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Committee on Environment
and Public Works

Washington, D.C.

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HEARING ON THE NOMINATIONS OF ANNIE CAPUTO AND BRADLEY R.
CROWELL TO BE COMMISSIONER OF THE NUCLEAR REGULATORY COMMISSION

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The committee, met, pursuant to notice, at 10:01 a.m. in room 406, Dirksen Senate Office Building, the Honorable Thomas R. Carper [chairman of the committee] presiding.

Present: Senators Carper, Capito, Cardin, Whitehouse, Markey, Kelly, Inhofe, Lummis, Boozman, Ernst.

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

Senator Carper. Good morning, everyone. Good morning, Senator. How are you? I am pleased to call this hearing to order.

We are here today to consider two important nominations to the U.S. Nuclear Regulatory Commission, Annie Caputo and Brad Crowell. I will start by welcoming each of you, along with Senator Cortez Masto, before our committee. We look forward to hearing your introduction, and later, your testimony. Senator Inhofe is going to introduce Annie, I think not for the first time.

Before we do all that, let me say a few words about each of our nominees, as well as about the important role a well-functioning Nuclear Regulatory Commission has in ensuring we continue to safely and reliably power our Nation into the future.

As a Nation and as a planet, we are at a critical point when it comes to reducing our addiction to fossil fuels. Just last week, the National Oceanic and Atmospheric Administration, affectionately known as NOAA, announced that Earth's atmosphere surpassed another historic, alarming milestone. They reported that the carbon dioxide in our atmosphere is now more than 50 percent higher than in preindustrial times, a level not seen in

millions of years. That is right, millions of years. We should find these figures alarming, especially as scientists continue to warn of the future that awaits us if we fail to act promptly.

The good news, there is some good news. The technology required to transition our economy toward a cleaner energy future already exists. That includes nuclear power, which currently provides over half of all carbon-free energy in the United States.

I have just come from a meeting of a number of the veteran's organizations that are in town because of the legislations before the Senate today. I reminded them that the United States Navy, where I served 23 years plus 4 years as a midshipman, the United States Navy has been using nuclear power for 70 years. I always ask people who have discomfort about nuclear power because of the safety of nuclear power, I ask them how many people in the United States Navy have died because of their exposure to nuclear energy in the ships or submarines or aircraft carriers. The answer is zero. Done right, this can be not only good for our climate, but good for providing power for all of us.

In addition to being our largest source of reliable, clean energy, nuclear energy also generates economic opportunities across our Country. As I said during our oversight hearing in December with Chairman Hanson, Commissioner Baran, and

Commissioner Wright, nuclear energy is key to reaching our climate goals economy-wide. The Nuclear Regulatory Commission is critical to ensuring that our nuclear energy is both safe and reliable.

For the NRC to effectively maintain the safety of our Nation's nuclear facilities and also prepare for the future, we must ensure that the agency has the resources that it needs. That includes having the right leadership in place. Currently, two of five seats on the Commission are, as my colleagues know, vacant.

Fortunately, in Annie Caputo and Brad Crowell, President Biden has nominated two well-qualified individuals to serve on the NRC. From my conversations with each of them, I believe that they possess both the knowledge and the experience to successfully and faithfully serve the American people in these roles.

Ms. Caputo and Mr. Crowell have strong professional backgrounds. Both of them have worked for members of this Committee who are passionately engaged on nuclear issues. Importantly, both of them have also demonstrated an ability to work collaboratively with members of both parties and with a wide range of stakeholders to achieve progress and to get results.

Ms. Caputo recently served as an NRC Commissioner for a

three-year term that expired in June of last year. Since that time, Ms. Caputo served as a professional staff member on the U.S. Armed Services Committee, and she has consulted with the Idaho National Laboratory regarding international collaboration and advanced nuclear reactors.

Prior to her term at the NRC, Ms. Caputo served as a professional staff member and senior policy advisor for this Committee under the leadership of former Chairmen Jim Inhofe and Senator Barrasso. With the wide array of issues before the Commission, I believe that the NRC will benefit from Ms. Caputo's broad knowledge and expertise.

