

February 25, 2021

Project No. 99902069

Dr. Kevin Coyne
Acting Director, Division of Rulemaking, Environmental, and Financial Support
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Industry's Concerns about NRC Proposed Approaches to Part 53, and Alternative Discussion Draft for the NRC's Rulemaking on, Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors (RIN-3150-AK31; NRC-2019-0062)

References: Letter, NEI (Marcus Nichol) to NRC (Dr. Kevin Coyne), "Industry's Concerns about NRC Proposed Approaches to Part 53, and Alternative Discussion Draft for the NRC's Rulemaking on, Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors (RIN-3150-AK31; NRC-2019-0062)," February 11, 2021

In the referenced letter, industry concerns regarding the NRC staff's approach to Part 53 rulemaking were provided on behalf of the nuclear industry via the Nuclear Energy Institute (NEI). The NEI letter expressed concerns regarding the perceived staff reluctance to consider stakeholder input provided by NEI and other members of the industry. Kairos Power agrees with and supports the concerns expressed in the NEI letter and helped develop the alternatives expressed therein. Our observations are that while NRC staff are soliciting stakeholder feedback as part of scheduled public meetings, a consideration and reflection of that feedback to date is not apparent in the draft rulemaking effort. The NRC staff's briefing to the ACRS on this subject suggests that the staff does not intend to substantively make any adjustments. This may be as a result of the schedule pressures for this effort. A Part 53 rule that incorporates industry comments would lead to a more useful regulatory framework that would be adopted and utilized by applicants for advanced reactor licenses. With that in mind, a pause in the process may be useful to focus on obtaining closer alignment.

Kairos Power would like to specifically reiterate support for the industry positions provided in Attachment 2 of the NEI letter regarding ALARA, the Facility Safety Program concept, and the treatment of uncertainties. Additionally, Attachment 2 of the NEI letter identified several areas where industry members have diverse perspectives. Kairos Power provides the following perspectives on those areas:

- **Quantitative Health Objectives (QHOs)** – Kairos Power believes that it is imperative to maintain the long precedent of addressing QHOs as a matter of Safety Goal Policy and not include them within the proposed rule. This preserves the original intent of these objectives supporting safety goals and not regulatory limits. The risks of inclusion of QHOs in the rules was discussed in Attachment 2 of the NEI letter and we believe the consequences stated therein outweigh any benefits.
- **Quantitative Frequencies** – The draft language for 53.2(a)(1) in attachment 1 of the reference letter includes options to either identify qualitative frequency ("not expected to occur in the life of a nuclear power plant") or quantitative frequency ("greater than once in 10,000 years"). Kairos

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Power believes that the discussion of frequency in the rule should remain qualitative while leaving the details of quantitative frequency targets to future guidance. While detailed frequency calculations against goals to satisfy a qualitative frequency (“not expected to occur”) are possible, the complexity of the models, data, expert judgement, and quantification makes it difficult for those calculations to be used as a legal compliance tool.

- **Probabilistic Risk Assessments** – Kairos Power recognizes the value of including risk insights in a power reactor license application (as currently required under Part 52) and supports continuation of this expectation in Part 53. While risk insights from a PRA should appropriately supplement and further confirm important aspects of the safety case for a reactor design, Kairos Power does not believe that PRA results should be required as the sole basis for the identification of licensing basis events nor the safety classification of SSCs. The consideration of other sources of risk insights accomplishes the industry and regulatory goal of risk informing the safety case of advanced reactors without the burden of establishing the PRA as a legal compliance tool. This is consistent with how Kairos Power’s approach to risk-informed and performance-based licensing basis development discussed in KP-TR-009-NP.

Kairos Power sincerely appreciates the opportunity to provide input for the staff’s consideration. If you have any questions or need any additional information, please contact me at hastings@kairospower.com or (704) 650-1700; or Darrell Gardner at gardner@kairospower.com or (704)-769-1226.

Sincerely,

A handwritten signature in dark ink, appearing to read "Darrell Gardner". The signature is fluid and cursive, with a small mark at the end that looks like a stylized "A" or "G".

Peter Hastings, PE
Vice President, Regulatory Affairs and Quality

xc (w/enclosure):

Benjamin Beasley, Chief, Advanced Reactor Licensing Branch
Stewart Magruder, Project Manager, Advanced Reactor and Licensing Branch