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Chair Christopher T. Hanson
(as prepared and not as presented)

Good morning and welcome everyone to the 36th annual Regulatory Information Conference.

Introduction

The first Regulatory Information Conference was held in 1989 at the Mayflower Hotel in downtown Washington, D.C. It was attended by fewer than 200 participants. It was seen as an opportunity for utility officials and NRC managers to discuss "technical issues and regulatory philosophy" in a non-confrontational environment.

Then, as today, our aim is to forge a better understanding between the NRC and external stakeholders, with the goals of maintaining safety and security and instilling public confidence.

Today we have over 1900 participants in person and another 1300 joining us online. To each of you, especially our international counterparts who have traveled from far and wide, a warm welcome. A big thank you to the RIC committee for their tireless efforts in putting together this year's event. Without you, none of this would be possible.

I would like to welcome back Commissioners Baran, Magwood, Merrifield, and Ostendorff. Welcome to each of you and thank you for the support and wisdom you've shared with me over the years.

In Antigone, the Greek playwright Sophocles said, "[I]t is best that [people] by nature should be wise in all things. But most [people] find they cannot reach that goal; and when this happens, it is good also to learn to listen to wise counselors." So, among my wise counselors, I'd like to thank Molly Marsh, Cinthya Roman, Jessie Quintero, Olivia Mikula, Tony Nakanishi, Mandy Mauer, Lisa Dimmick, Kathleen Blake, Patty Jimenez, Pam Buzdygon, and Ken Armstrong.

Before I begin, I want to acknowledge and honor our Ukrainian colleagues here today. Their country is in the midst of a terrible conflict many of us cannot even begin to fathom, and they have continued to endure relentless challenges to the safe and secure operation of the Zaporizhzhia power plant with a strength that many of us, me included, deeply admire. Thank you for joining us and I look forward to continuing to lend support in whatever way I can.

An optimistic perspective

Of late, I have been reflecting on the legacy of our agency. We are approaching the NRC's 50th anniversary, which presents an opportunity for us to look back while we look forward.

Twenty years ago, Chairman Nils Diaz said, "for the utilization of nuclear technology to advance to a new level of performance in the 21st century, nuclear regulation needs to be better, more predictable, more useable, more consistent across borders and more risk informed."

Well, that sounds familiar, doesn't it? When Chairman Diaz gave this speech, the agency was working on revisions to the light water reactor-centric Part 52 framework and evaluating continued operations from 40 to 60 years. Consider the present moment—the Commission just provided direction on the proposed technology-inclusive Part 53 framework for advanced reactors and is deeply engaged in evaluating subsequent license renewal, operation from 60 to 80 years.

The agency's work over the last 20 years has provided us with the substantial experience and wisdom we have today. I recognize the significant strides the agency has made over time. Strides that have put us in a fundamentally better place than we were 20 years ago.

As we speak, the NRC is laying the groundwork for things like technology-inclusive licensing, regulation of fusion energy, and microreactors. And I am optimistic that 20 years from now, a future Chair, perhaps at the 2044 RIC, will be lauding achievements that are built on the work we are doing today.

Last year I quoted Colin Powell, who said "optimism is a force multiplier"—I still believe that. Even more, optimism is a choice to move forward with the confidence that we can overcome the challenges of our day—the belief that we can leverage our history and apply the lessons we have learned to keep striving to build a better future. That is why today you are going to hear me talk about what we are actively doing to prepare for this future.

Now, I can't assign probabilities to a vast array of possible futures involving nuclear regulation. But even if 20 percent of the current planning and initial investment comes to fruition, the NRC and other regulators around the world will have more work to do than we have had in a while.

There was an article in the Washington Post over the weekend that pointed to potential huge increases in electricity needs driven by data centers and cleantech manufacturing. As much as a 50-percent increase in Virginia over the next 10 years and as much as 5 gigawatts in Geogia. Another example: Amazon Web Services just purchased a data center adjacent to the Susquehanna nuclear power plant; the first such campus with direct nuclear power access.