Mr. Crowell, meanwhile, has over 20 years of experience at the State and federal levels of government working on clean energy and on nuclear power. He served as the Director of Nevada's Department of Conservation and Natural Resources under both Republican and Democratic governors. His experience also includes time at the Department of Energy handling Congressional affairs during the Obama Administration and serving as a policy advisor for Senator Whitehouse on our Committee.

Mr. Crowell understands the importance of engagement among the Federal Government and States, tribal, and local governments, as well as the public, a key part of effectively communicating the benefits of nuclear energy to those who might otherwise be skeptical of it.

As I mentioned, a full slate of commissioners will help the NRC carry out its responsibilities more effectively and more efficiently. That is why I hope to work with our Ranking Member, Senator Capito, to move both nominees through the confirmation process together and to do so expeditiously.

With that, let me turn to our Ranking Member, Senator Capito, for any comments she would like to make. 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. Thank you, and good morning. It is nice to be here at today's hearing. As the Chairman has said, we will hear from two individuals, Annie Caputo and Bradley Crowell, who have been nominated to serve on the NRC. For more than 11 months, the NRC has only had three members.

Welcome, Annie, back to the Environment and Public Works Committee, where I first met her. She worked as a Congressional staffer for 13 years, including two separate stints with this committee, and that included assisting me when I was Chairman of the Subcommittee on Air and Nuclear Safety. We actually visited a nuclear site.

I also welcome Bradley Crowell, a former staffer of Senator Whitehouse and fully capable for this position.

If confirmed, they will join this NRC at a very critical time. A vast portion of the Country faces potential electric shortages this summer, making it clear that we need reliable baseload electric generation. Energy prices are driving inflation.

Internationally, three months after Putin's attack on Ukraine, our European allies are still struggling to reduce reliance on Russian oil and gas. Russia has been working for decades to try to subordinate other countries to its nuclear

industry as well.

As recent events have underscored, energy security is inseparable from our national security. Nuclear power plants provide America with reliable and affordable zero-emission energy, a point the Chairman made as well. In fact, nuclear accounts for about half of our emissions-free energy, providing 20 percent of America's power. Today's nuclear reactors are operating at historically high levels of safety and performance.

Despite this record, some States have decided to shut down nuclear plants for political purposes. For example, California has required its last nuclear power plants to close by 2025. Those two reactors provide 8 percent of the entire State's electricity production, and they are by far the largest source of emissions-free energy in that State.

Facing energy shortages, skyrocketing energy costs, and reliability challenges, Governor Newsom is now reconsidering that decision to shutter that site.

Continued operation of today's reactors and development of the designs of the future are needed to help reduce carbon dioxide emissions and ensure continued American leadership in this essential national security and energy sector. Securing this future requires an effective and efficient nuclear safety regulator. As enshrined in the Nuclear Regulatory Commission's Principles of Good Regulation, maintaining clear and reliable

rules is vital to keeping reactors open and operating safely and efficiently.

Nuclear utilities cannot make long-term investment decisions when the NRC arbitrarily reverses settled regulatory matters. However, in February, the Commission did just that when it decided to change previously issued license extensions. The Commission must also establish policies that prioritize resources toward the most important safety issues. I have asked the Commission to update its regulations to do so.

In addition to policies to preserve the operating reactors, critical decisions will be made in the next four years during our nominee's terms about how new nuclear technologies are licensed, regulated, and operated.

Other countries are looking to us. They are looking to the United States to see if advanced nuclear is part of our future energy policy, and if we can be relied upon to partner with them on their nuclear projects.

Our adversaries, namely Russia and China, are betting on our failure. If America does not rise to this challenge, it will make it easier for our adversaries to sell their reactors, fuel, and nuclear services around the globe. They will be able to establish strategic energy relationships or dependencies that could last for 100 years or more. In the past, Russia pursued this strategy with Ukraine.

U.S. businesses are now stepping up to help Ukraine replace Russian nuclear fuel and build new reactors. American companies are seeking to develop and deploy advanced technologies in this country. Those companies are looking to the NRC to determine if the agency can establish the safety rules to enable the safe use of nuclear.

