

March 13, 2021

Mr. John Tappert
Director, Division of Rulemaking, Environmental, and Financial Support
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

RE: Risk-Informed, Technology-Inclusive Regulatory Framework for
Advanced Reactors (Docket ID NRC-2019-0062)

Dear Mr. Tappert:

We are writing to comment on the NRC's efforts to promulgate Part 53, a rulemaking to provide a new licensing pathway for advanced reactors. We have previously served the NRC as a Chairman and Commissioner and have been advisers to the Licensing Modernization Project ("LMP"), which resulted in the issuance of NEI 18-04, Revision 1. This guidance has been endorsed by the NRC in RG-1.233

The Nuclear Energy Innovation and Management Act ("NEIMA") charged the NRC to develop and implement a technology-inclusive, risk-informed, and performance-based regulatory framework for advanced reactors. We view this rulemaking as one of the most significant regulatory activities now before the Commission. Advanced reactors have the potential to provide enhanced safety and security, improved economics, and operational flexibility. Given the importance of nuclear power as part of our response to climate change, it is singularly important to establish a licensing approach that provides efficient and effective licensing processes so that their promise can be realized.

We support the application of the LMP as an essential ingredient of Part 53. While no doubt the details of the staff's proposed language for portions of the rule can be refined, we endorse the staff's efforts to embody the LMP approach in the text of the rule. The LMP reflects the thoughtful effort of a wide variety of experienced and knowledgeable nuclear professionals to define a modern licensing approach and serves to meet the direction that Congress provided in NEIMA.

While we have no objection to the consideration of alternatives to the LMP, we are not aware of any concrete alternative that serves to provide the necessary guidance and clarity.

We know there is concern in some quarters that the proposed rule language would include elements that are not aspects of the current rules and thereby might result in licensing complications. But any serious change in approach will create uncertainty in its early years of application and we have confidence that the Commission can assure that the new rule is implemented appropriately. For example, PRAs are an important tool that have been refined and improved over the years and it is long since overdue that the important role they provide in understanding risk to be embodied in regulation as the foundation for the application of a risk-informed approach. The ASME/ANS standards for a PRA contain guidance on screening accident initiators and sequences, which provide the means to streamline a PRA and simplify it for designs for which a full-scale PRA is burdensome. And, of course, Parts 50 and 52 provide an alternative for those who choose to forego Part 53. We do note, however, that Part 52 does require a PRA before fuel loading and, we understand, the NRC staff is working on adding a similar requirement to Part 50.

While full engagement with stakeholders should continue, we are very encouraged by the approach that the staff is taking to Part 53.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "George Apostolakis".

George Apostolakis
(240) 731-3245
apostola@mit.edu

A handwritten signature in blue ink, appearing to read "Richard A. Meserve".

Richard A. Meserve
(703) 533-0775
rmeserve@carnegiescience.edu