

Chairman Hanson Opening Remarks
U.S.-European Small Modular Reactor Public Private Program Working Session
May 27, 2021

Introduction

Good morning and good afternoon, depending on where in the world you are. It is my pleasure to join you today to share my insights during this Working Session. I want to extend my thanks to the U.S. Department of Commerce for organizing this event and for inviting me to participate, and to those taking the time to listen. As activities associated with small modular and advanced reactors continue to increase, it is important that the NRC maintain an open dialogue with all interested stakeholders, including reactor designers, operators, financiers, and the NRC's international regulatory counterparts.

As some of you may know, I have been in the NRC Chairman role for just over four months, all during the public health emergency, so my international activities have been limited. I have met virtually with several of my international regulatory counterparts, and I am hopeful that I will be able to meet many of you face-to-face in Vienna during the September IAEA General Conference or during other international events, as things open up again.

In the short time I have today, I want to make a few remarks about the status of NRC's work on small modular reactors and advanced reactors and highlight the importance of international cooperation.

New Reactor Licensing Activities

First, let me emphasize that the NRC has been reviewing new reactor designs for quite some time. In recent years, there have been several new and unique reactor designs submitted for review. The NRC categorizes these designs as either light-water small modular reactors (or SMRs) or non-light-water-reactor designs (known as advanced reactors). Both types of designs fall under the SMR Public Private Program umbrella.

With regard to light-water SMR designs, one SMR vendor, NuScale, has applied for an NRC design certification. The NRC staff completed its technical review of the NuScale design certification application in August of 2020, and the Commission approved the proposed NuScale design certification rule, which will be published for public comment in June 2021. The NRC staff is also currently engaging in pre-application activities for other SMR designs, including an upgraded version of the NuScale design, the GE-Hitachi BWRX-300, and the Holtec SMR-160.

With regard to non-light water reactor designs, in 2016, the NRC staff developed a vision and strategy to assure that the NRC is prepared to review potential applications of novel reactors effectively and efficiently. This remains one of our priorities. Since that time, the staff has made significant progress in advancing technology-inclusive, risk-informed, and performance-based licensing approaches for non-light-water reactors.

The staff has also made significant progress resolving long-standing policy issues and developing analytical codes to ensure the NRC has the tools to conduct independent confirmatory calculations.

The level of activity in licensing has increased over the past year for non-light-water reactor designs, and the increased interest is expected to continue to grow. Last year, Oklo Power

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LLC submitted a combined license application for its micro-reactor design, which was the first combined license application for a non-light-water reactor submitted to the NRC.

The NRC is also engaged in pre-application interactions with other non-light water reactor developers, including X-energy (pebble-bed high-temperature gas-cooled reactor); Kairos Power (pebble-fueled molten-fluoride-cooled reactor); Terrestrial Energy (molten salt reactor); and TerraPower (sodium-cooled fast reactor).

When I spoke at the U.S. Nuclear Industry Council-hosted Advanced Reactor Summit two months ago, I noted that the environment for, and the commitment to the deployment of advanced nuclear technologies has never been stronger. Federal, state, and international initiatives are spurring greater interest in leveraging these technologies to combat challenges such as climate change, the need for alternative sources of energy, and a lack of reliable power in remote areas.

I also noted that the NRC is an independent regulator, and while a license from us is a prerequisite for the safe deployment of new technologies, we are not a promoter of these or any energy technologies. The NRC safeguards its independence and under no circumstance will it compromise safety.

But, as I've said before, independence does not mean isolation. The NRC must not, and will not, be an impediment to innovation and longer-term deployment.

We will work collegially and professionally with scientists, international counterparts, industry, and public interest groups to build trust in the science and increase reliance on historical and evolving operational experience and sound technical bases. This is key to the safe use of nuclear energy in the future.

International Cooperation

And we are doing what we can to ensure deployment is safe in the U.S. and around the world. I am a strong proponent of international engagement, as were my predecessors at the NRC. In 2014, the Commission issued an International Policy Statement, which reinforced that international activities are integral to the NRC's mission and directly support U.S. foreign policy objectives.

In addition, to ensure the success of our critical domestic safety mission, international cooperation is vital in helping us learn from one another; ensures timely sharing of operating experience; and advances global nuclear safety, security, and nonproliferation.

The NRC is engaged in a wide range of bilateral and multilateral activities that enhance the safety and security of nuclear activities worldwide. We have bilateral agreements with over 45 regulatory counterparts, including every European Union country that has a nuclear power program and a few that do not. These agreements facilitate technical exchanges, regulatory information sharing, personnel exchanges, and regulatory assistance.

As an example of the success of NRC's international activities, allow me to briefly highlight the NRC's collaboration with our neighbors and colleagues at the Canadian Nuclear Safety Commission (or CNSC). The NRC and the CNSC have been working together on advanced reactor and SMR technical review approaches and pre-application activities under a

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memorandum of cooperation signed in 2019. The NRC and CNSC have met with several SMR and advanced reactor developers that have activities underway in both the United States and Canada and have approved work plans for cooperation in pre-application review activities on several designs.

Given the increased interest in new technologies, it is imperative that we build on existing strong partnerships that the NRC has with our counterparts in Europe and elsewhere around the world, to ensure continued high standards of nuclear energy safety. I believe that engagements such as this working session and the upcoming fall workshops allow all stakeholders to share valuable information regarding the status of their activities, which ensures all parties are better informed and operate more effectively.

In addition to our bilateral engagements, the NRC also participates in three key multilateral international working groups: the IAEA SMR Regulators' Forum, and two NEA Working Groups on the Regulation of New Reactors (WGRNR) and the Safety of Advanced Reactors (or WGSAR).

The SMR Regulators' Forum and the NEA working groups enable discussions among Member States and other stakeholders to share regulatory knowledge and experience associated with SMR and advanced reactor design reviews and to identify and address potential challenges. These forums enable regulators to work together to identify where new approaches may be needed in regulation, licensing, research, and other areas to safely and effectively regulate advanced technologies.

The forums have produced reports on topics such as fuel qualification, emergency planning, and how the principles of graded approach and defense-in-depth should be applied to new reactor designs. The forums provide opportunities to develop consistent regulatory approaches internationally.

The NRC plans to continue to engage in extensive international cooperation to share regulatory experience and better inform our regulatory responsibilities. I applaud the active participation of European regulatory bodies in groups such as the SMR Regulators' Forum and the Working Group on the Safety of Advanced Reactors, and I encourage continued collaboration on advanced reactor standards and regulatory approaches.

Conclusion

Unfortunately, my schedule does not allow me to participate in the entirety of the working session, but several NRC representatives will participate. I look forward to hearing feedback following the workshop and continuing to learn about the progress the SMR Public Private Program is making.

In addition, the NRC looks forward to building on its long-standing relationships with European regulatory colleagues as we continue to learn together and adapt our regulatory processes to address new technologies. And as I mentioned earlier, our work with our Canadian counterparts, coupled with the commitment by CNSC President Velshi, continues at an impressive pace.

Thank you again for inviting me to participate in today's discussion, and I wish you all productive discussions in this planning session.