In addition to setting predictable and viable regulations, the commissioners need to oversee and empower the NRC staff to review and approve applications to build new nuclear plants.

Earlier this year, I am proud to say, the West Virginia State Legislature voted to allow new nuclear development in our State. The NRC is central to the future of nuclear energy in West Virginia, across the Country, and around the world.

I look forward to hearing from both nominees. Also, I know that Senator Inhofe is going to introduce Annie, but I want to welcome her husband, A.J., her son Owen, and her daughter Abby to the hearing today.

Thank you.

[The prepared statement of Senator Capito follows:]

Senator Carper. Senator Capito, thanks so much.

Let me yield at this time to Senator Inhofe, who has known one of our nominees for a long, long time.

Senator Inhofe. Thank you, Mr. Chairman.

Yes, I think I win the prize for having introduced our star today more than anybody else has, but not with all of her family here and present. I thank both of you for the opportunity for me to introduce Annie once more to this committee.

Annie is no stranger to the committee, everyone is aware of that, or to the NRC. She served on my staff for many years and previously served as an NRC Commissioner from 2018 to 2021.

I have noticed, Annie, that you have your husband, A.J., as has already been mentioned, someone we have known for a long period of time, and your son Owen, who is 17, and your daughter Abby. Now, this is very important, because I was here when Abby was born 13 years ago. She is even more beautiful today than she was then.

Let me say, I remember the whole family, and Annie joined my EPW staff in 2007 and served for a short period of time on my Senate Armed Services staff in the past year. No one questions Annie's knowledge or expertise on the issues.

It is always interesting to me when you have a meeting such as this, where the idea is to sell the individual to the members of this committee, when she is, without question, one of the

most, the really great experts in this subject area. As we have said before, when I was Chairman, invaluable to me in the aftermath of the Fukushima nuclear accident, as well as in my work to ensure that NRC issued timely decisions on new nuclear plant licenses and in developing the bipartisan Nuclear Innovation and Modernization Act.

So I enjoy having you back again so I can learn a little bit more. Thank you, Mr. Chairman.

Senator Carper. You are welcome. I think I have been here in this room with you, Senator Inhofe, every time you have introduced our nominee.

Senator Inhofe. I have changed it a little bit each time.

[Laughter.]

Senator Carper. That may have been the best introduction so far. That is great.

Next, we are joined by Senator Cortez Masto, who is going to introduce for us Brad Crowell. Please proceed. Happy to see you.

STATEMENT OF THE HONORABLE CATHERINE CORTEZ MASTO, A UNITED STATES SENATOR FROM THE STATE OF NEVADA

Senator Masto. Thank you, Chairman Carper, Ranking Member Capito.

It is my pleasure today to be able to introduce to you President Biden's nominee to be a member of the U.S. Nuclear Regulatory Commission, Brad Crowell, who is a fellow Nevadan.

Brad currently serves, as you noted, as Director of the Nevada Department of Conservation and Natural Resources, or DCNR, as we call it back home. He has spent his career focusing on energy and environmental policy at both the State and the federal level.

During his tenure at Nevada's DCNR, Brad has received strong bipartisan support, including through his appointment and reappointment by governors of both parties in recent years.

Prior to these appointments, Brad served at the U.S. Department of Energy from 2010 to 2016. He was previously confirmed by the U.S. Senate in 2013 as the Assistant Secretary of Energy for Congressional and Intergovernmental Affairs, also at DOE.

Additionally, Brad served as a staff member for multiple members of Congress after receiving a Bachelor of Science Degree from Santa Clara University. He was proud to work as a staff member here in Congress.

He is married. He and his wife, Rebecca, have a one-year-old daughter, absolutely beautiful, named Hazel. They currently live in Nevada. I understand they couldn't be here today for fear that Hazel would take over the room.

Let me just say this: I have known the Crowell family for so long. His father is a proud veteran, and also the Mayor of Carson City. His mother and father have contributed to our State and our community for so many years. So it is not surprising to me to know that Brad continues in that same vein of understanding the importance of giving back, of public commitment. He continues to show that every day in the work that he does.

