

**U. S. Nuclear Regulatory Commission
Commissioner David A. Wright
ANS Remarks: Back to the Future: Leveraging Past Efforts to Prepare for the
Future – A Look at the NRC’s Efforts to Leverage Past Initiatives to Establish a
Risk-Informed Culture for Future Regulatory Decision Making.
August 9, 2021**

Good morning! I must admit, I’m pretty excited to actually be here “live” with you today! Not only is today’s topic of great importance and interest to me, but after more than a year-and-a-half of virtual meetings, it’s just so refreshing not to be staring at a computer screen and to finally see you in person again! People you can reach out and touch, and I’m a handshaker so please feel free to reach out and shake my hand, too. So, thank you for having me, and I look forward to today’s discussion. I’d like to use my brief time today to reflect on some of what the agency is doing to prepare itself for the future.

As you know, today’s energy landscape is probably the most dynamic and diverse it has ever been. Market forces are impacting the current fleet and prospective applicants. The industry is seeking to adopt new technologies, including digital instrumentation and control and non-light water reactors and fuels, and there is increasing interest in initiatives to expedite advanced reactor technologies. It has also been a time of great change due to the COVID-19 pandemic, which has forced us all to reimagine the way we work and live. As the independent safety regulator, the NRC must be just as diverse, flexible, and responsive to where the industry can go and the challenges it faces. To me, that’s really at the heart of the NRC being a modern, risk-informed regulator. And it’s something we have experience doing.

Many of you may have wondered, “what’s with the title of these remarks?” Well, I enjoy film and television, something you may know if you saw my remarks at this year’s Regulatory Information Conference. It’s something I picked up from my Dad, who was a radio and television personality, PGA golf reporter, and a stand-up comic. And in 1985, a wonderful film called “Back to the Future” came out. And while it was and is entertaining, the overall theme I think is quite fitting today for several reasons.

In a literal sense, the NRC has been looking back to past efforts to leverage lessons learned to better prepare for our future endeavors and make more timely and effective decisions. At the same time, the NRC is also embracing many themes in that movie. Overall, the film is about taking control and personal responsibility over one's own destiny. The movie is premised on the idea that a situation can be changed even if it seems otherwise impossible to

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overcome. It’s about the willingness to take risks and embrace technology and innovation. I know this is something that ANS has experience doing, too.

I understand from reading ANS material that in 1955, the same year as “Back to the Future’s” Dr. Emmet Brown imagined the flux capacitor to help bring time travel to life in a DeLorean, was also the year that the first commercial sale of atomic-generated electricity onto a major grid took place. That takes a willingness to accept risk. That willingness to accept risk is something that the NRC has been focused on throughout its history and that is evident in many current high-profile efforts including enhancements to our Reactor Oversight Process, the agency’s transformation efforts, our response to COVID, and our advanced reactor work.

So, I’m going to pause and go off script for just a second and bring you a little information. As some of you may know, the Commission this past week allowed the staff to withdraw two ROP papers. One was the engineering paper that dealt mainly, a lot with self-assessments that has been sitting still for a long time, and the other is the ROP Enhancement Initiative. And the staff asked us to withdraw it not because they don’t believe in the program, that’s not the reason they did it at all. In fact, the staff is of the opinion that they can implement a lot of what was in that paper without Commission approval. So, you’re going to see them move forward on some of those initiatives and then they are going to resubmit an updated paper with things that are more current and more timely. So, the withdrawal of the ROP papers was not because we don’t believe in the ROP and making changes and updates contrary to what you might hear outside. So I just wanted to share that with you. So today, I’ll touch on these efforts as examples of how risk-informing our processes can better prepare us for the future so that we can enable the safe use of existing and expected nuclear technologies.

I would like to emphasize before I get into these examples that in all that we do, the NRC’s safety and security mission is paramount. We must not and have never lost sight of that. Reasonable assurance of adequate protection is our strike zone over “home plate”, and we have a duty to the American people to meet that mission in every decision we make. But it is important to recognize that within our mission is the understanding that there is some risk.

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Reasonable assurance of *adequate* protection is not and has never been zero risk. The words “Reasonable assurance of adequate protection” indicate the presence of risk. So to be an effective regulator, the NRC has to be willing to accept some level of risk. When we look back at our history, it’s in those moments where we see innovation and imagination flourish.

