

HEARING ON THE NOMINATION OF CHRISTOPHER T. HANSON TO BE A
MEMBER OF THE NUCLEAR REGULATORY COMMISSION

Wednesday, April 17, 2024

United States Senate

Committee on Environment and Public Works

Washington, D.C.

The committee met, pursuant to notice, at 10:04 a.m. in room 406, Dirksen Senate Office Building, the Honorable Thomas R. Carper [chairman of the committee] presiding.

Present: Senators Carper, Capito, Whitehouse, Markey, Stabenow, Kelly, Padilla, Lummis, Ricketts.

STATEMENT OF THE HONORABLE THOMAS R. CARPER, A UNITED STATES
SENATOR FROM THE STATE OF DELAWARE

Senator Carper. Good morning, everyone. I am pleased to call this committee to order.

We are here today, as you know, to consider the nomination of Christopher T. Hanson to serve an additional five-year term as Commissioner on the Nuclear Regulatory Commission. Welcome back to our committee, Chair Hanson. We thank you for the time you have taken to meet with us in anticipation of this hearing and with other members of the committee and with our staffs.

In a few minutes, Senator Stabenow has asked for the privilege of introducing you, and at an appropriate time, I will yield to her.

Let me just start off by saying a few words about what I think is a crucial, that may be the wrong word, but I am going to say it is a crucial moment, or a critical moment, maybe, for the Nuclear Regulatory Commission and for the future of nuclear energy in the United States and abroad. I like to quote Albert Einstein, who used to say, in adversity lies opportunity. There is plenty of adversity around the world, and in this Country also plenty of adversity, but plenty of opportunity. The NRC can be and has been part of that opportunity.

Today, the Commission is facing some new challenges, but I believe that, again, in adversity lies opportunity. We are

going to make sure that it actually works out that way.

As we all know, nuclear power plays a critical role in our electricity grid. It is also indispensable in our ongoing efforts to address the climate crisis that we face and to strengthen our Nation's energy security, while also creating economic opportunity and jobs, lots of jobs. Nuclear energy is currently the largest source of reliable, clean energy in our Nation, providing, I am told, about 20 percent of our Nation's electricity and nearly half of our clean power.

At last year's United Nations climate conference, known as COP28, over 20 countries, including the United States, agreed to triple global nuclear energy capacity by 2050, triple global nuclear energy capacity by 2050. Let me just say that again: by 2050, triple our global nuclear energy capacity. I was amazed to see that. Let me say that again: at last year's UN climate conference, over 20 countries, 20 countries, including the United States of America agree to triple global nuclear energy capacity by 2050.

The consensus is clear. New nuclear energy development can help us limit global warming to our target of 1.5 degrees Celsius.

That is why I have long believed that nuclear energy must be a part of our work to address climate change. My interest in nuclear goes back to my days as a Navy ROTC student at Ohio

State University and later as a Naval flight officer tracking nuclear submarines all over the world, Russian subs and all that, as well as our own. I am happy to report that it was easy to find their submarines and very hard to find our own. It still is that way, it is still that way.

I went back to Ohio State, actually, just last weekend, and had the opportunity, rejoined with some of my colleagues from all those years ago during the Vietnam War. Anyway, I witnessed in my early days as a junior officer how our submarines and aircraft carriers traveled millions of miles on nuclear power.

While a great majority of my colleagues and I support research and development of nuclear technologies, the Nuclear Regulatory Commission is charged with ensuring that current and new nuclear designs are safe and that they are secure.

The Nuclear Regulatory Commission is recognized globally as the gold standard for the regulation of nuclear technology. Other countries around the world look to our Commission because of its independence, because of its technical expertise, and because of its emphasis on safety. That is what the Congress and the American people expect from the Nuclear Regulatory Commission.

The climate crisis we face today presents new challenges and, again, opportunities for the Nuclear Regulatory Commission. It is imperative that the Commission carefully review the many

new nuclear plant designs that companies, entrepreneurs, and the U.S. Government are bringing forward. At the same time, the Commission must ensure that existing reactors can continue to operate safely, in many cases, well past their original design life.

It is up to us in Congress and particularly in this committee to ensure that the Commission has the right leadership and resources it needs for the 21st century. That is why I have been working for years now with Ranking Member Senator Shelley Moore Capito and others on the committee to pass our ADVANCE Act, which she is the lead on.

I am joining her, along with a bunch of the Democrats and Republicans on this committee, and in the Senate, and as it turns out, I think maybe, in the House, too. More about that later. But I believe the ADVANCE Act will provide the Commission with the tools, the resources, and the workforce that it needs in order to usher in the future of nuclear energy.

At this crucial moment for new nuclear technologies and our climate, the Nuclear Regulatory Commission needs a full slate of Commissioners in place to succeed. Fortunately, President Biden has nominated Chair Hanson to serve another term as Chair on the Nuclear Regulatory Commission.

Chair Hanson is a proven leader and a dedicated public servant with decades of government experience. Before beginning

his service on the Commission, Chair Hanson worked as a staff member on the Senate Appropriations Committee, who I believe, did you know him then?

Senator Capito. No.

Senator Carper. Before beginning his service on the Commission, Chair Hanson worked as a staff member in the Senate Appropriations Committee, where he oversaw civilian and national security nuclear programs. Prior to his time in the Senate, he was a Senior Advisor in the Department of Energy's Office of Nuclear Energy. He has also worked in the Department of Energy's Office of the Chief Financial Officer, where he oversaw nuclear and environmental cleanup programs and managed the department's relationships with the House and Senate Appropriations Committees.

Under Chair Hanson's leadership, the Nuclear Regulatory Commission has undertaken significant efforts to modernize the agency while dealing with constrained resources. He has skillfully led the Commission's development of policies to prepare for new technologies. That includes, for example, the Commission's work to establish a new regulatory framework for the safe licensing and operation of the next generation of nuclear reactors, as well as fusion energy systems. Through initiatives like this one, the Commission is improving efficiency while maintaining high standards for safety.

In his time on the Nuclear Regulatory Commission, Chair Hanson has gone above and beyond to engage with both industry and with the public. For example, in 2022, he convened the first Commission meeting outside of Washington, D.C. in decades in New Mexico, where he facilitated a dialogue with Navajo Nation members about the cleanup of legacy uranium mining and milling sites.

Finally, he has also demonstrated a commitment to promoting environmental justice during his tenure by directing Commission staff to provide recommendations for updating the agency's environmental justice policy.

In closing, the Nuclear Regulatory Commission is most effective when it has a full slate of commissioners who can carry out its critically important mission: to protect the safety of our nuclear facilities and maintain public trust while facilitating the safe deployment of clean nuclear energy.

I believe that Chair Hanson is the right person for the job at this time. I hope to work with members of this Committee, including our Ranking Member, to move his nomination through the confirmation process.

Chair Hanson, I want to thank you for your service and I want to thank your family, your long-suffering wife, Ann, and your mother, sitting out there, who brought you into the world and helped raise you and shared you with all of us. He has

turned out pretty well, ma'am. You gave him a good start in life. Thanks for sharing him with us.

With that, I want to turn to Senator Capito for her opening remarks. Senator Capito?

[The prepared statement of Senator Carper follows:]

STATEMENT OF THE HONORABLE SHELLEY MOORE CAPITO, A UNITED STATES
SENATOR FROM THE STATE OF WEST VIRGINIA

Senator Capito. Well, thank you, and welcome to everybody. Thank you, Chairman Carper, for calling today's hearing, and thank you, Chair Hanson, for being here today.

I certainly have appreciated our conversations, both in-person and on the phone. We probably did a few Zooms during COVID, and you have always been very open and ready to respond, so I appreciate that.

During your tenure, the Nuclear Regulatory Commission has been preparing for the expected increase in advanced nuclear licensing and regulatory work, while also ensuring the safe and secure operation of today's nuclear reactors and nuclear materials.

Based on projections, we will need significantly more reliable electricity generation, including from nuclear energy, in the future. Nuclear power already provides 20 percent of our Nation's electricity, emissions-free electricity, that is on 24-7, 365 days per year.

Electricity demand is projected to increase rapidly in the short term in part due to the buildout of data centers. When I heard how much power data centers use, it really astounded me, and increased use of artificial intelligence. If the Administration continues to push an electrify everything agenda,

from cars to trucks to trains to buildings, electricity demand will rise even faster.

Meanwhile, in the face of increasing power demand, the Biden Administration is advancing their radical climate agenda to close down fossil-fuel-fired power plants that supply reliable, affordable electricity. I have repeatedly raised the red flag on this looming threat of increasing demand and decreasing supply since the beginning of this Administration.

I most recently raised that flag in an amicus brief and an oversight report from the committee Republicans, and I will continue to highlight that going forward. It just makes sense to me.

Unless stopped by Congress or the courts, the Administration's regulatory attack on the power sector will cause dispatchable baseload electricity resources to retire prematurely. This will lead to major reliability challenges and stunt economic development and increase the costs paid by American families and businesses. So, we should be focusing on increasing, not decreasing, the supply from baseload, reliable power sources, and increased nuclear energy deployment should be and must be a part of that solution.