He is knowledgeable, he is an experienced public servant who truly understands the importance of public health, safety, and national security. I know that Brad will continue to be an advocate for sound and thoughtful policies.

With that, I would like to express my sincere congratulations to Brad on his nomination, and thank the committee for allowing me to speak this morning.

[The prepared statement of Senator Cortez Masto follows:]

Senator Carper. Thanks so much. Would you say again the name of Brad's wife? I wrote down Rebecca. Is it Rebecca? Yes. And daughter?

Senator Masto. Hazel, daughter Hazel. Rebecca and Hazel.

Senator Carper. Hazel, great. Well, I don't know if Hazel is up and watching television, but Hazel, if you are out there somewhere, I just want to say thank you for sharing your dad, your willingness to share your dad with our Country, and to Rebecca, the very same message to you as well.

I think, with that, we are going to invite our nominees, Ms. Caputo, Mr. Crowell, to the witness table, please.

We welcome you both. If there is somebody with you today, family or non-family, that you would like to introduce as you begin your testimonies, you are welcome to do that. It is great to see you both. We welcome your families and friends who might be here with us.

Ms. Caputo, we would like to begin with you. You are now recognized to give your statement. You are recognized for two hours.

[Laughter.]

Senator Carper. Maybe not. Make sure your mic is on. We want to hear every word.

STATEMENT OF THE HONORABLE ANNIE CAPUTO, NOMINEE TO BE
COMMISSIONER OF THE NUCLEAR REGULATORY COMMISSION

Ms. Caputo. Thank you, Chairman Carper, Ranking Member Capito, and members of the committee, and thank you, Senator Inhofe, for a very gracious introduction. You have always been a beloved mentor of mine, and I thank you for your leadership and everything you have taught me through my many years of service with you.

Obviously, after having worked for this committee for so many years, it is nostalgic to be back in this room, even though it is for a different purpose this time.

I am also grateful to President Biden for nominating me to serve on the Nuclear Regulatory Commission, and so I am honored to appear today in that capacity. Nearly five years ago, this committee reported my nomination with strong bipartisan support. It was then, and still is, humbling to be considered for such a serious responsibility. I hope to earn the committee's confidence again.

Chairman Carper and Ranking Member Capito, thank you for your warm statement. I particularly thank you for your continued support.

I also want to thank my family. Without their support, I wouldn't be here. A.J., my husband of 24 years now, has been a constant champion of my public service.

Senator Carper. A.J., would you raise your hand? Thank you. Would you raise both hands?

[Laughter.]

Ms. Caputo. That is how supportive he is. We also have our son and daughter, Owen and Abigail, here, who have also been a source of support and inspiration. Obviously, they have grown quite a bit since we were here five years ago.

Senator Carper. How old are they now?

Ms. Caputo. Thirteen for Abigail and 17 for Owen.

Senator Carper. Welcome.

Ms. Caputo. Six-one and counting for Owen. He will be as tall as you, maybe, one day.

During my career, I have seen the fate of nuclear energy wax and wane more than I ever would have imagined as a nuclear engineering student. In 1996, when I graduated from the University of Wisconsin, nuclear energy was struggling to be economically viable, and plants were closing prematurely.

Ten years later, there was a renaissance that led to license applications being filed at the NRC for 31 new reactors. Then the renaissance waned, resulting in only two reactors being built, or currently being built, and the industry returning to early shutdowns. Now, once again, considerable momentum is building in support of Small Modular Reactors and advanced reactors.

This committee has demonstrated strong bipartisan support for advanced reactors, and I recognize the sense of urgency driven by climate change and energy security concerns. These innovative designs offer a range of benefits, including improved safety and economics, and may become a significant source of clean energy for our Country and the world.

Safety comes first, not only because it is the agency's mandate to protect public health and safety, but also because it is a predicate to the societal benefits that might be gained by developing advanced reactors. Any design must first be proven safe before the economic viability of deployment can reasonably be tested.