And we aren't just seeing major demands in power generation either—look at the advancement in medical technologies, including the emergence of "theranostics," which takes a personalized approach to treating cancer using both diagnostic and therapeutic nuclear medicine.

It's clear that we at the NRC will play a key role in meeting these, and other future needs. Not only do we need to instill confidence that we're up to the task, but we also need to prove it with our actions.

So, I will be speaking today about where I think we are and my vision for the future of the NRC. And by the time I'm done, I hope I have convinced you that confidence in the future is justified, and that optimism is the key to getting there.

Present Moment

I want to get into the body of this speech by recognizing the sustained, strong safety performance of the current operating fleet, on which the future of nuclear power depends. The credibility of the nuclear industry in the United States is linked to this remarkable record of performance, and I am focused on assuring that this gets the attention it deserves.

Even just 5 years ago, it appeared that the number of operating plants would continue to decline, with projected shutdowns and decommissioning becoming a regular part of the discussion. But the tide turned, and today we are holding at 94 operating reactors. And, for the first time, the NRC is evaluating a request to return a previously shutdown reactor to operation. Our licensees are exploring a range of new technologies in the areas of fuel and instrumentation and control along with periods of extended operation and power uprates.

Too often in this regulatory space we slip into the habit of "business as usual." But the energy sector is far from stagnant, and staying stagnant when there is change all around us does not serve the mission. We need to be ready for emerging needs and seek opportunities for process improvements. Our workload projections are only increasing, and efficiency will be critical.

Industry interest in extending the life of reactors from 60 to 80 years, or what we call "subsequent license renewal" or "SLR" has exceeded the NRC's planning. To be blunt, our track record to date on these reviews hasn't met the mark. Hours spent in reviewing license renewal applications should reflect the significant experience we have gained from initial license renewals—and they don't. At least not yet.

That is why the NRC is currently revising our approach. We are leveraging risk insights, prior safety and environmental conclusions, and standardized programs to streamline NRC and industry resources—focusing on the differences between the reviews of initial and subsequent terms, concentrating staff time on the most safety significant aspects of continued operations.

On the environmental side, the Commission is close to a decision on the final rulemaking package for the updated license renewal generic environmental impact statement. I am grateful to the NRC staff who did exceptional work on this and dedicated their time to make it happen quickly. Thank you.

All changes take a little time to take effect. But I expect to see streamlined reviews completed in less time and with fewer resources. This means substantially fewer staff hours when compared to recent reviews and within the NRC's 18-month review goals.

And while I'm encouraged by the management focus on SLR reviews and the changes the staff are making, I am challenging NRC leaders to go further and take the same approach to all our work.

With Congressional action and federal incentives, we are projecting an influx of new power uprate applications—muscles we haven't exercised in over a decade. I expect the staff to anticipate this work and be ahead of the curve to ensure we will be both effective and efficient.

Now, we have seen some success with the applications in front of us. Approval timelines for risk-informed programs at operating reactors have fallen dramatically. And more complex reviews for risk-informed classification of structures, systems, and components have held steady.

I am also pleased with staff's initiatives on more routine license amendments. Our metrics for license amendments were previously based on a standard flat timeframe—one year for the completion of review. In 2024, we are changing that metric based on actual experience. This will make our data more accurate by appropriately focusing resources and properly tracking our performance.

Reflexively doing things the way we have always done them is not going to work. I expect every leader in the NRC to look closely at the "why" of our policies, processes, and procedures and then develop more efficient and effective ways to accomplish our safety mission while making room for the increased scope of work.

In case folks hadn't noticed, new reactor regulation and licensing is ramping up. In the next two years alone, the agency is projecting applications for two combined licenses, one design certification, one standard design approval, one manufacturing license, three operating licenses and nine construction permits. That is a lot. We are preparing to meet challenges and novel issues head on.

