U.S. Nuclear Regulatory Commission
Chair Christopher T. Hanson
Remarks for the
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Introduction

Welcome to the United States. It is a pleasure to see you all here today.

I understand that like many other important international conferences, the INLA Congress has been postponed or virtual for the last several years due to challenges associated with the pandemic. While virtual exchanges in the interim have continued important work like INLA's around the world, there is nothing quite like being together in the same room.

I am grateful for the opportunity to share some perspectives that I hope are relevant to INLA's mission and goals. Specifically, today I want to talk about collaboration from the perspective of a mature regulatory agency that has experience to share but is also facing a future that will benefit from international collaboration on novel legal and technical issues.

The United States has an interest in supporting strong and independent regulators around the world by sharing our experience in both development and implementation of regulatory frameworks that prioritize the safe and secure use of nuclear material.

We are grateful for the opportunity to engage other countries seeking to utilize this experience and look forward to strengthening our international relationships through information exchanges.

Capacity Building

No regulatory agency can function without a well-rounded and competent workforce. We are involved with several efforts to promote capacity building in burgeoning regulatory agencies around the world. The importance of the education and encouragement of the next generation of international nuclear regulators cannot be understated and is just as critical for long established agencies as it is for those just beginning their regulatory journey.

This includes assuring that knowledge management practices are in place and regulatory experience is preserved and shared for the benefit of the next generation.

And while the search for engineering and other technical skillsets is commanding a lot of deserved attention, I think the people in this room will agree on the need to develop the next generation of legal talent, fostering mastery of what my friend Steve Burns calls "the regulatory craft."

These challenges are playing out in numerous regulatory agencies around the world and leaders are actively discussing their approaches, successes, and failures with one another.

It is just as important for leaders to share their experiences with staffing and development as technical advances. You cannot have one without the other.

For up-and-coming regulatory agencies, the United States is ready to assist with model frameworks that can be suited to fit a country's needs. Each country will have different requirements, but the mission of assuring the safe and secure use of nuclear materials should be the same. Along these lines, development of self-sustaining and independent frameworks based in technical competency is not the only important area that the NRC can assist with.

We are also an avid promoter of safety culture and an environment that encourages employees to raise concerns about safety. The work that we do is challenging and can have grave consequences if decisions are not based in safety.

Empowering the staff of a regulatory agency to identify and raise important issues without fear of reprisal is crucial to assuring this focus. As I hold discussions with regulatory counterparts of all shapes and sizes, the theme of fostering a questioning attitude among staff is raised again and again.

Having a strong and competent workforce is critical because nuclear regulators are currently facing a landscape filled with challenges and unique opportunities.

Harmonization

Harmonization is something we've all been hearing a lot about with regard to new nuclear deployment, whether it be light water small modular reactors, advanced reactors, or even fusion facilities. I see harmonization as having a spectrum of utility, and I'd like to see us find the sweet spot where we get the most use out of our collaboration.

Coming together to problem solve and address key issues that lie on the near horizon is something that globalization has made possible, and I think we will be better for it. Sharing in successes as well as learning experiences serves the global community and contributes to the ultimate goal of the safe and secure use of nuclear power.

We can all recognize that the laws of physics are the same everywhere, or as a Canadian friend puts it, "A neutron is a neutron is a neutron."

However, independence remains a very important factor for not just the United States, but sovereign regulatory agencies around the world. We are all under tremendous pressure to speed approvals, to take safety claims on faith—whether for economics, climate change, national security matters little.

But our independence to make sound, technical safety decisions, appropriately distanced from promotional policies and real or perceived market forces is sacrosanct.

But in speaking of independence, I don't mean isolation. Awareness of, and sensitivity to, the scientific, social, political, and economic contexts of our decision making is also essential. In addition, isolation can lead to a lack of awareness and missed opportunities for improvement on the global stage.

Speaking for myself, I confess I'm somewhat of a harmonization skeptic, and here's why: No country should be encouraged to rubber stamp something so important to the safety and security of its people. As regulators, we don't take anything on faith, neither from our applicants and licensees, nor from other governments, no matter how much we might respect them.

Regulatory agencies are accountable to the people that they protect, and each country has a set of regulations and legal frameworks that reflect the values and risk appetites of their citizenry. Each country's regulator is responsible for overseeing the construction and operation of the reactors in their country.

Harmonization in the form of a globally accepted licensing framework risks undermining the questioning attitude—the safety culture—that is the philosophical foundation of the peaceful use of nuclear power itself.

Further, developers are on a timeline that cannot accommodate the development of a global licensing system. In the time spent trying to figure out how to standardize frameworks and develop licenses that would be transferrable, we could be making technical advances through the use of strategic partnerships.

That said—jointly addressing and reaching agreement on key technical issues in the area of advanced reactor systems—such as classification of structures, systems, and components, or fuel qualification, or quality assurance programs—would represent a substantial step forward in facilitating more standardized designs and potentially streamlined yet rigorous safety reviews.

That is to say, I support harmonization through joint review of technical issues, so that then each country's specific legal framework can be applied in the right context.

