

**U.S. Nuclear Regulatory Commission
Chairman Christopher T. Hanson
Remarks for Fifth Symposium on US-Japan Nuclear Energy Research Cooperation
November 23, 2021**

Introduction

Good evening, and good morning to those tuning in from Japan. It's great to be here with you in person this year. I want to thank the Japan Atomic Energy Agency and the U.S. Department of Energy for organizing this important event on U.S.-Japan bilateral cooperation in nuclear energy research.

I appreciate the opportunity to speak to you about the NRC's efforts to prepare for advanced reactors. As the environment for deploying advanced nuclear continues to grow stronger, we at the NRC are focused on readiness to license and regulate these new technologies safely and efficiently.

Before I begin, I want to first acknowledge and thank the Japanese Government and industry for their continued efforts to engage with the global community to support safe and secure nuclear now and in the future. Two weeks ago in Vienna, I participated in the IAEA's special Fukushima Conference and led a panel on emergency planning.

Japan's ongoing efforts to share lessons learned and insights from this event are more important than ever as the world increasingly looks at nuclear for its carbon-free energy needs. The safe operation of existing facilities and public confidence in nuclear are crucial for progress with advanced reactor initiatives.

It is my hope that our two countries can enhance their cooperation to help ensure safe and secure nuclear globally, especially with more countries around the world looking to pursue the nuclear energy option.

Advanced Reactors

Now let me turn to advanced reactor activities at the NRC. It is an active area at the agency as the workload continues to increase on multiple fronts. Current work includes on-going reactor license application reviews, pre-application engagements, and regulatory infrastructure development.

We are currently reviewing two license applications: Oklo's 4-megawatt heat pipe reactor planned for the Idaho National Laboratory site and Kairos Power's 35-megawatt pebble bed fluoride salt cooled, high temperature test reactor planned for a site in Oak Ridge, Tennessee.

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We continue to support key national priorities such as the Department of Energy's Advanced Reactor Demonstration Program and actively engage with the ARDP awardees, X-energy and TerraPower, and other prospective applicants. The staff has been reviewing white papers and topical reports to help support regulatory predictability by resolving technical and licensing issues for future reactor applications.

To support these first-of-a-kind advanced reactor reviews, the staff is using a "core team" concept, empowering a small team of experts to focus the review on design and operational aspects of greatest safety significance to enable timely, efficient, and effective reviews.

In parallel with ongoing licensing and pre-application activities, we are focused on establishing a new technology-inclusive regulatory framework for new reactor applications.

Central to this effort is the development of a new part of our regulations—Part 53—that is clear, stable, and predictable, as well as flexible to accommodate the wide range of reactor designs within the timeframe mandated by the United States Congress. This is a unique challenge, and we are taking a novel approach to involving our stakeholders and the public by intermittently releasing preliminary rule language, conducting robust public outreach and dialogue, and providing for open discussion of the potential rule language.

The process is leading to a wide range of comments expressing diverse, and sometimes competing views. But I am confident that consideration of these different perspectives will ultimately produce an optimal rule.

We are also considering alternative regulatory frameworks for emergency preparedness and physical security for advanced designs with risk profiles that could benefit from more performance-based, risk-informed, consequence-based requirements.

We are working with our stakeholders and the public to develop rulemaking and guidance in other important policy and technical areas, such as an advanced reactor generic environmental impact statement, fuel qualification, transportation and storage, reactor siting, and operator licensing and staffing, to name a few.

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Technical Readiness to License and Regulate New and Advanced Reactors

Finally, technical readiness is vital to ensuring the NRC will not be an unnecessary impediment to licensing of advanced reactors.

We are continuing to recruit and hire a diverse team to build a strong workforce. We are making investments to ensure that our workforce has the skills needed to execute our mission through training and developmental opportunities. And we are leveraging the Nuclear Regulator Apprenticeship Network to recruit and hire a new generation of nuclear safety leaders.

We are also strengthening our readiness through research and international cooperation. The staff recently partnered with national labs and held widely attended public workshops to demonstrate the full plant source term calculations using our simulation codes for three advanced reactor designs.

Applicants demonstrating their safety case will be key to effective technical reviews, and underlying assumptions and computer models should be validated with real-world data whenever possible. To this end, our continuous engagement with designers, national labs, and the international community on research and testing activities is critical. I believe cooperation with Japan in this regard will be very valuable, the United States has much to learn from Japan's non-light water reactor operating experience.

Finally, we continue to have mutually beneficial engagements with the international community to inform our regulatory framework development and to address the challenges of licensing the reactor designs of the future. This summer, we successfully issued our first joint reports with the Canadian Nuclear Safety Commission under our Memorandum of Cooperation.

Conclusion

In closing, the NRC is continuing to make significant progress to achieve advanced reactor readiness while engaging with the near-term designers and applicants.

I firmly believe the NRC is charting the right path to be ready to review advanced reactor applications. I acknowledge there are challenges, but the agency is executing the right strategies to ensure its regulatory readiness.

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Finally, international cooperation including partnerships with countries like Japan that have mature nuclear programs and diverse experience will be increasingly important to ensure safe and secure nuclear power globally as more countries elect nuclear to address energy and environment challenges going forward.

With that, thank you very much for the opportunity to address you today.