NRC's role as gatekeeper to the future of advanced reactors is a role that this committee and the agency and I all take very seriously. If confirmed, I would work collegially with my fellow commissioners to build consensus as the agency proceeds with regulating these innovative technologies.

I have also, through my years working for this committee, but also during my time as a commissioner, I have seen the impressive expertise and professionalism of the NRC staff in action. After all, they are the reason why the NRC is considered the gold standard for nuclear safety the world over. I have no doubt the staff can meet the challenge of advanced reactors while continuing to ensure the safe operation of

existing nuclear facilities and materials users.

In summary, if confirmed, I will endeavor to serve in a manner worthy of your confidence, the public's trust, and in keeping with the NRC's mission, principles, and values.

I appreciate the opportunity to appear today. I look forward to your questions.

[The prepared statement of Ms. Caputo follows:]

Senator Carper. Thanks so much.

Brad, before you speak, I believe, in my recollection, there was a time when you once worked for my friend over here to my left, Sheldon Whitehouse. Sheldon, would you like to say anything about this fellow before he gives his testimony?

Senator Whitehouse. I am just delighted that Brad is here. He worked for me from 2007 to 2010. We were, at that point in the early stages of developing the policies around nuclear that led to the bipartisan legislation for reform of the Nuclear Regulatory Commission and for enhancement of the process for licensing next generation reactors.

Between his experience as a regulator in Nevada, his experience with Congress, which is not insignificant, I think he will be terrific. He was hardworking, completely honorable to deal with in all of our negotiations, including with offices that did not necessarily agree with us on the merits of various issues.

I think he will do an outstanding job. I couldn't be happier to welcome him here. I will have the chance to razz him a little bit further in my question time.

Senator Carper. Good. Thank you for those words.

Mr. Crowell, you are on, and then we will have some questions for both of you.

STATEMENT OF BRADLEY R. CROWELL, NOMINEE TO BE COMMISSIONER OF
THE NUCLEAR REGULATORY COMMISSION

Mr. Crowell. Chairman Carper, Ranking Member Capito, and members of the committee, thank you for the opportunity to appear before you today. I am honored to have been nominated by President Biden to serve on the Nuclear Regulatory Commission.

Thank you to Senator Cortez Masto for the very kind introduction. Her confidence in me and support for my nomination is greatly appreciated.

It is hard for me to believe that 15 years have passed since I sat on the back bench of this hearing room as a young staff member for Senator Whitehouse during his first term in the Senate. Today, I feel both comfort and a small amount of anxiety to be on this side of the dais and on the receiving end of the Senator's trademark glare over the rim of his glasses. I now wear glasses as well.

[Laughter.]

Mr. Crowell. I thank the Senator for his trust in me so many years ago, and I look forward to any questions he may have for me today.

Most of all, I am grateful for the love and support of my family. My wife Rebecca could not be here with me today. She is home with our 14-month-old daughter, Hazel. They are both watching today's proceedings from Nevada with my mother, Susan,

and I know my father, Robert Crowell, who passed in late 2020, is looking down from above with pride. His lifelong commitment to public service instilled in me a similar devotion to advancing the public good that has guided me throughout my career and to this moment today.

Shortly after my wife and I first met, it occurred to me that both sides of our family have a unique story with respect to America's nuclear history. On my side of the family, my father grew up in Tonopah, Nevada, just outside the former Nevada Test Site. As a youth during the 1950s, he would go with his brother to the edge of town and watch the above-ground atomic tests conducted in the Nevada desert. Years later, during his 23-year career in the U.S. Navy, he would serve as the nuclear weapons officer on a U.S. Navy destroyer.

Meanwhile, my wife's family has deep roots throughout Pennsylvania. My mother-in-law gave birth to her fourth child just 10 days after evacuating from their home in Philadelphia following the partial meltdown at Three Mile Island. Given the uncertainty during the early days of that event, I appreciate her trademark abundance of caution to ensure the safety of her family, particularly given that I am now married to that fourth child, my wife, Rebecca.

Given this personal context, perhaps it is no surprise that my professional career has included work on both defense-related

and civilian nuclear topics. As a career public servant, I have had the unique opportunity to address these issues at both the federal and State levels of government.