That will require the NRC to be prepared to efficiently review and approve novel reactor designs, to enable the safe use of nuclear power, and license a high volume of applications in a

timely, affordable, and predictable way. The projected increase in the NRC's workload will overlap with the five-year term that Chairman Hanson has been nominated to serve.

Chair Hanson has supported some important policies since he joined the Commission four years ago. He supported finalizing the emergency preparedness rules for advanced reactors and correcting a flawed staff proposal to establish a new regulatory framework.

That said, Chair Hanson has also made a few policy decisions that I have some concerns about. For example, he voted to reverse a previous Commission decision to issue license extensions, a vote that resulted in a cascade of uncertainty for the nuclear industry. We can talk about that in the questioning.

Chair Hanson's nomination must be judged not only on his policy positions, but also on his management decisions as Chairman. The Chairman oversees and supervises the NRC staff's work and is responsible for developing policy planning and guidance for consideration by the Commission.

Chair Hanson has a duty to ensure that the NRC staff, including the Executive Director of Operations, the EDO, are responsible to the Commission in the performance of its functions. The Chairman and the EDO, through the Chairman, are responsible for ensuring that the Commission is fully and

currently informed about matters within its functions. The Chairman supervises the development and execution of the Commission's budget and comes before us once a year to talk about that.

I have concerns with some of the ways that the Commission has been managed recently. Last year, senior NRC staff, under the supervision of the Chair, proposed to drastically expand telework, cutting the required time in office to just four hours per week. This staff proposal bluntly contradicted the Biden Administration's directive to get Federal employees back in the office. I expressed concern with the staff's proposal, noting the likely unintended consequences from reducing personal interaction, both within the NRC staff and between the staff and licensees, applicants, and the public.

The Commission believed that this dramatic departure from in-office culture was a policy matter and therefore subject to approval by the entire Commission. This appears to reflect the view that the Commission was not fully informed on the course of the staff's proposal, as the Chairman is responsible to do.

When presented with the opportunity to directly weigh in on this decision, Chair Hanson doubled down in his support of what I think is an outlandish proposal, breaking with the other three commissioners. I appreciate the efforts of the other members of the Commission to reset the staff's proposal.

We similarly saw the NRC staff present the Commission with a flawed proposed rulemaking to establish the regulatory framework for advanced nuclear reactors, as the Chairman talked about how critical this is, despite countless public comments that the rule was unworkable. In this instance, Chair Hanson aligned with the entire Commission to rectify those flaws, and thank you for that, although the senior NRC staff and the Chairman probably should have acted earlier to address these well-documented issues.

I look forward to getting more information from Chair Hanson about the execution of his role to supervise and direct the NRC staff.

We are at a critical time for the nuclear industry, and I appreciate how members across the political spectrum are working together to provide the Commission with the necessary direction and tools to fulfill its mission.

Chairman Carper, Senator Whitehouse, and I continue to work tirelessly to see the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy -- we always have a good name -- called the ADVANCE Act signed into law, we got really close at the end of last year, so that America remains the world's leader in nuclear energy.

As the saying goes, personnel is policy, and as we work to advance these laws, we need to make sure we have the right

personnel in place at the NRC. I look forward to learning more about Chair Hanson's plans for the Commission's work and how he will consider these critical policy matters.

Again, thank you for coming, and I thank the family for joining him.

[The prepared statement of Senator Capito follows:]

Senator Carper. Thank you, Senator Capito.

Senator Stabenow has asked for the opportunity to introduce you, and I have rejected that request.

[Laughter.]

Senator Carper. Everybody else wants to introduce you, too. Senator Stabenow, go right ahead. Thank you.

Senator Stabenow. That is right. Well, thank you, Mr. Chairman. Yes, thank you, Mr. Chairman and Ranking Member. It really is my pleasure to introduce the Chair of the U.S. Nuclear Regulatory Commission, who has been renominated to serve out a second term in his position.

I am so glad that your wife, Ann, is here, and son Andrew, and mother Linda, who has traveled all the way from Michigan, I understand, to be here. That is great, and your father-in-law as well, George, so we welcome all of you for being here. We are so pleased.

Mr. Chairman, Chair Hanson was born and raised in Michigan, so his work ethic, his values, his perspectives come from hard-working people in Michigan. In fact, growing up --

Senator Carper. If I could, let me just say, I was back in Ohio at Ohio State University --

Senator Stabenow. You don't have to talk about Ohio State.

Senator Carper. No, no, no, no, no, but I sit --

Senator Stabenow. You know, we like our competitor, just

in case, Mr. Chairman, you didn't realize, we are competitors with Ohio State.

Senator Carper. What are you saying, just because someone is your opponent that they don't have to be your enemy?

Senator Stabenow. That is right.

Senator Carper. I am a huge Detroit Tigers fan, along with Senator Stabenow. Huge fan, huge fan. There you go.

Senator Stabenow. Yes, and we will welcome you back to a game.

Senator Carper. And all of our grandchildren go to the University of Michigan, so there.

Senator Stabenow. So, somebody got it right, yes.

Let me just say that growing up, his family home in beautiful South Haven along Lake Michigan, you have to come see beautiful South Haven, it was only a few miles from the Palisades Nuclear Power Plant in West Michigan. His family, friends, and neighbors worked at the plant, an NRC resident inspector lived just up the block, I understand. I mention that just because Chair Hanson knows what a nuclear facility can mean for a community, as both a source of emissions-free electricity, but also a source of good-paying jobs.

As a Michigander, he also knows well the vital importance of protecting our environment and particularly our Great Lakes. In fact, the Great Lakes are in our DNA.

In college, he worked as a park ranger for the Michigan Department of Natural Resources at Van Buren State Park. Each summer, he and his family head back to Michigan to visit his mom, Linda, and they visit Sleeping Bear Dunes and camp at the State parks along Lake Michigan. They know all there is to protect and preserve for Michigan.

It is that stewardship, that perspective as a guardian of safety, and stewardship of our natural resources that I believe has made him an excellent Chair of the NRC, and why I urge my colleagues to vote for his renomination.

Under his leadership, the NRC has built up their capacity to evaluate both existing and emerging technologies, all while keeping its safety mission, safety mission, safety mission front and center. They have improved agency engagement with licensees and the public alike, which I appreciate, and they have spearheaded critical efforts to ensure that we have the nuclear workforce to meet future needs through the educational and R&D grants to institutions like the University of Michigan.

I can't stress enough how important a position like this is, as we know, and Chair Hanson is the right person for the position. He has proven as much during his first term. I know he is going to continue to do a great job in his second term.

Chair Hanson, I am pleased to welcome you back to the committee, and I look forward to supporting your nomination.

Thank you, Mr. Chairman.

Senator Carper. Senator Stabenow, thank you for that introduction. Thank you for just being a great member of this committee. It has been such a joy. I think we came to the U.S. Senator together.

Senator Stabenow. We did.

Senator Carper. We will someday leave together. About 20 more years, I think that is what we are thinking. Maybe not that long.

[Laughter.]

Senator Carper. I think, with that, we are ready to rock and roll here. Thank you very much, Chair Hanson, for joining us, and your family and friends that are out in the audience. We welcome your testimony, and we look forward to having the opportunity to ask a couple of questions once you have concluded. You are recognized. Go ahead, please.

STATEMENT OF CHRISTOPHER T. HANSON, NOMINEE TO BE A MEMBER,
NUCLEAR REGULATORY COMMISSION

Mr. Hanson. Thank you very much, Chairman Carper.

Senator Carper. If you want to start by introducing your family, please do.

Mr. Hanson. Yes. Thank you, Chairman Carper and Ranking Member Capito. Please allow me to introduce my family seated behind me: my wife Ann, our son Andrew, who, contrary to appearance, is not on the basketball team at Washington College, but is rather on the rowing team. He is a sophomore there.

My mom Linda, who, as Senator Stabenow noted, travelled from Michigan to be here, and my father-in-law, George, who now lives in the area. Two of our boys, Sam, is in the U.S. Army. He is serving down at Fort Sam Houston in San Antonio these days.

Senator Carper. Sam is serving at Fort Sam?

Mr. Hanson. Fort Sam, yes.

Senator Carper. That is pretty good.

Mr. Hanson. It is not lost on us, either. We have a good time with that in our house.

In the Army Medical Corps. And our son Theo is a junior in high school. He lucked out and is on his way on a school field trip to Orlando.

Senator Carper. He would rather do that than be here?

Mr. Hanson. Right.

[Laughter.]

Senator Carper. I don't get it.

Mr. Hanson. I want to just express my gratitude to all of them for their love and unwavering support. Thank you.

I wanted to thank you, Senator Stabenow, for your very kind words of introduction, and particularly to thank you for your distinguished career in service to the people of Michigan, to say nothing of the entire Country. Thank you so much.