Reactor Oversight Process

Let’s start with the example of the Reactor Oversight Process, or ROP. That process did not always exist. Instead, we used to have the *Systematic Assessment of Licensee Performance Program*, or *SALP* as our oversight assessment program. *SALP* was based on NRC observations of a licensee’s performance and expressed NRC management’s conclusions regarding licensee performance. As you might imagine, by its nature, it was quite subjective and was considered burdensome. In 1998, the NRC made the decision to suspend *SALP* as part of a plan to improve our regulatory effectiveness with more risk-informed, performance-based regulations. It took courage to embark and pilot a new program. To change and embrace a new way of doing things. That new program became the ROP, which is standing strong over two decades later. The ROP is a more risk-informed process that focuses both the agency and the licensee’s efforts on issues of the greatest safety significance. And the ROP is not now and never has been static. It was designed to and continues to evolve to account for new risk-insights, information, data, and operating experience.

This is sometimes met with skepticism or criticism, as we’ve seen with the most recent staff proposals to enhance the ROP, just as the change from *SALP* to the ROP was met with skepticism decades ago. For example, there is some thought out there that any changes to the ROP are efforts to reduce requirements, reduce safety, and weaken oversight. This, in turn, raises concerns with the American public, with our oversight committees, and with some at the agency. But I do not view past or proposed changes to the ROP as efforts to reduce safety or weaken oversight. To the contrary, I see them as efforts to fine tune and recalibrate our efforts based on data, experience, and inspection insights. This is at the heart of who we are and how we do business. And I’d like to acknowledge and recognize the dedication of our people to that

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mission, to recognize that the minor adjustments to the program, and those proposed by the staff are based on data and operating experience, with the goal of maintaining and enhancing safety. The ROP is therefore a great example of risk-informing our processes to better regulate the current and future fleet.

And we must accept risk. It is our duty to enable the safe use of civil nuclear technology to provide reasonable assurance of adequate protection of public health and safety and promote the common defense and security. As Stephen Covey once said, “*the greatest risk is the risk of riskless living.*” Think about that for a minute. We all take risks every day in many ways. Driving, flying, crossing the street, taking medicines, signing contracts, you name it, there is risk involved. But we must make choices regarding these risks to live and evolve in our changing environment.

Transformation

This willingness to accept risk is also central to some of the agency’s transformation and innovation efforts. The NRC kicked off its transformation journey with the Futures Assessment effort in October 2018. The Futures Assessment used a scenario planning approach to understand the various ways the future of the NRC’s external environment could change, how the NRC could be affected, and steps that the NRC could take to be prepared. Out of this effort, four focus areas were born for achieving the NRC’s transformation vision of being a modern, risk-informed regulator:

- Ensuring Our People are engaged and prepared.
- Expanding the use of our technology to work smarter.
- Highlighting our ability to be innovative and
- Emphasizing our ability to be risk tolerant in our decision-making.

As with the ROP efforts, some have questioned our transformation efforts. In particular, those efforts aimed at being more risk informed. But considering or taking an innovative approach does not mean less attention or focus. It means more focus on how we’ve done things

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and looking to see how we can improve based on what we know. It’s being smarter and more effective. In my opinion, it’s the best way to do business.

COVID-19

Coincidentally, all of the transformation focus areas also prepared us to successfully navigate what would become one of the most challenging and unprecedented times of our lives - the COVID-19 pandemic. To me, the agency’s response to COVID-19 demonstrated our agility, our ability to innovate and embrace technology, and our ability to balance and accept risk. And it started with our people and with efforts to change our culture. In my view, the strides the staff has taken with its culture initiatives are what have paved the way for the staff to use creative thinking, imagination, and an acceptance of risk tolerance to ensure that the limitations put on us during this pandemic did not affect our regulatory mission.

These culture initiatives have allowed sharing of ideas, which takes vulnerability and courage to do. With this inclusive sharing of ideas from all members of our staff there has been increased innovation and increased openness to new thoughts and ideas. That has opened the possibility of tackling things in new ways and achieving new things, too. This has been a risk for the staff to do and one that has paid off. And as with any of our most successful efforts, it’s not static. In fact, our agency’s culture team just completed the first round of Leader Behavior Check-Ins last month, which provide the opportunity for our leaders to engage with their peers to discuss things like leadership challenges and constructive strategies for role-modeling NRC desired culture behaviors.