It is imperative for countries to develop and maintain a regulatory organization that can review and evaluate technical findings and conclusions independently, adding to the global conversation and contributing new perspectives. This is the future of harmonization.

Striking a balance is key to the future of advanced and new nuclear development. INLA and the international legal community at large need to be an important part of shaping this future. Legal mechanisms that maintain independence while allowing fruitful and necessary international collaboration are critical, as are opportunities to utilize success in development and implementation of nuclear frameworks that ensure the safety of the global community.

Peaceful Uses and Developing Countries

It is easy at these types of conferences to focus our attention on the idealized future of advanced nuclear energy development and forget about the opportunities we have before us to share experiences on nuclear issues that are often overlooked.

I truly appreciate the beneficial role diverse sources of radiological materials can have on countries that are still developing their regulatory programs in this area.

I've seen the success that nuclear technology can bring in sometimes unexpected ways. Earlier this year, I visited the COPEG facility in Panama where the U.S. and Panama have

partnered for many years on screwworm eradication. The screwworm is as bad as it sounds—a flesh eating parasite that is a bane to livestock and can also cause immense damage to human health and wellbeing.

By using a radiation source small enough to fit in a coffee can to irradiate the larvae and produce sterile flies, Panama and the United States have been able to stop the successful breeding of natural populations that once cost billions of dollars in agricultural damage throughout Central and North America. The Panamanian Ministry of Health issues the license for this source and conducts independent inspections, and in doing so performs the critical regulatory function that protects health and safety of their people.

There is a need to look for similar and complementary opportunities to support the safe and secure use of nuclear materials. The U.S. NRC, for example, funds a program that provides training in the area of radiological safety for Latin America. There is a shortage of health physicists around the world and this program is designed to help with that.

The IAEA is spearheading a very important program called Rays of Hope that seeks to greatly expand access to medical uses of isotopes for cancer therapy in developing countries. Director General Grossi, even with a full plate, recognizes how transformative these technologies can be.

For such programs to be successful, we need legal and regulatory frameworks that can support and allow the benefits of these programs to be realized.

Steve Burns and I will be discussing Rays of Hope and similar programs as part of a panel called “Regulating a Modern Era of Medical and Radioactive Materials Facilities and Applications - The Journey Continues” at the upcoming IAEA regulatory effectiveness conference in Abu Dhabi in February. I hope you all can attend, and I look forward to engaging further in this area with many of you.

End-of-Life Considerations

While the safe and secure use of nuclear materials starts with creating opportunities and facilitating the development of an independent and capable regulator, it also must include full life cycle considerations. My background is primarily in the waste field, and I have retained a keen interest in these issues during my time as Chair of the NRC. I was heartened to see that the agenda includes a panel focused on the legal challenges and frameworks associated with decommissioning.

Often there isn't enough emphasis on information exchange in these areas and I applaud INLA for recognizing this need.

Decommissioning in the United States has become an issue of intense public interest and is worthy of global attention. We are learning lessons from going through these end-of-life processes. Our current regulations do not differentiate between operating reactors and decommissioning reactors.

All requirements for an operating reactor apply to a defueled, decommissioning reactor unless a licensee requests exemptions from the requirements. The agency is currently in the

middle of a large-scale effort to make changes to our regulatory framework for decommissioning to scale our requirements to match the risk profile of decommissioned reactors.

One of the key legal questions in the proposed rule is the appropriate mechanism for public involvement and opportunity to challenge agency decisions.

We certainly have perspectives to share from our past experiences with decommissioning and the current rulemaking. I believe our efforts in this area will afford learning opportunities for countries that are starting to consider development of a framework for decommissioning as well as other countries currently going through these end-of-life processes themselves.

Coming back to peaceful uses of radiological materials, end-of-life challenges are also a necessary area of focus in order to enable safe and secure uses. In my international travels as Chair, I've seen a need for information exchange in this area. A number of developing countries are dealing with the unexpected and sometimes significant cost associated with sources that are no longer in use.

Not only do they not have the physical infrastructure, they often lack legal and regulatory frameworks. Creating a framework to regulate the use of these types of materials should always include consideration of the entire lifecycle. The diverse uses associated with nuclear materials can provide significant utility in many countries, promoting economic, medical, and agricultural advancements.

However, to realize these benefits, it is important for regulators to have a solid framework that can support the safe use and security of sources as well as their ultimate dispositioning. The United States and many of the countries represented here today at INLA have critical knowledge in these areas. Concentrating and sharing these insights should be a priority.

Conclusion

What is the role of the legal community in all of this? Well—in my opinion it is a very critical piece of the puzzle. Some of the most difficult and pressing questions around international nuclear safety and security cannot be resolved without your help.

The international community is filled with diverse approaches and legal frameworks, although I expect we have more in common than not. We all share the same safety mission. To create a community that can share and exchange and learn from one another, we need each other's guidance.

We need innovative ways to both acknowledge and appreciate our differences while interfacing on key regulatory priorities. In each of the areas I have discussed today, there are critical opportunities for international legal counterparts to come together and promote safe and effective solutions to emerging issues, to promote partnerships around the globe, and to shape the future of nuclear regulation.

Thank you again for the opportunity to address you all today, I look forward to your questions.