

U.S. Nuclear Regulatory Commission
Chair Christopher T. Hanson
National Labor and Management Public Affairs Committee (LAMPAC)
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Thank you, Donnie, for that introduction. And thank you all for inviting me to speak with you today. Good morning. It's great to be here in a dynamic forum that brings together labor and management leaders with an interest in the future of the energy industry.

A common objective I know we all share is the safety and security of the nuclear fleet. Nuclear workers are at the front lines. They are the ones building and running our nuclear plants safely and making sure they last.

As many of you know, when I visit nuclear power plants around the country, not only do I meet with plant management, I also make it a point to meet with labor. I appreciate hearing directly from the people with hands-on knowledge of the facilities. It's important to me that both labor and management know they have a direct line of communication to me when needed.

Today I'd like to share the ways in which the Nuclear Regulatory Commission is preparing for the future. This topic is at the forefront of this year's Regulatory Information Conference, which kicks off tomorrow.

As Yogi Berra reportedly said, "Predictions are hard, especially about the future." But at the NRC, we are actively trying to anticipate and prepare for a range of possible futures. We are doing this by developing the tools necessary to adapt to whatever comes our way.

New and Advanced Reactor Licensing

One of those possible futures involves new and advanced reactor licensing. I know this is of particular interest to you and I've made it the focus of my remarks today.

On that front, we've already made significant headway: the final rule certifying the 50-megawatt electric NuScale small modular reactor design went into effect on February 21, 2023. It's now available for reference in new reactor applications, giving applicants the option to design their plants with anywhere from one to 12 modules, for a total maximum capacity of 600

megawatts electric. And earlier this year, NuScale applied for a design approval of the 77-megawatt electric version of that same plant, with an option to build up to 6 modules. The application is with the staff for its acceptance review and docketing decision.

With regard to advanced designs, the NRC staff is well on its way to completing its review of Kairos's construction permit application for a fluoride-salt cooled high-temperature test reactor. The staff reported in a Commission meeting last month that it is ahead of its 21-month review schedule.

And in November last year, the NRC accepted Abilene Christian University's application for a permit to construct a molten-salt research reactor. The staff set an ambitious 18-month schedule and is already making great progress on that review.

The staff's coordination with our domestic and international counterparts is instrumental in meeting review schedules while meeting the agency's safety, security, and environmental mission. We work closely with the Department of Energy and other branches of the U.S. government to share data and stay on top of the latest research.

In the international arena, our collaboration with the Canadian Nuclear Safety Commission on small modular and advanced reactors is yielding good results. Since signing our memorandum of cooperation in 2019, we've issued six joint reports on a range of technical topics. These include:

- X-energy's reactor pressure vessel construction code assessment for the Xe-100 small modular reactor design;
- AND
- the methodology for developing a postulated initiating events list for Terrestrial Energy's Integral Molten Salt Reactor

In addition, we have three ongoing projects related to the GE Hitachi BWRX-300, given steps both Ontario Power Group and Tennessee Valley Authority are taking toward deploying this SMR design.

One of these projects leverages the NRC staff's experience with the GE Hitachi's ESBWR design certification and previously approved topical reports on boiling water reactor fuel verification and validation.

We are looking to expand the three collaboration to include the UK Office for Nuclear Regulation, which has an application for a Generic Design Assessment from GE Hitachi. We may also include assignees from the Polish regulator in the process too, given the interest by Synthos Green Energy in building SMRs in that country.

By combining efforts with our international counterparts, we're expanding the depth of our knowledge and technical expertise. Not to mention, we are reducing duplication of effort. We expect this could result in cutting staff review time by 25%.

Dovetailing with our work on new and advanced reactor applications is our work on advanced fuel technologies for the existing fleet. Specifically, accident tolerant fuel, which holds the promise of increased safety and improved economics. The staff continues to closely coordinate with our domestic and international partners to exchange information and support research in this important area.

Coordination also includes agency engagement with the nuclear industry, so we know what to expect and when to expect it. Our review of the NuScale application highlighted the importance of pre-application engagement, which can include advance staff review of technical reports and early contact with the NRC's independent panel of reactor safety experts, the Advisory Committee on Reactor Safeguards, or ACRS.