Senator Carper and Senator Capito, it is a real pleasure and an honor to appear before you. As I get into my opening statement, I just want to take a moment to remember my former boss on the Appropriations Committee, Senator Dianne Feinstein, who introduced me to this committee at my confirmation hearing in March of 2020.

As you know, she passed away last September. One of the things that I most admired about her was her pragmatism, her constant drive to make a difference and to get things done. That is what really makes her a role model for me and what I have strived for at my time at the NRC and what I hope to continue to strive for.

I am deeply honored to be renominated by President Biden. I am humbled and grateful for his confidence in my ability to continue serving the American people as Chair of the Nuclear

Regulatory Commission. I want to take a moment to sincerely thank the hardworking and dedicated staff at the NRC who work tirelessly to fulfill our mission to regulate the civilian use of nuclear material and protect the public health and safety and the environment.

I am proud of the accomplishments of the NRC staff and my Commission colleagues over the past four years, ushering in a new era at the agency. These include paving the way for a technology-inclusive framework to license new and advanced reactors, charting a path for regulating fusion energy systems, licensing the first non-light water reactor in the United States in over 50 years, efficiently overseeing the addition of 2,500 megawatts of new nuclear generation at the Vogtle Plant in Georgia and strengthening America's leadership role abroad as a reliable partner to embarking nations seeking national and energy security.

During my tenure at the NRC, I have embraced building a culture of trust and confidence, both internally and externally. As the NRC becomes even more proficient in applying risk information and making further efficiencies in our licensing reviews and decisions, we must continue to uphold our commitments to the American public.

There is more work still to be done. If confirmed by the Senate, I pledge to continue leading the agency in tackling the

challenges ahead for both the existing fleet of reactors and next generation nuclear technologies while upholding the agency's critical safety and security mission.

I believe the NRC can adapt to a dynamic landscape where new and existing nuclear technologies will play a greater role in our energy future. We can pursue excellence and exercise safety oversight without sacrificing timeliness and effectiveness.

We can build on the tremendous expertise this agency has accumulated over its nearly 50-year legacy by staying true to our principles of good regulation: independence, openness, efficiency, clarity, and reliability. We can and will meet, anticipate the changes ahead and we will rise to meet them.

If confirmed, I commit to working with my colleagues on the Commission and leading the NRC staff into the next chapter of the agency's long and distinguished history.

Thank you, Senators, for your consideration of my nomination, and I welcome your questions.

[The prepared statement of Mr. Hanson follows:]

Senator Carper. We welcome them, as well. Thank you.

Thanks for your testimony, your willingness to be here with all of us, and to bring along with you your family. This is great.

Now, we are ready to begin the questioning for our witness. Senator Capito and I have agreed to two rounds of five-minute questions.

To begin, this committee has three standing yes-or-no questions that it asks of all nominees who appear before us. I am going to ask the first question.

Do you agree, if confirmed, to appear before this committee or designated members of this committee and other appropriate committees of this Congress and provide information subject to appropriate and necessary security protections with respect to your responsibilities? Do you?

Mr. Hanson. Yes.

Senator Carper. Do you agree to ensure that testimony, briefings, documents, and electronic and other forms of communication of information are provided to this committee and its staff and other appropriate committees in a timely manner? Do you?

Mr. Hanson. Yes.

Senator Carper. Finally, do you know of any matters which you may or may not have disclosed that might place you in a

conflict of interest if you are confirmed? Do you?

Mr. Hanson. I am not aware of any matters of conflict of interest, Senator.

Senator Carper. Thank you.

With that, I am going to start the questioning. Really quick question, I can spend the rest of the morning telling about what I learned from my parents in order to enable me to serve in the military and the State of Delaware and here. I could spend a long time talking about what was really helpful to me as a kid growing up.

Mention one of the things that, from your mom, with her sitting there, one of the things that she helped instill in you that helped prepare you for this responsibility. Go ahead.

Mr. Hanson. Thank you, Senator. Really, I would highlight both my parents. My mom was a middle school English teacher and a librarian for many years. First of all, she made sure I didn't leave the house without knowing how to write and communicate clearly in the written word, but also just a deep appreciation from both of my parents for public service.

My dad was a teacher as well as a public school administrator in western Michigan, and I watched him toil over budgets and teacher contracts and school construction and all kinds of things.

While we may operate on a bigger scale here in Washington,

the issues aren't that different. Tackling those things with a real attention to detail and some integrity really made a difference. I got that from both of my parents.

Senator Carper. Great. Well, thanks very much for sharing that with us.

The NRC, I will talk a little bit about 2024 priorities that you have embraced, and we will be talking about today. The NRC is focused on its charge to ensure the safety of the existing nuclear fleet. The Commission is also meeting the moment to safeguard new technologies, including advanced reactors, something that Senator Capito and I and others on the committee have worked on a lot.

Navigating these priorities requires a clear vision and decisive leadership, which you have demonstrated, I think, throughout your first term. Here is my question: could you detail for us your goals for the Commission heading into this year and update us on your progress?

Mr. Hanson. Thank you, Senator. We have had some successes in the last few years. We have successfully issued, as I noted, that construction permit for a non-light water reactor. It was a small reactor, but we learned a lot, and we learned a lot from past reviews during that time.

My focus is really building on the learning that we have accumulated over not only our 50-year history, but even in the

last five or ten years on timely and efficient reactor reviews, and understanding and adapting our regulations to these new technologies. As we get some further successes under our belt, we have another license application, the Bill Gates Company, TerraPower, came in with its construction permit application just a couple of weeks ago, expecting, again, an efficient and timely review on that.

As we build on that success, I am focusing on the repeatability of these efforts to build confidence outside the agency that the NRC can either adapt its existing frameworks or, again, chart new paths with the Part 53 rulemaking and other things.

As Senator Capito noted, we put out an emergency planning final rule. We have issued siting guidance. We have a security paper in front of us. I have directed the staff and just received a paper on options on reforming the uncontested mandatory hearing process that I think could be important in terms of making nth-of-a-kind reactors more efficient.

I and my colleagues are focused on microreactors and how to send the right signals and adapt our regulatory frameworks there as we work with you on potential legislative changes that may be needed.

So I think there is, as I said, we have a lot of things in progress. I think we have had some successes, but building on

those and getting repeatability, building that muscle memory within the organization I think will be critical moving forward.

Senator Carper. I have a number of other questions I am going to ask, but not right now. I want to give Senator Capito and the other members of our committee to jump in on the questions.

I will telegraph my pitch, like baseball, telegraph my pitch. The next question I will ask is, how do the actions that the NRC take today matter for the future? How do the actions that the NRC takes today matter for the future of the agency? I will be asking that when it is my turn again. Thank you.

Senator Capito?

Senator Capito. Thank you, Mr. Chairman.

Chair Hanson, you know this is one of my, I mentioned it in my opening statement, is the staff telework decision. You select and appoint the Executive Director of Operations. The recommendation, which was to reduce the amount of in-person work at the NRC from the current minimum of two days a week to just four hours per week. It was determined that the Commission has the authority to vote on this, and it was an administrative decision.

Your colleagues on the Commission decided, I mean, thought that this policy should be a policy which requires full Commission approval. Do you agree with your colleagues that the

Commission had the authority to determine the proposed changes in the NRC internal telework guidance? Was it a matter of policy, authorizing the Commission to vote on the new proposal? Do you agree with what went forward, the way it was handled?

Mr. Hanson. Yes, my colleagues, any member of the Commission, can take an information paper that wouldn't necessarily be a voting matter and turn it into a voting matter for the entire Commission.

Senator Capito. And that is what happened. Do you agree with that, that is something the Commission should have considered?

Mr. Hanson. Telework, Senator?

Senator Capito. Yes.

Mr. Hanson. I thought it was more, at the time, I thought it was more of an operational decision for the EDO. I had a number of concerns about taking that authority, in this case, away from the EDO.

Senator Capito. But it was taken away, the Commission voted on it?

Mr. Hanson. It was. The Commission voted, absolutely, and we have implemented that direction going forward.

Senator Capito. I know what you are going to say when I ask this question, because every time I ask it to a Cabinet member, I get the same answer. How do you consider potential

impacts of dramatic reductions in in-person staff work? I know you are going to say, the work gets done because we are checking on everybody.

But I think corporate America and others are seeing, and we are seeing this in government functions, whether it is a slowdown in visas or whether it is the messing up the FAFSA form, and all these other kinds of, these lack of in-person interaction in the workplace, obviously, an outgrowth of COVID, has had impacts.

What would you say about the fact that your policy says that you only are, I think it is two days every two weeks, and a day is six hours? How do you feel about that? The impacts that it has on the NRC.

Mr. Hanson. Senator, if I could, I want to just take a step back. We were one of the first agencies to come back into the office in November of 2021, led by our EDO at the time. Even throughout that subsequent 18-month period, we were still in the office more than anybody else.

It generated a lot of frustration on the part of the staff, because people, even at two days a week, which was the standard, people were coming into empty offices, and they were coming into their offices to sit on Zoom meetings when other people weren't there, and so on and so forth.

The mission, we accomplished the mission during that time.