As many of you have seen by now, last week the Commission issued the Staff Requirements Memorandum for the proposed Part 53 advanced reactor rule. First, I want to acknowledge the efforts of the NRC staff in developing this rule, which marks a major evolution in risk-informed regulation. This rulemaking process has been unique, and from the outset the agency recognized the need for transparency during its development. Never before have we engaged the public so early and so often.

I want to thank the stakeholders who took the time to review draft text on a variety of topics at various points of maturity, asked us hard questions, and provided constructive feedback. And finally, I want to thank my colleagues on the Commission for working closely together to develop clear direction back to staff. This collegial process resulted in an approach that I believe the entire Commission can stand behind.

The proposed rule puts probabilistic risk assessment and risk insights in a leading role, balancing flexibility and predictability while assuring the safety of the public. The rule will give plant designers and plant operators flexibility in determining how their nuclear power plant will meet safety criteria.

As I have said before, we are still in the middle of this process. This is only the proposed rule, which will be issued for public comment within six months. Further discussions and engagement will be necessary for a final rule that is effective and flexible, yet usable. For those stakeholders in the room and online, I look forward to continuing to get your feedback.

Now, Part 53 gets a lot of attention, but it is just one part the NRC's overall effort to address advanced reactor licensing. Late last year we issued the final Emergency Preparedness rule, which scales emergency planning. The agency is also updating siting guidance to account for the safety features of new reactor designs. The limited scope physical security rulemaking being considered by the Commission would provide advanced reactor applicants and licensees the flexibility for alternative approaches to security. I expect that very soon the Commission will issue a decision on the Advanced Reactor Generic Environmental Impact Statement—which will significantly streamline environmental reviews.

With all this emphasis on advanced reactor licensing, it is important to note that our current frameworks allow for licensing of advanced nuclear now. If I look back at the agency's history over the last 20 years, one of the things I'm most proud of is what and how we have learned. Let's start with Vogtle. We learned a lot. A lot about timely issuance of Combined Operating Licenses, a lot about evaluating design changes, a lot about focused construction oversight, and a lot about how to structure efficient reviews for Inspections, Tests, Analyses, and Acceptance Criteria.

We learned a lot from our work on NuScale—the first SMR design certification approved by the NRC. We learned about the importance of robust pre-application engagement in the form of white papers and technical reports and of hands-on project management and stable core team staffing within the agency.

We took all of that experience and applied it to the Kairos Hermes test reactor and then we learned some more. In December, we issued the construction permit for Hermes—the first non-light water reactor construction permit issued in the U.S. in 56 years. And we completed the safety and environmental reviews ahead of schedule and on-budget. We've got the Hermes 2 construction permit application under review right now on a 14-month schedule and all the reports are positive. I fully acknowledge it's sometimes hard to go first with applications, but with each review we are learning, and we grow more ready to take on the next.

I just mentioned the importance of robust pre-application engagement. Actual and prospective applicants understand this—since 2018, we completed nearly a hundred topical reports and white papers. We have 32 topical reports in house right now and expect dozens more in the next couple of years. It wasn't long ago when topical report reviews were averaging almost 24 months. But by applying lessons learned, recent data say we are currently around 15 months. I expect this trend to continue.

As I said in the mandatory hearing for the Hermes construction permit, the staff has set the bar high, and I am confident they will meet it and aim higher.

The opportunity to seek improvement extends into other areas as well. From my first days on the Commission, I have made it a priority to ensure that our efforts on the fuel cycle are as aggressive as they are on reactors. Indeed, so much of what we are doing in reactor space relies on all pieces of the fuel cycle seamlessly working together.

So, what are we doing? In December, NRC issued an amendment authorizing fuel fabrication with up to 8 wt.% U-235. This is the first fuel facility amendment authorizing production of accident tolerant fuel with increased enrichment. In the same month, staff approved a transportation package for unirradiated advanced reactor fuel. As many of you know, last year we

issued the license amendments necessary for Centrus to produce initial quantities of high-assay low enriched uranium, and we are currently reviewing a license amendment for enrichment up to 10 wt % U-235. We shouldn't leave behind any element of the fuel cycle when we apply our experience to make process improvements.

