

Regulatory Information Conference Remarks

March 10, 2021

Before I begin my remarks, I would like to note that this week marks the somber 10-year anniversary of the earthquake, tsunami, and accident at Fukushima. While the tragedy itself unfolded in Japan, it reverberated throughout the world and prompted soul-searching in the global nuclear community. I have tremendous respect for our Japanese colleagues as they work hard to decommission the site and rebuild their communities. I am pleased that Ambassador Koji Tomita is joining us Thursday to speak in our session on the 10th Anniversary of Fukushima.

On a separate note, as you know, we recently experienced a change in leadership. Former Chairman Svinicki is the NRC's longest serving commissioner, a strong leader, and a personal mentor that I dearly miss. That said, I congratulate Chris Hanson for his recent designation as Chairman. While we have only worked together for less than a year, I have found him to be studious and thorough, which I greatly respect. We may not always agree, but I appreciate our collegial relationship and congratulate him on his new leadership post. He recently shared a video to virtually introduce himself to agency staff. I found the idea and the video itself immensely clever since Chairman Hanson joined the agency while we have been in maximum telework, and the staff has largely not had the chance to get to know him. While working from home creates unique challenges for all of us, it also has some benefits. I can't help but smile when I think about how, as the weather warms up, Chairman Hanson will take his laptop outside and be closer to his beloved chickens.

Sen. Tom Carper of Delaware, the Chairman of the Senate Environment and Public Works Committee, has overseen the work of our agency for many years. He is fond of saying: “If it isn’t perfect, make it better.”

The theme for this year’s conference, The Power of Possibility, is the power to make it better. This is the purpose behind the agency’s transformation. It is the belief that we can regulate nuclear safety in better ways. This is not to say that our past hasn’t been good. It is simply a recognition that our world is dynamic and that we should have a mindset and culture to seek out excellence and innovation. If it isn’t perfect, let’s make it better.

The Efficiency Principle of Good Regulation states: “The American taxpayer, the rate-paying consumer, and licensees are all entitled to the best possible management and administration of regulatory activities. The highest technical and managerial competence is required and must be a constant agency goal.”

The principle does not say, “Let’s keep doing it the way we’ve always done it.” Rather, it says “the best possible management and administration”, “the highest technical and managerial competence.” These are stretch goals that we must continually strive for because achieving them is never permanent. As a safety regulator, we need to be thoughtful, measured, and deliberate about how and what we change. But our dynamic world constantly raises the bar and challenges us to do better.

The Efficiency Principle also says: “NRC must establish means to evaluate and continually upgrade its regulatory capabilities.” This means being able to learn and relearn is crucial to success. Transformation is about emPOWERing our staff members to rethink how and what they do and imagine the POSSIBILITY of doing

it better. Their creative and innovative contributions unlock the Power of Possibility and enable the agency to upgrade its capabilities.

I'd like to cite two examples with different approaches:

On Monday, Chairman Hanson touted the work of NRR's EMBARK Venture Studio, which is actively helping people and their ideas gain traction by breaking down barriers to new ways of working. They have made great progress over the last year in areas such as subsequent license renewal, Risk-Informed Process for Evaluations, and improved communications for advanced reactors. Like the Chairman, I'm impressed to see the progress in the Mission Analytic Portal and am eager to see it transform the use of data to support risk informed decision making across the Reactor Safety Program. In addition, the external portion of the Mission Analytics Portal focuses on automating business processes and providing transparency in licensing reviews. This work is all about using 'data-driven, results oriented' approaches to find new ways to solve old problems.

Chairman Hanson also touted the work done by our InnovateNRC team with its 424 innovation success stories and 14 Crowdsourcing Challenge campaigns.

Together, InnovateNRC and Embark grow our transformation efforts.

InnovateNRC is the platform to gather ideas, sometimes teaming up with Embark as the innovation incubator. I expect collaborative efforts like these to continue generating positive changes in how the agency operates in the future.

Amid all this talk of change, our safety and security mission remains constant: "To license and regulate the Nation's civilian use of radioactive materials to provide reasonable assurance of adequate protection of public health and safety and to promote the common defense and security and to protect the environment."

As always, this mission will remain our primary focus as we seek to transform and make things better.

The agency's performance during COVID is a sound example of our safety focus in the midst of change. Agility is no longer an aspirational buzzword but an operational reality. COVID's big challenge was: "So, you think you're good at your job? Let's see you do it during a pandemic." Staff met this challenge head on and showed agility by continuing to fulfill our mission.

As I look back on the past year, a few examples come to mind:

1. Immediately, and without missing a beat, our IT department effectively transitioned the entire agency from normal operations to telework for over 90% of the workforce. About 95% of our workforce remains in full-time telework a year later.
2. Our inspectors adjusted their inspections to maximize the work that could be done remotely and then be as safety-focused and productive as possible when it's necessary to be onsite. This demonstrated our inspectors' dedication to doing their job while minimizing the COVID risk to themselves and others.
3. Staff also worked to maintain transparency by shifting public meetings, like annual meetings on nuclear plant safety performance, to a remote format.