As you know, over the past year the NRC staff has worked to balance the benefit of using technology to limit against the risk of COVID exposure. We have developed and used dashboards to track trends and make decisions on the number of inspection staff on site and reduced the duration of in-person inspections by conducting remote entrance and exit meetings. We have created online portals to submit licensing requests and track their status. I’m going to take a pause here and thank the licensees out there because it’s your ability to work with us, to

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help us do the job that has been just a wonderful example of how we, how the team can work together to make sure we’re accomplishing the mission that has to be accomplished, so thank you for that. We’ve evaluated the risk of certain licensing actions and leveraged past experience, data, and technology to streamline licensing reviews to address challenges faced by licensees and applicants.

The staff has been documenting lessons learned from its response to the COVID-19 pandemic, including those that apply to our licensing and oversight programs, as well as broader programmatic insights such as best practices for the conduct of public meetings, ensuring an effective hybrid telework environment, and expanding the use of agile teams. Some of the lessons learned relate solely to how we do things internally while others impact our external stakeholders. The staff continues to be intentional about outreach with our stakeholders when determining which good practices might be appropriate for incorporation into daily operations post-COVID. They’re diligently working to develop a more structured plan for stakeholder engagement and feedback.

To be honest it’s not perfect. There is room for improvement in how we communicate and how we do things. And we have faced some criticism about our acceptance of risk in these areas, meaning not all of our decisions have been popular. For example, the review of the single failure criterion for NuScale’s inadvertent actuation block valves received a lot of attention and oversight. And while it took some time to get there, I believe the agency got to the right place. I considered this an example of the staff taking actions to apply risk-informed principles in regulatory decision-making. There was a significant shift in how the staff approached licensing reviews moving forward. Again, it started with our people and influencing the culture. And some of the frustration from internal and external stakeholders alike is understandable because we have changed how we do things. And change from the norm is hard, but from my perspective, we haven’t changed *what* we do and that’s meeting our safety and security mission.

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In fact, I’m inspired by what I see. A group of dedicated individuals meeting our important mission by engaging with and considering each other and counterparts and leveraging experience to accept reasonable risks.

Advanced Reactors

Finally, I believe our work with advanced reactors is another example of leveraging experience and embracing change to make risk-informed and timely decisions. As you know, we are focused on developing a technology-neutral risk-informed and performance-based regulatory framework also known as Part 53.

We have accelerated the schedule for this effort, done extensive outreach with stakeholders, and applied innovative approaches to sharing draft rule language to ensure issues are timely and thoroughly understood and considered. This effort will continue to include frequent and extensive public stakeholder engagement consistent with our “Principles of Good Regulation.”

The goal is to develop an effective, efficient, clear, and reliable path for advanced reactor technology. I believe we are off to a good start, too. Again, we have received some criticism, but it is still early, and I am confident that the staff will be able to deliver something that is useable, efficient and effective technology-inclusive and risk-informed. I think the strides the NRC is making in other areas of the advanced reactor regulatory infrastructure also demonstrate our shift in thinking. For example, a key accomplishment is the NRC’s endorsement of the industry-led, DOE-supported Licensing Modernization Project to provide guidance for risk-informed and performance-based licensing approaches. This reflects a fundamental change from the traditional deterministic approach the NRC has used for licensing large light water reactors. I see it as an important step in modernizing our licensing framework.

I agree with the Chairman that the agency cannot be an impediment to innovation and that we must enable the safe implementation of advanced technologies. I also agree with the

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Chairman though that with more reliance on risk, we need to be sure to validate underlying assumptions and the computer models used with real-world data whenever possible. In “Back to the Future”, I believe Doc Brown summed it up when he said: “Your future is whatever you make it, so make it a good one.” I know there have been some challenges, but I believe the NRC people, the culture, the innovation, and the acceptance of risk has the agency on the right path to ensure a good present and future of regulatory readiness for both existing and future applications and technologies. Thank you for your attention, and I look forward to your questions.