During my tenure as Assistant Secretary for Congressional Affairs at the Department of Energy, I gained invaluable experience managing the Department's relationship with Congress on topics including advanced nuclear reactor technologies, consent-based siting for spent nuclear fuel disposal, nuclear weapons modernization, and cleaning up America's Cold War-era environmental legacy. Notably, my time at DOE included events such as the 2011 Fukushima nuclear accident and the 2014 radioactive waste incident at the Waste Isolation Pilot Plant in New Mexico.

As the State level, I have had the honor of leading one of Nevada's largest cabinet agencies for the past five and a half years, the Nevada Department of Conservation and Natural Resources. I thank Governor Sisolak and former Governor Sandoval for their trust in me to lead an agency so integral to Nevada's identity and for their formal support of my nomination.

The department serves as Nevada's primary State-level regulator for nearly all environmental and natural resource topics, including hard-rock and critical minerals mining, hazardous and low-level radiological waste disposal, water rights, and land management, just to name a few.

At both levels of government during my career in public service, I have always prioritized the fundamental principles of balance, transparency, efficiency, and fact-based decision-making as hallmarks for how a public agency should operate in all respects and to maintain the integrity of the regulatory process. If confirmed by the Senate to serve on the Nuclear Regulatory Commission, I will strive to uphold these same principles.

The role of the NRC today is perhaps more important than at any point in the agency's history. The NRC has a pivotal role to play in responsibly overseeing our Nation's operating nuclear reactors and decommissioning plants, while preparing to safely license and regulate the next generation of civil nuclear energy technologies.

If given the honor to serve on the Commission, I look forward to working with my fellow commissioners and the expert professional NRC staff to embrace these challenges and succeed in our collective mission to regulate the safe civilian use of nuclear materials and power on behalf of the American people.

Thank you, Mr. Chairman. I look forward to answering any questions you and other committee members may have for me today.

[The prepared statement of Mr. Crowell follows:]

Senator Carper. Thank you, Mr. Crowell.

Senator Inhofe has asked to go out of order in order to have the first questions. After considerable debate and discussion, we have decided, reluctantly, to allow him to do that. Senator Inhofe?

Senator Inhofe. Good job. Thank you. I appreciate that very much. I have kind of an obligation that comes at this time from the Armed Services Committee. It is hard to be in two places at once. I am also very well aware of the talents and the background and the personalities of the two individuals who are here today as witnesses.

So what I would say to you is the Nuclear Regulatory Commission is a fee-based organization. I think it is important that we understand this is unusual, and it is one that is important, that they have talents in these areas. This year, the agency will receive, we think, about \$745 billion in fees. This money comes from either ratepayers or consumer energy generated by the nuclear power plant or companies that are seeking a Nuclear Regulatory Commission license.

Both witnesses, I would just ask one question primarily, and that is: how do you view the Nuclear Regulatory Commission's responsibility to effectively manage its budget? You have had so much experience in this area. And will you each commit to prioritizing the Nuclear Regulatory Commission's financial

resources on areas most important to fulfill the agency's core mission, to license and oversee the civilian use of radioactive material?

Senator Carper. Before, you respond to that, I should have asked three questions that we ask for the record, and then I would yield back to Senator Inhofe. Those three questions are ones you have heard before.

The first question is, do you agree, this is for both of you, do you agree if confirmed, to appear before the committee or designated members of this committee and other appropriate committees of the Congress to provide information subject to appropriate and necessary security protections, with respect to your responsibilities? Do you?

Ms. Caputo. Yes.

Mr. Crowell. Yes.

Senator Carper. Second question: 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?

Ms. Caputo. Yes.

Mr. Crowell. Yes.

Senator Carper. Very good. Last question: do you know of any matters which you may or may not have disclosed that may

place you in a conflict of interest if you are confirmed? Do you?

Ms. Caputo. No.

Mr. Crowell. No.

Senator Carper. Those are the right answers.

Senator Inhofe, back do you. Do you want to recap your question?