The agency leadership and staff response was outstanding. They remained dedicated and productive while managing to juggle all the complications that come with working remotely. Some doubled as virtual schoolteachers for their children. Others cared for relatives who were unable to care for themselves. Many more performed other unforeseen roles, all amid the ever-present stress and threat of the virus itself. The silver lining to this very dark cloud has been the growth of the

staff's agility. Once we move beyond this crucible, I hope that we can preserve and expand this cultural growth.

In past talks, I have touched on the topic of Risk. I emphasize this issue as it is vital to our transformational efforts. Yet our approach to risk informing is not perfect. This leads me back to the Efficiency Principle: "Regulatory activities should be consistent with the degree of risk reduction they achieve." This is at the heart of what it means to be a "modern *risk-informed* regulator." We shouldn't assume that processes enshrined decades ago with less operating experience, less data, and less sophisticated tools are "untouchable" and should be enshrined in perpetuity simply because that is what we've always done.

Our nuclear industry has over 4,500 years of operational experience in nuclear power. **We stand** where we are today because of the many lessons learned along the way. That experience contains a wealth of data that provides insights into risk.

Risk informing is about analyzing that data to find those insights as a basis for improving our processes. As safety improves, some inspection activities may result in diminishing returns. Inspectors may have to spend more time hunting for smaller and smaller infractions. This is the opposite of being risk informed. In seeking to improve oversight, it's important to analyze existing data to discern if, when, and where this might occur and then adjust accordingly. In this way, staff can make data driven decisions to refine oversight. We shouldn't be afraid to review our practices to look for improvements and efficiencies. Cost savings shouldn't be the primary goal, but it shouldn't be anathema, either. If we can find ways to better focus our inspections and meet our mission while incurring less cost, that is a win-win.

We should recognize and acknowledge safety enhancements wherever we find them: whether in the sustained, measurable improvement in the safety performance of existing reactors or the inherent safety in advanced reactor designs.

With regard to advanced reactors, a philosophy of “more regulation is always better” is far from perfect and would hinder their deployment. For advanced designs that incorporate inherent safety features, regulatory treatment should be consistent with the degree of risk reduction they achieve. By attempting to apply regulatory constraints common to existing plants, we risk hindering technology development with the potential for leaps and bounds in safety. This is clearly reflected in the Nuclear Energy Innovation and Modernization Act, commonly called NEIMA, particularly in its direction to the NRC to develop a technology-neutral, risk-informed, and performance-based regulatory framework for licensing advanced reactors. I am encouraged by the staff’s effort to start fresh, seek a broad range of stakeholder input, and think in new ways.

No doubt, this is a tall order and completing it by October of 2024 will be tough. It took the agency over 20 years to complete Part 52. But we are not in a time of business-as-usual. Congress has expressed a sense of urgency in enabling efficient and effective licensing of advanced reactors based on the public policy benefits of deploying the technology. A recent report by the Nuclear Innovation Alliance and the Partnership for Global Security also conveys a sense of urgency regarding the development of advanced reactor technology both to address climate change goals and to reassert global influence in nuclear safety, security, and non-proliferation.

The report considers the staff’s effort on Part 53 to be a “strong start” and states: “Licensing should be affordable, certain, and timely to enable the rapid build out of clean nuclear energy while meeting high standards.”

External stakeholders, including Congress, are watching closely to see how well we execute our responsibilities. This will require being accountable and responsive to efficiently reach sound, objective decisions in keeping with our safety and security mission. A strong start is important, but so is a strong finish. Our reputation as a regulator hinges on our ability to effectively and predictably license these reactors.

The Clarity Principle of Good Regulation states: “Agency positions should be readily understood and easily applied.” If we expect applicants to submit complete, high-quality applications, then it is incumbent upon us to provide the tools necessary for them to do so. While the agency has repeatedly claimed the ability to license advanced reactors under the existing framework, the regulatory guidance on how to do so is not yet complete.

Guidance is an interpretation of what it takes to meet our requirements. Without this guidance, applicants are forced to guess what is required for the application and what regulations will be applied in the agency’s review of it. Given this lack of guidance, it is not surprising to find disconnects between the staff and applicants in such circumstances.

The NRC’s Vision and Strategy objective of optimizing no-LWR regulatory readiness states: “Regulatory readiness includes the clear identification of NRC requirements and the effective and timely communication of those requirements to potential applicants in a manner that can be understood by stakeholders with a range of regulatory maturity.” We have yet to fully realize this state of readiness.

While licensing advanced reactors under our existing framework is possible, and in fact underway, I am concerned that such reviews will be neither predictable nor efficient. This is what makes the timely completion of Part 53 vital to enable predictable, timely reviews of advanced reactors. Applying our regulations to new technology is not a perfect solution, but I believe Part 53 will make it better: more coherent, logical, and practical enabling timely, high-quality decisions.

Here is one last quote from the Efficiency Principle, which states: “Regulatory decisions should be made without undue delay.” Margie Doane, our Executive Director, has often discussed how part of becoming a modern, risk-informed regulator also means making timely, high-quality decisions.