We issued licenses; we oversaw the completion of Vogtle, we got a lot done in that both full-time telework and hybrid work environment. The proposal, while it may have had the effects that you described, the proposal that the EDO put forward was actually to delegate telework decisions down to the lowest level possible.

Because during that time, when we were in the office more than almost any other agency in government, it created a real lack of trust between staff and senior leaders, and I think the EDO at the time was trying to address that. He said, okay, let's delegate that decision down to the lowest level, the team leaders, about what works best on an individual team lead in terms of the telework posture that people should have.

But the accountability mechanisms were still going to be in place. We have a strategic goal about having a healthy organizational culture. People are still going to be held accountable for that. We have goals about accomplishing the mission. People would still be accountable for that.

And it is not that I took any pleasure whatsoever in disagreeing with my colleagues or that I saw the matter as my personal views, even, about one day a week or any number of days a week. It was about the level of decision-making for me and about, I didn't want the Commission to be in a position of having to negotiate with the union, for example. I was looking

on some of the knock-on effects, as well.

Senator Capito. I would just comment on that. I kind of disagree, I definitely disagree with the track that you are taking there, because I think that is part of the problem that we see government-wide, is the President is in charge of the government. He makes a statement: everybody should come back to work, but nobody is coming back to work. They are not coming back to work full-time.

I think the person running the organization is the one who has the responsibility, because if you leave it to everybody individually, to me, that would be sort of chaotic.

But I have a lot, another, can I ask one more question before? Because I mentioned this in my opening statement, and I want to give you a chance to respond to that, and thank you for your answer on the other.

You have stated, and you restated again that reliability is critical in terms of decision-making because it ensures a level of predictability and certainty. So, you did, despite your statements, you did choose to side with former Commissioner Baran to overturn previously issued license renewals. Your decision ignored extensive staff analysis and justification, multiple previous Commission licensing actions without any new information really being used. The resulting vote occurred solely because two commissioners that had previously been in the

majority were no longer on the Commission.

How does your vote to reverse previously issued licenses align with your 2020 statements that the NRC must be reliable and predictable, and your statements here again today, and its regulatory actions, so licensees can act with a minimum of uncertainty in the regulatory arena?

Mr. Hanson. Senator Capito, thank you for the opportunity to address this issue. I appreciate it very much.

The decision to overturn the previous Commission decision was not taken lightly at all. It was my firm belief at the time, and it continues to be, that there was a significant, that the agency and, by extension, our licensees faced significant legal risk. It was because of that that the decision was necessary to comply with NEPA and APA. It was my belief that, in short, that we were going to get sued, and the people who sued us were going to win.

While I recognize and I very much regret the disruption that that reversal caused, while having issued one or two or even three license renewals now, fixing that situation expeditiously, which we did, and that fix has been in front of the Commission, I hope to see a decision imminently on that, that it was better to fix that now than to get 10 or 12 or 15 licenses down the road and have a Federal court overturn us.

Senator Capito. Let me just ask a technical question,

then, of the previously issued licenses in the time which you voted to overturn those in 2022. Are you just now telling me that two and a half years later, you are getting to looking at these that you denied and deciding what to do with them? Or have some of them already been --

Mr. Hanson. No, the safety evaluations have been completed on those. We have one licensee who elected to do a site-specific analysis on that, and I believe that --

Senator Capito. So none of those licenses have been reissued from 2022?

Mr. Hanson. And there is one other that I believe is waiting to incorporate the new generic environmental impact statement.

Senator Capito. Well, this kind of gets to the point of timeliness of some of these things. But I will let it go to the next question.

Mr. Hanson. I understand. I guess I would like to make the point, Senator, that I guess I saw my decision also as a matter of reliability. For me, reliability means the Commission making decisions that can hold up and are durable over time. This was one that I honestly didn't think was.

Senator Capito. Right. But the staff didn't agree with you at this point, right? The staff had made a recommendation to keep going with these licenses, correct?

Mr. Hanson. Because of the previous Commission decision.

Senator Capito. Right, yes. Thanks.

Senator Carper. All right.

Senator Whitehouse, welcome. Good to see you.

Senator Whitehouse. Thank you, Chairman. And thank you for being here.

First of all, congratulations on the Part 53 instructions. That seems to have received good stakeholder feedback, and the Ranking Member issued supportive comments. That is good.

As you know, I am a strong advocate for the repurposing and reprocessing of our existing nuclear waste stockpiles into productive fuel. I want to make sure, since there is no specific process for reprocessing that as the NRC is looking at its priorities, you keep in mind the really important value to the Country of trying to whittle away at that nuclear waste stockpile.

My concern is that all of this energy and effort that is going into next-gen nuke goes to brand-new nuclear fuels, which if they come in a nickel cheaper than reprocessing can move the entire market toward that and eliminate the opportunity to begin to address the nuclear waste problem in this way. I think that is really important.

It is a weird thing that when you are the United States of America, the liability for that nuclear waste is not on your

books anywhere. If we were the United Corporation of America, that liability would be on our books and would be giving the board a strong economic signal every single year, hey, we have a multi-million dollar liability. Spending a few million to clean it up, a few billion to clean it up.

So without the incentives in the right place and without a specific procedure, how can you reassure me that the reprocessing side of next-gen won't be treated as the orphan side if it ends up being a little bit more expensive?

Mr. Hanson. Senator, thank you for the question. As I think we have discussed, I have a long history on the spent nuclear fuel issue. I really believe that a Country as wealthy and creative and dynamic as the United States should have more than one way of dealing with nuclear waste. I know there is a lot of interest these days in reprocessing.

I can tell you that we are interacting with companies. There are a number of companies that are interested in this area, and they are coming to talk with us. We are working with the Department of Energy about these different technologies. We elected not to pursue a specific rulemaking on reprocessing several years ago. Then of course, not six months later, there was a lot of interest in this again that I think has really picked up since.

We are interacting with companies in this space. We are

keeping track of it. We have companies coming into us on preapplication engagements to talk about their designs, about their technology, about their facility concepts, et cetera. We are really staying on that, so that should somebody come in to us with an application, should one of these things really take off or be the subject of investment by the Department of Energy, we are ready to go on that.

Senator Whitehouse. You get my point that there is significant value to making a success of reprocessing.

Mr. Hanson. I think the NRC shouldn't be the impediment for the folks that want to come up with safe concepts for that.

Senator Whitehouse. The other thing I wanted to talk with you about is the process of refueling, for instance, existing coal plants. There is huge logic to that. You have a community that already supports a utility plant. You have a workforce there, the necessary electricians and engineers and experts. You have the turbines, which will spin in nuke steam just as readily as coal steam, and transformers, and you have the grid centralized.

The DOE is moving forward trying to encourage that kind of investments, our ADVANCE Act specifically encourages that kind of investment. Are you running up against any issues with your processes in making sure that that refueling from coal to nuclear can go forward? Do you need any existing authorities?

Are you involved in that in any way? Do you need to be? What is your role?

I would like to see it expedited. Do you need help to do so, or is it simply not your problem?

Mr. Hanson. I appreciate very much the provision in the ADVANCE Act. I don't know at this time if we need any additional authorities. One of the advantages of a coal site, as you say, is the workforce. We have developed some guidance already about taking folks, the operators at a coal plant, and then kind of an expedited capability based licensing for nuclear, to kind of move those folks over. Oftentimes at coal sites you have something that is very well characterized. I would expect that to help with the environmental assessments if a nuclear plant were to go in in that place.

So I think we are okay at the moment. We would love to see somebody go first and to kind of plow that ground with us and show how we can do that in a number of other places.

Senator Whitehouse. Good. And when that entity does show up to go first, I hope you will treat them with utmost cordiality and dispatch.

Mr. Hanson. Absolutely, Senator. Thank you.

Senator Carper. Thank you for your very thoughtful questions. Very thoughtful .

Senator Ricketts, welcome. Good to see you today. Thanks

for joining us.

Senator Ricketts. Thank you, Chairman Carper.

Senator Carper. This man gets an A+ for attendance. He is the best we have on either side. He shows up as much or more than me.

[Laughter.]

Senator Ricketts. Thank you, Chairman Carper, for doing this important hearing with regard to the Nuclear Regulatory Commission. Nuclear energy is very important to Nebraska. We have our Cooper Nuclear Station that generates 835 megawatts of power that helps supply energy to 385,000 residential homes, even when it is the hottest in the summer. So that is a big part of our energy mix in the State of Nebraska.

In order to ensure that our Cooper Nuclear Station can continue to supply clean, reliable, affordable energy, we need to make sure that we have an expeditious license renewal process. Cooper Nuclear Station has actually begin their process already coming up for the year 2030, I think is when their licenses renew.

In November, Senator Capito and I sent you a letter which requested specific steps that the NRC is taking to ensure that the SLR review and approval process is efficient, timely, predictable and affordable. I wanted to first of all thank you for your timely response back, your letter to our letter. Thank

you for doing that. I in my little over a year being in the U.S. Senate have sent in numerous letters to different government agencies. I have only received a response back on 22 percent. So you are in an elite category there of people who actually respond.