Senator Inhofe. Thank you, Mr. Chairman. It would just be one very brief question requiring a brief answer, starting with you, Ms. Caputo. Would you go ahead and respond to the question that I asked?

Ms. Caputo. Yes, Senator. Absolutely. I would work with my colleagues, if confirmed, to ensure financial discipline and prioritization to make sure that the most important portions of the agency's workload are adequately resourced.

Senator Inhofe. I have no doubt about that.

Mr. Crowell?

Mr. Crowell. Yes, as well, Senator. My understanding is that the NRC is in the process of adjusting its budget and aligning its staff in order to meet that demand. If confirmed, I look forward to participating in that process to make sure that the Commission works in the most effective, efficient way.

Senator Inhofe. I am sure you will. Thank you very much.

Thank you, Mr. Chairman.

Senator Carper. You bet.

I am going to ask a couple questions of each of you, and then yield to Senator Capito. Senator Cardin, I think, is going to be joining us by WebEx, and then back to Senator Whitehouse.

My first question is really for both of you. The NRC is considered to be the world's gold standard for nuclear regulatory agencies. That is because of the NRC's workforce and leadership's dedication to safety.

Strong leadership is especially important at the NRC. We need individuals to serve at the NRC who are dedicated to the critical independent role that the agency plays in ensuring our Nation's nuclear power facilities continue to be the safest in the world. Question: if confirmed, how do you plan to apply your personal background and professional experience to advance the NRC's safety mission? Ms. Caputo?

Ms. Caputo. Well, Senator, to a large extent, I feel like my education and technical background in nuclear engineering gives me a capacity to understand technologies in detail that are presented before the Commission, but it also gives me a familiarity with the technology to ensure that it is done safely. That is the perspective that I would bring to the Commission.

Senator Carper. Thanks.

Mr. Crowell?

Mr. Crowell. Thank you for the question, Senator.

As mentioned, at both the State and federal levels of government, I have had experience in managing and directing regulatory agencies and large budgets. I will bring that skill set to the Commission as well.

I am also very familiar with the issues before the Commission, and I have developed a very good ability to work with professional expert staff, hear their input, ask questions, and work to arrive at the correct outcome.

Senator Carper. As you know, the Partnership for Public Service ranks all federal agencies, at least the major ones, as the best and as the worst places to work based on employee satisfaction and other metrics. A decade ago, for a long time, the Nuclear Regulatory Commission was ranked number one, top of the charts among mid-sized agencies. The latest report, I am told, ranks NRC 12th among 25 mid-sized agencies. Twelfth, from one, top of the charts, to number 12.

If confirmed as NRC commissioner, you will have a direct role in ensuring that the NRC workforce feels supported and excited to come to work every day and help the NRC attract and hold on to the best and brightest employees. This part of your job is important, as you know, especially now as the NRC is looking to replace its aging workforce and ramp up to meet the need of emerging nuclear technologies.

Question: if confirmed, what steps will you encourage the NRC to take to better support the existing workforce and attract new talent? Mr. Crowell, do you want to go first?

Mr. Crowell. Thank you, Senator. I have worked at agencies before that have had reputational issues, and we have turned those around in short order. I believe that workplace culture and employee satisfaction is integral to the effective workings of a department. At present, with the NRC needing to both retain and recruit new talent, that cultural aspect is more important than ever so that we can recruit the best and brightest to work at the Commission going forward.

Senator Carper. Ms. Caputo, same question. Let me just restate the question. If confirmed, what steps would you encourage the NRC to take to better support the existing workforce and to attract new talent?

Ms. Caputo. I agree with Mr. Crowell on what he said. I think leadership plays a strong role. I know this has certainly been an issue that, in my previous capacity as a commissioner, commissioners took very seriously.

I know the senior executives within the agency pay considerable attention to this to understand the results and look for measures to put in place to improve job place satisfaction. I expect that the nature of the agency's mission is a draw for employees. I think there are a lot of people who

feel very strongly about the safety mission of the agency and the national importance.

I think there is often competition, perhaps, in industry where the salaries might be a little bit better. But I think the attraction of that national mission draws people that are particularly dedicated, and I think that has been the history at the agency, and I hope that that history continues.