To me, high-quality decisions are safety-focused, data-driven, and objective. Subjectivity should be minimized to the extent staff can reasonably do so. Defense-in-depth should be used to address uncertainties. Decisions should also be transparent and reproduceable so that stakeholders can clearly see how a conclusion was reached and that it is defensible and withstands scrutiny. Agency action should ultimately be based on thorough, risk-informed, and unbiased assessments.

Our backfit rule is a vital tool that serves to refine our focus on safety significance and improve decision quality. The Reliability Principle of Good Regulation states: “Once established, regulation should be perceived to be reliable and not unjustifiably in a state of transition.” The backfit rule provides this reliability by establishing a disciplined process for determining whether regulatory changes are necessary for adequate protection of public health and safety, or whether proposed changes provide a substantial, cost-justified safety increase.

In this way, the backfit rule is a sound approach that right-sizes the regulatory framework according to risk and results in higher quality decisions focused on yielding significant safety benefits.

Becoming a modern, risk informed regulator with timely, high-quality decision making is also crucial for attracting and retaining the highly-skilled work force of the future. Our reputation as the gold standard for nuclear safety means each member of the staff is dedicated and contributing everyday to something bigger than themselves. While this principled work environment is very appealing, I believe we will struggle with retention of talented employees if our decision making is cumbersome.

Who wants to struggle through a 7-month concurrence process at the end of a big project? Talented people, particularly those early in their careers, will want to be part of an organization that is harnessing data and technology to streamline decision making and create an active, collaborative work environment. Here again, Embark Venture studios is taking the lead. They are modernizing decision making through a collaborative, data-driven, tech-driven approach to problem solving. This is the sort of innovative, high-performing culture that incoming employees early in their career will find appealing and engaging. We are on our way to more fully harnessing technology in executing our work and we are getting better.

Now, those of you who are familiar with my work know it wouldn't be a Commissioner Caputo speech if I didn't touch on financial management, an area ripe for improvement. Being an engineer, I'm a numbers person, and yes, we have come to the numbers portion of my remarks. I'll start with \$77 million dollars.

This is the amount of funds left over from Fiscal Year 2020, the funds that we collected from taxpayers and licensees that we ultimately didn't need to accomplish our mission. This \$77 million dollars wasn't essential for safety, it was left over AFTER the work was done.

This is a persistent problem that has driven Congress to institute reporting requirements and legislate a cap on corporate support costs as a portion of our budget. Of this \$77 million dollars, \$24 million was excess corporate support funding. Yet, despite this pattern of excess corporate support funds, the majority of floors in our headquarters at One White Flint have not been renovated in over 25 years.

Another number is \$114 million. This is the amount our Part 170 fee collections have decreased since 2016. All our inspections and licensing reviews are billed by the hour to the licensees and applicants receiving this service. For example, the total inspection related staff effort per operating site averages around 6,000 hours and is billed to each licensee. So, Part 170 fee collections are -- in essence -- a proxy for our core oversight and licensing workload. Between 2016 and 2020, these collections declined 36 percent from \$320 million to \$206 million. That means in 2020, our core oversight and licensing work represented only 26% of our total budget authority. In 2021, it is estimated to drop another \$35 million dollars. As additional reactors close prematurely, this downward trend will likely continue. We won't be doing less work with less money, as some claim. If our budget isn't adjusted accordingly, we will simply be doing less work for the same or more money. That would not be the best possible management and administration of our regulatory activities.

For those unfamiliar with our budgeting practices, we use a budget developed two years ago as a foundation to formulate a budget for two years from now with little calibration of comparison to actual expenditures. This results in a budget that is slow to reflect our changing reality.

Allocation of resources is a major instrument of policy for any agency. It is a statement of priorities and the means to achieve objectives. For this reason, I dedicate a significant amount of my time to our budget formulation and fee recovery processes, a fact well-known to the staff who are tasked with answering my many questions.

As in many other areas, I would like to see the agency use data analytics to formulate more accurate budgets based on actual expenditures and trends. Our financial management should not be exempt from the benefits of high-quality, data-driven decisions and transformational thinking. Our budgeting isn't perfect, and I think there is a lot we can do to make it more accurate.

Conclusion

I will conclude my remarks as I began them, by referencing Senator Carper's saying, "If it's not perfect, then make it better." I have highlighted areas where I believe progress is being made and areas where more needs to be done. I'm a firm believer in doing our best on today's work – that disciplined decision-making and process improvement are a crucial foundation and culture for addressing future challenges. While it's important to give some thought to where the future is headed 5 or 10 years out, we can't lose sight of doing our best right now. We may not know exactly where we'll be in the future, but improving our fundamentals now will ensure we are better prepared to when the future arrives.

Learning to operate in a pandemic was not something we chose but was thrust upon us. The leadership and staff rose to the challenge with dedication and integrity, something we should all be proud of. Now, it is incumbent upon us to:

- leverage the beneficial lessons and changes made over the past year,
- continue to challenge old paradigms,
- imagine the Power of Possibility, and
- transform.

In short: Let's make it better.