Utilizing these open lines of communication, the staff is able to develop a common understanding of key design features and engage early with the ACRS on complex issues. In another process enhancement, the staff adopted lessons learned from past safety and environmental reviews to establish core and interdisciplinary review teams. These teams are specifically focused on the risk- and safety-significant aspects of these advanced reactor designs.

So, I hope you can see, we're ready to license new and advanced reactors using our current regulatory frameworks. Based on the staff's pre-application meetings with other new and advanced reactor developers, we expect to see additional applications filed over the next several years. With the right pre-application engagement and a high-quality submittal, I'm

confident the NRC staff can make a safety determination in a timely manner. This is the case regardless of the regulatory pathway an applicant chooses.

To enhance the efficiency of future licensing reviews, the staff recently prepared several rulemaking packages for the Commission's consideration. One of these proposed rules aligns the requirements in Parts 50 and 52 for any new or advanced reactor technologies, based on lessons learned from recent licensing reviews.

And just last week, we publicly released the staff's proposed framework, Part 53, to support licensing of a range of possible advanced reactor designs. The Commission is also considering emergency-planning and physical-security rulemaking packages for small modular and advanced reactors.

On top of all this, the Commission is deliberating how fusion fits into our current regulatory frameworks. The Department of Energy's announcement last December that Lawrence Livermore National Laboratory achieved fusion ignition was an exciting new development and a significant milestone for fusion energy research.

Fusion energy is seeing a lot of activity and progress. The staff prepared a paper for Commission consideration that proposes to license and regulate fusion energy systems using either our byproduct material framework, our utilization facility framework, or a hybrid approach that would combine the two.

Suffice it to say, the Commission has multiple options to address the big questions now facing us with the advent of advanced technologies. The five of us will conduct a thorough review of the staff's proposals and make the necessary policy decisions that will provide direction to our staff to move forward.

Workforce of the Future

To make any of this happen—to achieve our mission and prepare for the future—we depend on our workforce of dedicated professionals. Our employees have a strong commitment to our mission to protect public health and safety, to promote common defense and security, and to protect the environment. They truly are the backbone of the agency.

The NRC has experienced significant change in the past few years. Both in terms of how we accomplished our work during the pandemic and how our work has evolved with the

prospect of new designs and advanced reactors. Through it all, our workforce has shown an incredible willingness to learn, adopt new technologies, and embrace innovation to meet the mission.

The agency already benefits from a longstanding, deeply rooted culture of teamwork and collegiality. We're leveraging our collaborative instincts to complete the work we have before us and to prepare for the future.

A hiring initiative is now under way at the NRC to ensure we continue to have the employees we need, with the range of skill sets necessary to address our current and future work. We're providing opportunities for current employees to learn new skills through training and rotational assignments.

We're also ramping up our outreach to prospective employees. As I visit plants around the country, I'm including side trips to universities to encourage students in all engineering fields to consider public service as a career option. Since last year, we've already hired over 300 new employees and, of those, onboarded over 200.

I know both labor and management are acutely aware of the difficulty of recruitment and retention these days. I'm personally convinced that the NRC is not going to be able to hire our way out of the current situation.

We need to be able to rely on, and build on, our current in-house expertise. This means keeping an eye on retention and evolving our processes to be more efficient. We are going to have to develop new ways of working that will focus our reviews and confirmatory analyses on the most safety significant aspects of new and existing technologies. We've already made some progress in this area, and I think we can go farther still.

Conclusion

Today I've spoken about what we're already doing and what we can anticipate with new and advanced reactor licensing. There are certainly other possible futures that we might face that I didn't touch on in my limited time with you today. This includes the likelihood of an increase in power uprate requests and license renewal applications—which we also expect based on discussions we've had with our licensees.

We're ready for those, too. The bottom line is that, through teamwork and collaboration, we're already completing the work we have now, and we're making sure we have the tools in place to address the work of the future. Our current licensing frameworks are up to the task.

At the same time, we're taking a serious look at the ways—through rulemaking and otherwise—we can enhance our regulatory frameworks, while keeping our health, safety, environmental protection mission at the forefront.

Thank you again for inviting me to speak with you today. I wish you continued success in your collaboration at this year's meeting.