In your December response, you mentioned the road map to restore the license renewal program onto a path of timely and predictable reviews and achieve a goal of 18 month reviews. After looking through a road map published at the end of last month, it is really below the level of ambition that we would expect to be able to get these license renewals expedited. The goal of 15,000 review hours included in the April 15th updates to the road map are closer to what should be the standard for approval.

What are your personal goals for the review timelines from start to finish, hours to process, the amount of applications the NRC is processing, that sort of thing? Can you give us an idea, Chairman, what are you thinking you ought to be doing?

Mr. Hanson. Thank you, Senator Ricketts, for that question. I think underwhelmed is how I would characterize my response. I am not satisfied with what the staff sent us. They sent us an initial iteration that talked about the path to kind of get to 18 months. I understand there is some wonkiness to work out as we get the process going and we get applications.

We probably have 10 or 12 of these in right now. There is always a little bit of a spike at the beginning of the process.

But I think waiting 18 months to get to 18 months is, I think we need to sharpen our pencils in a pretty big way there.

One of the things that the road map didn't address was the number of hours. You mentioned affordability. We got a supplement, I believe Monday, that we have now released publicly on this that again didn't have a specific goal with the number of hours. And I think we should have one.

We did the Clinton, that's a plant in Illinois, license renewal in about 17,000 hours. So about 25 percent of where we were the last time I talked to you. We did a license renewal for a plant in Minnesota that was down to about 14,000 hours. And I think we need to have aggressive but achievable goals in this area.

If I were going to put a thumb in the air, I might cause panic back at our headquarters in Rockville. But I think getting in the range of 14,000 hours sounds about right. If we can do better, even better. But I think given high quality inputs, given appropriate aging management plans, which is really what those license renewals are about, seems like a very achievable goal to me. I am going to be going back to the staff, working with my colleagues to move us in that direction.

Senator Ricketts. I think the last time we had this

conversation I talked a little about process improvement methodologies, like Lean Six Sigma. Can you talk a little bit about, have you made progress in getting more of those put in place, or where are you with that?

Mr. Hanson. Yes, we have. I can get back to you on the details of some of these. But I am pleased that one of the aspects of the road map that came in was kind of a three-step to process improvements. The staff has really gathered the low-hanging fruit on some of that, particularly around project management reforms. They have two more of those to go, and they are going to pursue those. That is another area where we can, I think that is how we are going to get down to that 14,000, 15,000 hour benchmark. I will be watching that closely as well.

Senator Ricketts. All right, great.

Mr. Chairman, if I may beg your indulgence for just one more question?

Senator Carper. Yes, please.

Senator Ricketts. Great, thanks.

One of the things during the Commission's consideration of a proposal for generic EISs, environmental impact statements, you support limiting the revised document to just one renewal period, from 60 to 80 years, instead of making it more broad. A site's environmental impacts are limited by the operation of a nuclear reactor in general. And any new environmental data

would be covered in a required supplemental EIS.

It seems to me this is going to create more work for the NRC staff in future. What was your rationale for limiting the generic EIS to just one renewal period?

Mr. Hanson. One of the rationales was to get the rule out sooner than later. Revising that generic environmental impact statement was to fix a particular legal infirmity with regard to the word initial versus subsequent. So adding the extra term would have required additional analysis and would have delayed that. I thought, again, getting back to reliability and certainty, we needed to fix that issue and get it back out into the world, so that the people who were pursuing license renewals today for that 60 to 80 year period could use it as soon as possible. That was the big thing.

Then the other one was really that we weren't getting any signals from industry about the pursuit of 80 to 100 years, that that issue, both on the environmental side and the safety side should probably be considered down the road and based on specific interactions with licenses as they pursue that.

What I hope we will see is, we have a process to evaluate that generic impact statement every 10 years. As we get signals from the industry about their interest in that, then we can take up that issue, figure out what those impacts are and then move forward.

Senator Ricketts. Great. Thank you very much. I know I am over my time. I appreciate it, Chairman. If we can follow up on the process improvement methodology and how you have been implementing that, that would be great.

Mr. Hanson. Happy to.

Senator Ricketts. Thanks, Mr. Chairman.

Senator Carper. You are welcome. Thanks for those question.

Next, we are joined by Senator Padilla, twice, I think now. Second time is a charm. You will be followed by Senator Lummis.

Senator Padilla. Thank you, Mr. Chairman. I want to start off by thanking you for your remarks about Senator Feinstein earlier in the hearing. As you know, she pulled no punches on issues important to California and Californians and our Nation. I appreciate that acknowledgement.

It is in that same spirit that I ask the following. When you live in California, it is not a matter of if, it is a matter of when we experience another major earthquake. That is why seismic safety was important to Senator Feinstein and is important to me and has always been important to political leaders in our State.

California is home to numerous dangerous fault lines, which can pose significant challenges and threats to the safety of buildings, infrastructure, including critical infrastructure and

our energy infrastructure is no exception, particularly infrastructure that is intended to last decades without severe consequences of these types of challenges. Understandably, there are a lot of communities who have this concern, what is the seismic safety of nuclear power facilities among other things.

My question is this: can you speak to the standards that the Commission uses and the practices that are in place that are used to evaluate and manage seismic risks in nuclear facilities?

Mr. Hanson. Thank you, Senator, for the question. We apply a probabilistic analysis for this that takes into consideration all possible earthquakes in an area, of the magnitudes, the ground motion acceleration, the source to site distances, the depths, et cetera. We take all of that information and combine it.

What we have found is that that probabilistic approach is more defensible kind of compared to the previous deterministic approach, which is to kind of assume one kind of earthquake for a particular site. Because then we are really incorporating the full panoply of information that we have.

What we really want to do is, we want to make sure the plant is protected from a ground motion kind of acceleration frequency, basically of anywhere from 1 to 10,000 to 1 to 100,000 years, which is consistent with our overall approach to

reactor safety, to make sure that the systems and structures and components and the additional equipment that licensees installed after Fukushima is adequate then to address that wide range of seismic scenarios.

Senator Padilla. I think the bottom line question is, can you commit, here publicly and on the record, to upholding the highest standards of seismic safety, to ensure that communities around these facilities are safe in the event of incident?

Mr. Hanson. Absolutely. I would note that, Diablo Canyon, that the plant today is meeting those standards and is operating safely.

Senator Padilla. Speaking of Diablo Canyon, as you know, the Diablo Canyon facility in California is currently undergoing a relicensing process. One of the major issues that has arisen around Diablo Canyon and the continued operation is the possible embrittlement of Unit 1. How does the NRC currently evaluate embrittlement and what is the acceptance criteria?

Mr. Hanson. Thank you for that, Senator. In each reactor, there is insertion of, we call it a coupon, but basically a strip of metal that is made of exactly the same material as the reactor vessel itself. We require licensees to take that strip of metal out occasionally, we cut a piece off and we send it for analysis and testing to basically get an overall sense of what is going on inside the reactor.

And we make sure that coupon is actually placed in a very conservative spot within the reactor itself. That is, it is exposed, in many cases, to more neutrons than probably the reactor vessel itself, in order to bound that analysis. We have prescriptive equations and acceptance criteria within regulation, and we require our licensees to validate that and show how they are meeting those requirements.

So the next coupon withdrawal at Diablo is going to be in the spring of 2025. That will be time then to allow the licensee to look at that coupon, analyze it, and then get that data into our licensing reviews. Currently, based on the last analysis, we fully expected the reactor vessel to meet safety criteria well into the 2030s.

Senator Padilla. Thank you very much. I look forward to working with you to stay on top of this one.

Mr. Hanson. Absolutely.

Senator Padilla. Thank you, Mr. Chair.

Senator Carper. Senator Padilla, thanks for coming. As a former resident of California, I understand full well your concerns, and those oftentimes were shared with us by Diane Feinstein when she was one of our colleagues.

Speaking of one of our colleagues, another one has just passed away, former Governor, former U.S. Senator from Florida, Bob Graham. His death was reported last night. What a

wonderful human being and great leader in Florida, and a great leader here. We celebrate his life, and mourn his passing.

Senator Lummis?

Senator Lummis. Thank you, Mr. Chairman. Thank you for stopping by and visiting with the kids from Cheyenne South High School yesterday. They loved meeting you.

Senator Carper. Was that fun or what?

Senator Lummis. It was great fun. I really appreciate it.

Senator Carper. They were probably pretty amazed to see that Democrats and Republicans actually like each other.

Senator Lummis. It was very cool. Your bury the hatchet story was awesome.

Senator Carper. Thank you. In some States, in New Jersey, they would say breaking the back of the neck of their opponents. In Delaware, we actually do bury the hatchet in a civil kind of way.

[Laughter.]

Senator Lummis. In sand, which is far less messy.

Thanks, Chairman Hanson. Thanks for coming in yesterday as well to meet with me.