Given all of this ongoing work – the rulemakings, the license application reviews, the process improvements—the time is right to start preparing the agency for what I call "serial deployment" of microreactors and small modular reactors. We are likely to see applications that either have significant similarities, build on one another in an iterative manner, or even seek some form of joint review and approval. The agency has some of the tools in place now but there is more to do. We recognize this and have several important efforts underway.

First, the NRC has embarked on a new initiative focused on standardizing our reviews and giving credit for applicants who standardize their designs and licensing approaches and rely on prior NRC safety and environmental decisions. Second, earlier this year, I asked our General Counsel to recommend to the Commission options for improving the uncontested mandatory hearing process, seeking efficiencies where possible. Third, in a couple of weeks, NRC will be kicking off a joint project with the Idaho National Laboratory to look at how small and advanced reactor construction costs intersect with our codes and standards so we can right-size both to better account for the enhanced safety of many designs. And finally, NRC is also looking at design-centered approaches to conducting construction oversight to improve the efficiency of inspections.

In the context of serial deployment, I want to give a quick shout-out to everyone working on and contributing to the Fusion rulemaking. Around this time last year, the Commission voted to address fusion energy regulation through what we call a byproduct material framework, and we expect a proposed rule sometime this summer. This is just the beginning for fusion. But we are looking at key issues closely and are laying the groundwork now for success in the future.

All of the efforts that I've just spoken about are focused on appropriately balancing our regulatory footprint while staying grounded in our safety mission as we prepare for deployment of a range of technologies at scale.

The future

So far, I've given you my own version of a "state of the union." A snapshot of our present, and the foundation we are laying now to address both immediate and future needs. I call it a snapshot, because it doesn't even begin to cover all of what we are actually doing day in and day out at the NRC—proving both to ourselves and others that we can meet tomorrow's challenges.

So, turning now to that future we are preparing for. Where do I see the NRC in five, ten, or even 20 years? Well, let's start with the one thing I'm absolutely sure of: we will continue to fulfill our safety and security mission for both nuclear power and radioactive materials and instill public confidence worthy of a strong, independent and technically competent regulator.

Believe me, I would love to share my wish list. To get down in the weeds of how many factory-produced microreactors we'll license, or how many multi-unit SMR sites will be constructed, or how many fusion devices we'll see in operation in 2029 or 2034 or 2050.

But the future is uncertain. Think about all the things that have happened in the last five years that no one saw coming. Let's start with a resurgence of nuclear at the scale currently being contemplated; the growth of artificial intelligence; a request to restart a shutdown reactor. To say nothing of global events. The stochastic crystal ball has a finite radius. Indeed, there is much outside the NRC's direct control. So how do we build a future within our control?

There are four elements that I think are most important—trust, confidence, independence, and risk-informed thinking.

First, in multiple speeches to NRC staff I have discussed my vision for building an environment of high trust and high confidence. Because culture lasts. We are facing a lot of changes at this agency—technological, policy, demographic. We need leaders that staff can trust to navigate us through this period. And leaders need to trust that the staff will prioritize our health, safety, and security mission; will innovate in new ways; and will get the job done. And finally, staff need to trust each other; they need to see each other as essential in their roles to accomplishing the mission; and they need to know they can rely on each other as our workload grows.

Fostering an environment of high trust begins with the agency's leaders. I recently came across a remarkable speech by former Chairman Shirley Jackson. In it, she says:

> *"If leaders do not set an example of vision, hard work, commitment to mission, willingness to take responsibility, creative thinking, and scrupulous adherence to ethical standards, they cannot expect those who work for them to meet those tests."*

A high-trust environment is a two-way street. Leaders can build trust by setting an example of the environment that they wish to see in their organization. It isn't enough to describe a perfect culture and hope it will just appear—we need to listen, and we need to lead. We need to make sure that praise for our employees is public and generous, that corrections are constructive, that motivation is commonplace, and that trust is paramount.

