that achieve high scores based upon the prioritization criteria will then be evaluated for potential legal issues, including eliminating ideas that would require legislative action or rulemaking by another federal agency prior to implementation.

Guidance:

1. Consistency with Mission – This criterion refers to how well the transformative strategy continues to ensure the NRC mission to license and regulate the Nation's civilian use of radioactive materials to provide reasonable assurance of adequate protection of public health and safety and to promote the common defense and security and to protect the environment. A rating of 5 (high) would apply to a strategy that would enhance NRC's ability to meet its mission. A moderate rating of 3 would apply to a strategy that would maintain NRC's ability to meet its mission. The lowest rating (1) would apply to a strategy that may hinder NRC's ability to meet its mission.

2. Consistency with NRC Principles of Good Regulation – This criterion refers to how well the transformative strategy aligns with the NRC Principles of Good Regulation (i.e., independence, openness, efficiency, clarity, and reliability) and the NRC Organizational Values (i.e., integrity, service, openness, commitment, cooperation, excellence, and respect). A rating of 5 (high) would apply to a strategy that would significantly enhance the NRC's ability to regulate in a landscape of rapidly evolving technologies in a manner that also increases our efficiency, reliability, clarity, independence, and openness. A moderate rating of 3 would apply to a strategy that would increase NRC's ability to regulate in a landscape of rapidly evolving technologies, but in a manner that would maintain the current level of efficiency, reliability, clarity, independence, and openness. The lowest rating (1) would apply to a strategy that would increase NRC's ability to regulate in a landscape of rapidly evolving technologies, but in a manner that decreases the NRC's current level of efficiency, reliability, clarity, independence, and openness.

3. Degree of Transformation – This criterion pertains to the degree to which the strategy would fundamentally transform the NRC regulatory framework. A strategy with a high degree of transformation would result in a significant departure in the way NRC regulates. The proposed strategy can support a single process or technology (i.e., advanced reactors) or affect all areas within NRC regulatory purview (i.e., agencywide strategies). A rating of 5 would mean that the transformative strategy would result in a significantly different regulatory approach that does not rely on existing regulatory infrastructure. A rating of 3 would mean the strategy would result in a significantly different regulatory approach that relies on existing regulatory infrastructure to a moderate degree. A rating of 1 would mean the strategy would result in a significantly different regulatory approach but would rely heavily on the current regulatory infrastructure.

4. Impact – This criterion pertains to the depth and breadth of the transformative strategy's impact on the agency's regulatory framework and organizational culture. The rating for this criteria is double weighted, with a range of 10 to 1 rather than 5 to 1, given the high level of alignment of this criteria with the transformation team tasking. A rating of 10 (high) would mean that the strategy would cause agencywide changes to the regulatory framework and organizational culture leading to NRC staff capability to make safety-focused and timely decision-making in a landscape of rapidly evolving technologies. A moderate rating of 5 would be assigned to a strategy that would result in changes to a specific process, procedure, or technical area, but has the potential to encourage agencywide organizational culture change. A rating of 1 would be assigned to a transformational strategy that applies only to a narrowly defined process or procedure and would have a limited impact on changing agencywide organizational culture.

5. Complexity – This criterion compares the benefits of implementing the transformative strategy to maintaining the status quo. While a proposed strategy may be transformative, if overly complex, it may result in an equivalent or more burdensome regulatory framework which requires substantial resources to implement and maintain. Note that the point values are inverted for this criterion with a highly complex strategy rated as (1) and a low complexity strategy rated as (5). A low complexity strategy (5) would be one that would result in a regulatory infrastructure that requires minimal resources to implement and maintain. A high complexity (1) strategy would result in a regulatory infrastructure that requires significant resources to implement and maintain.

6. Uncertainty – This criterion pertains to the degree of unknowns associated with implementation or outcome of the transformative strategy. Like complexity, the point values are inverted with a highly uncertain strategy rated as (1) and a low uncertainty suggestion rated as (5). A strategy with low uncertainty (5) would have a high likelihood of success based on results of prior small-scale implementation at the NRC or external use of the transformative strategy. A high uncertainty (1) strategy would have significant questions regarding implementation strategies or potential outcomes. Any strategy with high uncertainty proposed for Commission consideration would include a risk mitigation strategy, including indicators to monitor for early warning of problems with implementation and other measures that would be taken to maximize the likelihood of successful implementation.

7. Timing – This criterion assesses the degree to which the strategy can be implemented on a timeframe appropriate for technology deployment. A strategy that can significantly accelerate regulatory decision-making allowing for a regulatory decision before proposed technology deployment should be rated (5). A strategy that would modestly accelerate regulatory decision-making metrics should be rated (3). A strategy with the potential to increase the time to a regulatory decision should be rated (1). Timing will also be used to bin strategies with immediate, short-term, and long-term strategies being those that can be implemented in less than 1 year, within 1 to 2 years, and more than 2 years, respectively.