I mentioned that I would probably be following up with you today about Wyoming's uranium and the need to remediate other abandoned uranium sites in Wyoming and elsewhere. I think this needs to be done in a timely manner, and the latest technologies

that will require forward thinking at the NRC. It is just going to be necessary to approve them.

I know you mentioned yesterday that you would like to find ways to accommodate innovative solutions. But I want to visit again with you about high pressure slurry ablation. This option is really not new to you. The Commission has had 10 months to evaluate the vote notation paper and the technology was something you were aware of before that. So it is really not a novel approach anymore.

I am trying to understand further the hesitation at the NRC. The EPA evaluated the technology and the Navajo Nation, joined by the Governors of Arizona and New Mexico, are eager to move forward with addressing abandoned uranium mines. My Senate colleagues from Wyoming, Arizona, Utah and West Virginia joined in my letter to you last month. Our response was a little bit like gee, got your letter, cream of wheat, compared to a nice breakfast taco.

In our meeting, you mentioned a study involving that technology that showed different results at different sites. So if you are referring to the USEPA treatability study, I want to raise some of their conclusions. Waste rock material, treated with the ablation technology, had up to a 98 percent reduction in the concentration of uranium and up to a 93.5 reduction in the concentration of radium 226.

On average, ablation was able to remove over 90 percent of the uranium and radium 226 contaminants from numerous sites and samples tested. Treated materials met water quality standards, so materials could be disposed of on site without concerns for surface water and groundwater.

So these success rates above 90 percent sound to me like really welcome outcomes, even if they might differ a little bit by location. It would be a huge improvement over the existing condition on the ground.

So a couple of questions. First, do you agree that the cleanup of abandoned uranium mines is an urgent environmental priority?

Mr. Hanson. Yes, Senator.

Senator Lummis. Can you offer me any assurances today that the Commission will prioritize a pathway for adopting an EPA validated remediation technology for AUM cleanup?

Mr. Hanson. We will prioritize this. This has been a subject of ongoing conversation within the Commission and I remain committed to working with my colleagues to reach a resolution here.

As I said yesterday, I don't want us to be the impediment to the implementation of a technology that clearly has an environmental benefit, particularly for Native American communities. We have to figure out how to do that under the

existing provisions of the law, and we talked yesterday about kind of a case by case or a site specific solution versus a device solution.

I want to mention the conversations that we are having with the Environmental Protection Agency and the potential application of this technology under the Superfund law.

Senator Lummis. I want to just say, that makes me a little nervous. That just seems like a good way to stall. That is a great tool for kicking the can down the road.

I want to call your attention to, again, Option 2(b). I think that is the best option. I hope you will give it your thorough and diligent review and consideration. May I once again ask you to revisit Option 2(b) and just give it a thorough ablation?

[Laughter.]

Mr. Hanson. I promise to take a close look at it, Senator. I am hoping we can find a specific approach to this to move forward, maybe as a pilot project in some way, rather than potentially a universal solution. I understand and appreciate your concerns on this.

Senator Lummis. I really feel like sometimes the perfect is the enemy of the good here. A solution that gives you a 90 percent remediation rate over where we are now is a really good solution in my opinion.

Mr. Chairman, I have another question, but I am out of time.

Senator Carper. Go ahead. Just briefly if you will.

Senator Lummis. Okay, thanks. This is with regard to microreactor technology and Wyoming trona. As we talked about in our meeting, we are interested in the BWXT critical work to produce fuel in reactor cores for the U.S. Navy. Does the NRC have the ability to license a single design once and not have to go back to the beginning of the review process each time that reactor design is going to be deployed, even if it is just a few miles away?

Mr. Hanson. We have regulations for that where you can get a design kind of preapproved, and then apply for a license basically for site-specific types of issues and operations. So you can have preapproved designs and then deploy that in multiple places under our regulations today.

Senator Lummis. I know I am out of time, Mr. Chairman. I may want to submit some mor questions for the record that are specific to microreactor technologies and Wyoming trona.

I really do appreciate the time we had together yesterday and again today. Thank you, Mr. Hanson, and thanks, Mr. Chairman.

Senator Carper. Just make sure that when you receive those questions for the record that you respond in a timely way.

Mr. Hanson. Of course.

Senator Carper. Thanks. Our next Senator is a Senator who knows a thing or two about nuclear energy. I am delighted he is a member of this committee. Senator Kelly, you are recognized.

Senator Kelly. Thank you, Mr. Chairman. Mr. Hanson, I want to follow up on Senator Lummis' questions about abandoned uranium mines and the high pressure slurry ablation option for cleanup. She highlighted how this produces upwards of 90 percent removal of hazardous waste at sites. We have 500 abandoned uranium mines in Arizona on the Navajo Nation that have waited and waited and waited to be cleaned up. The health effects to the Navajo people are substantial.

You mentioned that you want to reach a resolution on this, that this clearly has an environmental benefit. You want to do it under existing provisions of the law. Senator Lummis referenced Option 2(b), which is licensing the technology.

Mr. Hanson, what progress has the NRC made specifically in licensing the technology? What are the steps to get it licensed? How many steps have been completed? What remains to be done?

Mr. Hanson. Thank you, Senator. This license, this technology could be licensed today under our existing regulations, but we don't have an application in front of us from a company for this. The paper that is in front of us is

about the overall approach to how we might do this forward and the options that the staff has provided us, you mentioned Option 2(b), which is really technology specific, where we license the technology and then allow it to be deployed in multiple locations.

The staff's recommendation on that was, because of, even with the significant environmental reduction in harm that you and Senator Lummis mentioned that there is still a need to go back and double check that on the site and monitor that. That is kind of how that case by case basis would be. Yet that is potentially, we would want to figure out for the serial application at multiple sites of this how to kind of figure out and do that efficiently.

So in light of that, the EPA feasibility report was very helpful. We knew that was coming, and I think a number of us on the Commission were saying, okay, well, let's kind of see where that comes in. There were some differences, you are right, and often cases, Senator Lummis, you are absolutely correct, that there were reductions in the radioactive constituents there. Yet there were also some differential outcomes about whether or not it met the residential radiation standard, which the Navajo Nation, Navajo EPA adhere to.

If I could, Chairman Carper pointed out, I led the Commission in holding the first Commission meeting outside of

Washington, D.C. in over 40 years. We did that on the Navajo Nation, and we visited with their Red Water Pond community and I held a public meeting in Gallup. I heard firsthand and got to see firsthand the environmental legacy of these over 500 uranium mine and mill tailing sites. I do not want the agency to be an impediment to the timely application of this.

That is why we are working through this paper and we are working with the Environmental Protection Agency to figure out, hey, can we do a pilot project here in partnership with the Navajo to test out the technology, test out our regulations, develop the efficiency around this, et cetera, so that we can move forward.

Senator Kelly. If the company submitted an application for a license, how long do you think it would take to be approved?

Mr. Hanson. I would have to get back to you on the record on that. I really would hesitate, I find our regulations in this area pretty efficient. I think we would just want to know, again, follow up on the how are we going to verify on a site by site basis that we are achieving the results that are intended through that technology.

Senator Kelly. If you did a pilot program with this technology, any sense for how long it would take to get to a point where you could make a decision to expand the pilot program across the mines that require cleanup in the States of

Arizona and Wyoming?

Mr. Hanson. I would hesitate to speculate on that at the moment. But I would be happy to go back and ask the NRC staff and consult with EPA about something like that. Hopefully I can provide you a clearer answer for the record.

Senator Kelly. Could you get an answer? We could probably make a request or communicate that to the company to say, hey, if you submit an application, we might get it licensed. You start with a pilot program at one mine, and we will see what the results are and then expand it.

Mr. Hanson. If I could, Senator, I think one of the benefits of something like that, of an approach where it is selected as the remedial technology under the Superfund law is that EPA would be overseeing that and would be making sure at those individual sites on the Navajo Nation that the technology was working as intended. That is why I think that conversation that is just getting started between the NRC and EPA is so important.

Senator Kelly. Thank you. Thank you, Mr. Chairman.

Senator Carper. Thanks so much. Thanks for those questions and for being here today.

I am going to start a second round of questions and be followed by Senator Capito. I had the privilege of joining her in support of legislation called the ADVANCE Act, as you know,

and others of our colleagues, Senator Whitehouse has been very much involved in that as well. I want to say thanks to our staffs, both on the Democratic and Republican side, on this, the progress that has been made.

I want to ask, the legislation supports the NRC in a variety of ways, by among other things providing needed support and direction to improve the agency's readiness for advanced reactor licensing.

Would you take a couple of minutes for us today to share your thoughts on the ADVANCE Act? Are there provisions in the bill that you think are especially helpful to the work of the NRC? Are there some provisions that are unhelpful to the work of the NRC? We won't be offended if you say there are. We look forward to your just being candid with us. Go ahead.

Mr. Hanson. Mr. Chairman, thank you for the question, and thank you for your leadership and Senator Capito for her leadership, Senator Whitehouse and others, who have really come together and put together what I think is a very beneficial piece of legislation that could be very beneficial to the agency going forward.