Second, let's talk about confidence. As I said earlier, we are approaching our 50th anniversary here at the NRC. January 2025. And we have learned a lot over the last five decades. Most importantly, a lot about what is critical for safety and security. And that body of knowledge should give us confidence in our technical capabilities at all levels so that we can leverage our vast intellectual capital to make better, smarter, more efficient, and more durable regulatory decisions. As I frequently tell the NRC staff, we need to have confidence in our abilities and confidence in our ability to change.

So, while confidence in ourselves is important, we also need to build and preserve the confidence of those outside the agency. This starts with maintaining the trust of the public. If the public does not have confidence in our decisions, for whatever reason, then we will ultimately fail. Engaging the public substantively, routinely, and creatively is critical to our position as a trusted regulator.

Further, building external confidence in the agency with stakeholders is important for our credibility. Confidence that we can uphold our obligations to the public while also building clear,

reliable, and efficient regulatory pathways for not only the variety of technologies under development, but also the volumes at which those technologies may be deployed.

Third, independence—but not isolation. We are an independent agency. But, as I have said many times, we cannot ignore the significance of our role in the future and its impact on those around us, both domestically and internationally.

I spoke at the beginning of the speech about the domestic context, so what's the global one? At the Conference of the Parties 28 in Dubai in December, 22 world leaders, including the United States, signed a declaration to triple nuclear energy by 2050. This display of solidarity is an important reminder that the future we are talking about, is after all, a shared one.

But climate change isn't the only driver. Energy independence, national security, human health, and economic development are all on the table in my discussions around the world. The fact of the matter is that there is too much going on—financial investment, technological advancement, policy, geopolitics—for any one regulator to tackle alone. Now is the time for like- minded countries with shared values to work together to ensure safety and security and develop generic pathways that serve our unique contexts—the ongoing joint effort between the U.S., Canada, and the U.K. on advanced reactor reviews is just one example.

Finally, risk-informed thinking. Risk-informed thinking is part of our past and drives our present. But I want to drive the concept forward. Because, as I've noted many times in this speech, our agency continues to learn and grow over time as we build on our expertise. That means that risk-informing is constantly evolving based on the new information the agency receives. It isn't a static concept—we have risk-informed, are risk-informing now, and we will continue to risk-inform into the future.

It is our job to make sure that we have a culture with a questioning attitude, focused on safety—not on business as usual. As I have described in this speech, we are doing this in pockets throughout the agency. Indeed, there are bright spots everywhere. But I want to see a future where risk-informed thinking is baked into every single thing we do.

Conclusion

So, how do we achieve this vision? By building confidence and trust inside the agency; by cultivating and safeguarding confidence and trust outside the agency; by maintaining our independence while reaching out and bringing in information and perspectives necessary for improvement; and finally, by building on all of this to clearly and reliably apply risk insights to every aspect of our mission to better maintain safety and security and increase efficiency.

Chairman Allison MacFarlane gave a RIC speech almost exactly ten years ago today entitled "Continued Learning: The Best Defense against an Uncertain Future." That sums it up.

I started this speech talking about the state of the NRC 20 years ago—some things have stayed the same, many have changed. But what's clear? We have come a long way. And we have learned a lot. Therefore, we can have confidence in our ability to keep evolving to meet future challenges.

Every lesson we have learned, whether through success or failure, is valuable—and it is both a part of our legacy and the foundation of our future. President Truman said "An optimist is presented with a problem and sees an opportunity. A pessimist is presented with an opportunity and sees a problem."

We have a choice to make. To look at the future of the NRC, at nuclear regulation in this country, and at the international nuclear landscape with pessimism—or with optimism.

I choose optimism. I choose to see the future through a lens of opportunity. The people in this room have what it takes to create the future we hope for ourselves and our children. As the history of the NRC has demonstrated—we have risen to meet the challenges of many uncertain futures. I have every confidence that we will continue to do so.

Thank you.