I will start with the provisions with regard to our ability to recruit and retain talent. The nuclear workforce, there is a huge amount of competition for talent in the nuclear space right now. The NRC is in the middle of that. Having things like

expanded direct hire authority and the ability to pay folks a little bit more and get some flexibility on compensation is absolutely critical.

I go out and I sell the mission, the importance of the mission, the importance of public service, of serving your country in this really important way in this important time. But having these tools behind the scenes when we try to bring people in the door is absolutely critical. I very much appreciate that.

I also want to express appreciation for the flexibility around some of the budget issues, reclassifying some of the costs that we have, whether it is in the Commission or whether some of the real estate costs and other kinds of things that we have will, I think, help streamline and improve the reliability, I hope, and the predictability of our budget going forward.

As I mentioned to Senate Whitehouse, the coal-to-nuclear, the Brownfields Site provision I think is also important and very helpful. Like I said, I would really like to get an application in the door to prove out how we can do that in an efficient and timely way while upholding our standards for one of these sites.

I will just mention two more, if I could. The Foreign Ownership Control and Domination provision and the potential for investment on the part of our allies in the United States in

this sector, I think we have seen since the invasion of Ukraine the importance of like-minded nations coming together around all parts of the fuel cycle to work together. Various nations have strengths in various areas, whether it is enrichment or fuel fabrication or reactor technology or whatever.

But these nations working together to replace and compete against Russia in this space I think is more critical than ever. I think the FOCD provisions in that law could play an important role.

Finally, just the recognition of our international efforts within the agency. I saw that as an exclamation point on the good work that our folks in the Office of International Programs are already doing, and I appreciate it very much.

Senator Carper. Thanks for that response.

Senator Capito has rejoined us. I am going to yield to her and once she asked whatever questions she has in mind, I will ask a couple more questions. I think Senator Markey may be joining us as well. There are a lot of committees meeting today. I am very pleased by the attendance, but people are coming and going, as you can tell.

Senator Capito?

Senator Capito. Thank you. Good to be back. Sorry for my absence there.

I am going to kind of read a statement. I just want to get

your commitment that I have this right. It is sort of dealing with some of the things you said previously when I was out of the room.

In response to direction from the Commission, last week the NRC staff released a road map to improve the NRC's review of subsequent license renewal applications. The road map's goal with respect to timeliness, cost, and number of applications in review are insufficient.

I would like a commitment from you, Chair Hanson, that you will direct the staff, utilizing the chairman's authority to directly supervise the staff, to update the road map to achieve an 18 month review schedule, with 14,000 staff hours to complete the review and capacity to review up to 12 applications at a time. Staff should be prepared to achieve these goals by the end of this calendar year.

Is that basically what you said to, I think Senator Ricketts' questioning?

Mr. Hanson. I don't know about the 12 applications at a time, Senator. I am not trying to walk that back, I just want to understand from the staff better what their actual capacity is and what a reasonable stretch goal would be in that area. I want them to understand better that the road map needs, that I am not satisfied with the road map and that we need to do better.

Certainly I did say 14,000 hours. Again, that seems like a reasonable goal to me. I think that is something we should shoot for.

And again, getting to 18 months before 18 months is also something that I think we should, and that I will be engaging with the staff directly on.

Senator Capito. Thank you. Just a quick question on the mandatory hearing. You mentioned this in my statement, we talked about it in my office. It adds about six months to the review and millions of dollars to regulatory costs.

Previous Commissions have requested that Congress remove this requirement. Yesterday, the Commission released a memo drafted by your general counsel at your request that identified options to administratively streamline this mandatory hearing.

Do you agree that even with administrative changes to streamline the process the mandatory hearing is still statutorily required and Congress would need to eliminate that requirement from the law? Do you agree with previous Commissions' recommendations to do that?

Mr. Hanson. Yes, ma'am. The requirement in the Atomic Energy Act still stands. We have had flexibilities on this. The process that we have used for a long time was really about large light water reactors that were, all of which, as we know in this Country, turned out to be pretty unique. I think given

the serial deployment and the standardized designs that we are going to see, we have an opportunity really reform that process. Maintain the public communication portions, but really streamline that.

Senator Capito. Yes, I don't interpret that as an effort to eliminate any public hearings or public communications. So that is not the interpretation I would have.

I have two minutes left. I would say, if we are sitting here five years from now and you could say that you had achieved two things in the five years that you really wanted to achieve as a re-nominated and re-confirmed chair, what would those two things be?

Mr. Hanson. I would say repeatability on licensing reviews for new technologies to show again and again that we can take these new technologies and we can tackle them, we can evaluate the safety and get back to our licensees very expeditiously. I think that would be the first one.

The second would be closely aligned to it, and I think that is making progress on microreactors in the agency as well, and charting the path for that. Again, these are things that could potentially come out of factories. Being able to either license the factory itself as well as potentially check the thing that is coming out of that factory I think is going to be really important.

Senator Lummis, of course, is interested in trona mining, but in it for a lot of other locations as well, oil and gas production, et cetera. I think proving that out, working with the Congress on any changes that we need to make that happen to the Atomic Energy Act I think will also be really important.

Senator Capito. The other thing I would say, and thank you for those, one thing that is repeatedly coming into the mix is not right, it is not your regulatory responsibility, but it does weigh into the timeliness of being able to move forward, is permitting. The length of time, the money, the people that walk away from trying to get things permitted, no matter what type of energy production it is, is really slowing us down. I would hope we can use your expertise and work together to try to figure out the best way, we have been talking, the Chairman and I have, to make some strides in the permitting process.

Thank you very much for coming. Thank all of you for being here.

Mr. Hanson. Thank you.

Senator Carper. Thank you, Senator Capito.

Maybe my last question, I have at least one more question, dealing with public trust and transparency. We have already talked a little about that. I want to focus on it a bit more, if we could. Building and maintaining public trust is at the core of the NRC's mission to ensure that the benefits of nuclear

technology are used safely. This trust is especially important for communities who host operating or decommissioning nuclear power plants, spent nuclear fuel and other nuclear materials.

Also because much of the NRC's work is highly technical, it can oftentimes be inaccessible to members of the public seeking to better understand the agency's decision. My question is, will you please take a minute or two to describe for us how you work, how you and your colleagues work, to maintain or increase public confidence and transparency in the NRC's decision making and regulatory processes?

Mr. Hanson. Thank you, Senator. I agree, this is absolutely critical to our mission. If we for whatever reason lose the public's trust, we aren't fulfilling our mission. Not only trust, but also the confidence. A key part of that is explaining in plain language how we do our work and how and why we reach our conclusions.

We communicate a lot; we hold almost all of our meetings with licensees and on licensing matters out and open to the public. In fact, there is a big public meeting tonight about the Palisades plant and the effort to bring that back, with over, I think, 300 people registered at this point, where we are going to be outlining our processes. I continue to direct and encourage the NRC staff in this regard.

I remember being up at Indian Point outside New York City

and that decommissioning reactor a few years ago. I had the opportunity to meet with representatives from the State of New York and others. They said, well, we have a decommissioning oversight board meeting coming up. Do you think you could come and participate? I said, yes, why wouldn't we, of course we will.

Since then, we have been to at least half a dozen of those. And that was probably 18 months or more. I was absolutely happy to commit to things like that. I think it is critically important, where we are out in the community and explaining in plain terms our rules, our standards, and how we are upholding those.

So I continue to be focused on this. I try to make myself available to community groups and external stakeholders whenever I can.

Senator Carper. All right.

Senator Markey is trying to join us. I am going to ask one other question until he arrives. The question is, sometimes I ask this if we have time in a hearing, I like this question. Is there a question you wish you had been asked that you have not been asked? If there is, what would that question be?

Mr. Hanson. Perhaps about our international work.

Senator Carper. Go ahead.

Mr. Hanson. And the importance of that on the world stage,

for longstanding partners as well as emerging nations. One of the greatest honors and privileges of this position, Senator, and if confirmed, I sincerely hope to continue, is to represent the Country with my regulatory counterparts around the world. There are numerous countries who want to work with the United States and who are pursuing nuclear energy for the first time for national security, economic security, economic development, human health, et cetera.

It is to go and work with those nations in places like Poland the Philippines and Romania and others, and not just talk about the technical work that we have done, about a particular technology, but talk about our overall approach, about the transparency, how we engage the public, the importance of an independent regulatory body outside of the policy apparatus in a particular country. It is really one of many, many rewarding aspects of our position, of my position and the work of the Commission.

Senator Carper. That is good. I will ask you one more quick question. I think it was Mark Twain who used to say that the most important days of our life are one, the day we are born, and two, the day we figure out why. When did you figure out this was why, at least in part, you were born?

Mr. Hanson. This role? I don't know if I was born for it or not, Senator. Hopefully, I have earned it over time, and

hopefully, I continue to earn the trust and respect of the incredibly dedicated public servants at the NRC as well as the American people.

Senator Carper. Thank you.

Senator Markey, we are delighted to see you.

Senator Markey. I was born and then I figured out why. It was to be the centerfielder for the Red Sox. Then I needed a backup plan after Dickie Timmons [phonetically] could throw a fastball 87 miles an hour. So I had a backup plan, and that is what this is.

Ultimately, maybe I can become major league commissioner, baseball commissioner. It could still come out.

Chairman Hanson, the House passed a nuclear energy package known as the Atomic Energy Advancement Act, which would alter the mission of the NRC to promote nuclear energy in the United States and would promote the export of emerging nuclear technology. That bill passed the House. To have our Nation's nuclear safety expert take on a second job as a promoter for nuclear technologies would be like having the EPA moonlight as a chemical distributor. You can't focus on safety if you are also focused on sales.

Again, that is why the Nuclear Regulatory Commission was created, to break it off from the Atomic Energy Commission, which was a promotor and a regulator. It was to set up a

separate agency which would just focus on the regulation of these plants to make sure they are safe in the communities in which they are in. That is when I joined the committee, 48 years ago, the Nuclear Committee. It was right after the NRC was created for that purpose.

Chairman Hanson, do you agree that the mission and duty of the Nuclear Regulatory Commission is to act as a regulator, not as a facilitator of nuclear energy in this Country and around the world?

Mr. Hanson. Senator, it is our job to act as a regulator. One of the messages, there has been a lot of conversation in both the House and Senate and other places about the mission of the NRC. What I really take away from that is I think Congress wants us to feel the urgency of the moment. It might be fair to say that they don't want us to inhibit the safe and secure use of nuclear power. We have gotten that message.

But again, the emphasis there in terms of our standards is on the safe and secure use. We have to make those decisions.

Senator Markey. You agree that safety standards can't change, so that it is easier to promote sales of the power plants.

Mr. Hanson. I don't think we should change our standards for the sake of promoting sales. I think we need to revisit our standards on occasion to make sure that we are focusing on the

most safety significant things.

Senator Markey. Okay. The Nuclear Regulatory Commission staff recently sent you their final rule on decommissioning. This draft final rule comes nearly 10 years since the Commission first voted to initiate it. It is critical that we have the strongest necessary safeguards and security guardrails for the decommissioning process. Just because the risks are lower than operating facilities doesn't mean there are no risks at all.

I am very worried that this rule which regulates by rubber stamping requests to be exempted from the NRC's rules by operating plants doesn't consider how safety considerations might be altered, not ended, during decommissioning.

Chairman Hanson, do you agree that radiological risks continue to exist after a nuclear facility begins to decommission?

Mr. Hanson. They do exist, but at a much lower level than an operating reactor.

Senator Markey. But they do exist?

Mr. Hanson. They do exist.

Senator Markey. And they do have to continually be monitored by the NRC to make sure those risks do not spread into those communities that surround a nuclear power plant as it is being decommissioned?

Mr. Hanson. That is right. They do continue to need to be

monitored, and we need to make sure that the decommissioning facilities are meeting our standards.

Senator Markey. So, Chairman Hanson, does the decommissioning rule address FEMA's concerns that it phases out radiological emergency planning before all spent fuel is stored in dry casks?

Mr. Hanson. I would have to get back to you for the record. I am not 100 percent sure of FEMA's specific concern on this. I know we have had a number of interactions and engagements with them on this. It has been a longstanding practice of the NRC to allow for the exemption from the emergency planning zone prior to the removal of all the spent fuel from the pool because of the significantly reduced radiological risk.

Senator Markey. Yes, so we need that response back in writing to my office, to the committee, just balancing FEMA's concerns against NRC's actions.

Then, plants, Mr. Chairman, shouldn't be able to walk away from safety planning after benefiting from community support for years, and communities have a right to know how their health and safety could be affected during the decommissioning process. The decommissioning of Plymouth's Pilgrim Nuclear Power Plant serves as a strong example. Community members have been repeatedly blindsided by Holtec's plans to release radioactive

water from Pilgrim's spent fuel pools into Cape Cod Bay or to evaporate that radioactive water into the air above their homes.

As written, the final rule does not include approval of licensees post-shutdown decommissioning activities, reports which would prompt meaningful public engagement and new environmental reviews, before the decommissioning process, giving communities an opportunity to weigh in.

Chairman Hanson, do you believe that the NRC can do better in its efforts to enable public engagement before enduring decommissioning process?

Mr. Hanson. Senator, I spoke to the Chairman about how important it is for the NRC to be out and engage with the public regularly and in plain language about our standards and our processes, and how we are monitoring and holding licensees accountable.

Senator Markey. Yes. We need transparency, Mr. Chairman, we need the public to be able to understand what is happening in their communities with regard especially to those already existing power plants. This month, Mr. Chairman, the Government Accountability Office released a report on how the Nuclear Regulatory Commission is failing to address climate-fueled risks to nuclear facilities.

The threat is clear. All 75 operating and shut down U.S. nuclear power plants will face climate-fueled heat, drought, or

wildfire risks. Nearly two-thirds of plants are located in areas with exposure to Category 4 and Category 5 hurricane storm surge or high flood hazard.

As we saw over 10 years in Fukushima, extreme weather events can wreak havoc and devastation on communities surrounding nuclear facilities. Addressing climate risks before they become reality can save countless lives.

Chairman Hanson, do you agree that the Nuclear Regulatory Commission licensing and oversight processes should consider the threat of climate change fueled extreme weather on nuclear facilities?

Mr. Hanson. Senator, a couple of things. First of all, the existing fleet of nuclear reactors, everywhere in the United States, are operating safely. They are incredibly resilient to natural hazards, including severe storm events, seismic events, et cetera. We do consider climate change impacts. We have a way of assessing and incorporating information about natural hazards on an ongoing basis. We certainly agreed, up front, with the GAO recommendation that we can evaluate how we are incorporating climate change modeling and projections into our licensing processes.

But I can tell you that the natural hazards that are out there and at least in the foreseeable future are being incorporated into plant design bases, and those plants are

operating safely and within that bases.

Senator Markey. Okay, well, again, the public is very concerned about these climate-related issues. A lot of them are built along rivers, on oceans, to use that water as the basis for cooling the plant.

I would just say that we are heading into a catastrophic period of time right now in terms of the climate change impacts near these nuclear power plants. So I guess what I would say, and this just follows up on your earlier answer --

Senator Carper. Senator Markey, I need to leave and go vote at another committee. Go right ahead.

Senator Markey. Just a few seconds. This communication can't be one-sided. It just can't be the NRC telling communities. It should also listen to communities and respond to communities' concerns as well. That is in response to my last question but also this one as well. People are asking legitimate questions.

We are in the process of hardening down the seaport of Boston against climate change. What is the plan for nuclear power plants?

Thank you, Mr. Chairman, and I have a question on radioactive waste burial that I would ask for you to respond to in writing.

Senator Carper. Thanks so much for joining us today.

In closing, I want to thank you, Chairman Hanson, for appearing before us today, to remind us all that the NRC is a vitally important agency in our fight to reduce greenhouse gas emissions and to help maintain the reliability of the grid. To Senator Markey's point about the threat that climate change poses to our nuclear power plants, there is a nuclear power plant, two of them, actually, on the other side of the Delaware River not far from where I live, my family and I live. Actually, with sea level rise, there is great awareness and concern relating to that.

We are depending on the NRC to ensure that the continued development and use of nuclear power is safe and secure. The NRC needs strong leadership, and I have confidence that you can provide the agency that kind of leadership during this challenging time.

We thank you for your testimony today. We look forward to the committee's consideration of your nomination in the closing weeks.

Before we adjourn, some housekeeping. First, I want to ask unanimous consent to submit into the record a variety of materials relating to today's hearing, including several letters of support for Chairman Hanson's nomination. Without objection, so ordered.

[The referenced information follows:]

Senator Carper. Finally, Senators will be allowed to submit written question for the record through the close of business on Monday, April 22nd. We will compile those questions and send them to our witnesses. We would ask that you reply by Monday, April 29th.

With that, I want to close with one last thought. The late Bob Graham, Senator Bob Graham, a U.S. Senator, governor, and Senator Capito, you are the daughter of a governor from West Virginia, but when I was a governor running for the U.S. Senate, Senator Graham was telling me, he was nice enough to host a fundraiser for me. I remember talking with him when I was down there with him, and I said to him, you have been a governor, you have been a Senator, which of the jobs do you most appreciate? As you might imagine, people love being governor. Being a Senator is great, it is a great privilege to serve in the Senate, but people love being governors of their States.

When I asked him which he preferred, he said, oh, I loved being governor probably the most. He said, folks will tell you who serve in both the Senate and as governors, they tell you that they prefer being in the Senate, he said, they will lie about other things, too.

[Laughter.]

Senator Carper. Which I thought was just a great line. I have never forgotten it.

This has been a good hearing, an important hearing for all of us, for our Country, for our planet. Convey our thanks to your family very much for sharing you with us. Our thanks to the team that you lead, you and the commissioners lead at the NRC. We are grateful for all of your services.

With that, this hearing is adjourned.

[Whereupon, at 11:46 a.m., the hearing was adjourned.]