Managing attrition of our workforce as it ages is a challenge. I think the agency is learning to forecast and anticipate that a little bit better. I am not surprised to see increases in hiring as more of this attrition begins to unfold. It is a challenge, continually, for the agency to manage that loss of expertise as these people retire, but there are significant efforts at knowledge management to try and translate that wisdom, transfer that wisdom into people working in the agency. It also gives more opportunities for those in mid-level to learn and advance and be promoted. I think that does a lot to help with retention of those who will soon be in those leadership spots as our more senior people retire.

Senator Carper. Before I yield to Senator Capito, we have gone through a period in this Country where the nuclear industry was, I think, highly regarded by most Americans. For a number of years, a lot of skeptics emerged and questioned whether this really should be part of our mix of providing energy in this

Country.

We had a meeting, along with some of my colleagues, we met with ambassadors from the European union, including Germany. In that conversation with those ambassadors, I mentioned that there are a number of older nuclear power plants in this Country where there are decisions being made, kind of contemplated, whether or not to keep them open or to close them. In Germany, as you may know, they chose to shut down a number of their nuclear power plants. Maybe all 20 shut down, all of them.

I ask him especially, I said, what advice would you have for us in this Country as we consider similar decisions? He essentially said, I think I would leave them open. I think that might have something to do with job satisfaction.

Senator Capito?

Senator Capito. Thank you, Mr. Chairman. Thank both of you for your statements.

Multiple companies are either currently in the license process or are expected to use existing licensing pathways known as Part 50 or 52 for advanced reactors. The Commission really needs to update a number of policies, such as emergency planning, siting, and nuclear liability insurance to reflect the reduced risk associated with smaller, safer nuclear designs. This will allow advanced nuclear companies to have certainty that their designs can be reviewed, licensed, and deployed in a

timely, economical, and safe manner.

So, basically, Mr. Crowell, if you are confirmed, would you commit to prioritizing policies to establish predictable, efficient, and safe regulations for advanced nuclear reactors?

Mr. Crowell. Yes, I would, Senator.

Senator Capito. How, in terms of the efficiency issue, because I think there is lagging in the timeframes of timelines that have been set, how do you make this process speed up so it meets the increasing interest in this particular advanced nuclear?

Mr. Crowell. Thank you for the question, Senator. My view is that the NRC needs to be a modern, nimble, independent agency that is able to keep pace with industry, but do so in a safe way. It is really an inflection point for the Commission and the expert staff there to meet the demands of what may be a renaissance in nuclear power in the United States, and quite frankly, around the world.

I don't believe that bureaucratic efficiency has to be an oxymoron. I think a well-run agency can be efficient and safe at the same time. That will be one of my goals if confirmed.

Senator Capito. Thank you.

Ms. Caputo, same question. In terms of your previous experience on the Commission, in terms of addressing these policies for advanced nuclear on the safety, efficiency, and

predictable regulatory environment.

Ms. Caputo. If you look at the wide variety of advanced reactor technologies out there, what we are seeing is sort of two groups, those that are more advanced and looking to apply at the agency in the next two to five years, and then another set that is looking more towards the second half of the decade. For those early movers, they will need to be reviewed under the existing framework, which the agency has said repeatedly the agency is capable of doing.

Some of those issues that you mentioned should certainly be handled in tandem with these early movers to resolve as many policy issues as possible to make sure that the agency has policies in place to have efficient reviews of these early movers.

For that second group, in the second half of the decade, it is certainly my hope, and I would work toward this to the extent that I can with my colleagues, to further the staff's effort on a technology-neutral, risk-informed, performance-based rulemaking that was mandated under the Nuclear Energy Innovation and Modernization Act. To the extent that the agency can get that rule in place, I think that will create a more predictable path for those companies that are looking to develop toward the second half of this decade.

Senator Capito. So, if I understand your response,

basically you are saying that the early movers are going to move through the existing regulations.

Ms. Caputo. Yes.

Senator Capito. Does that provide the predictability, so if the rules change in the second half of, between 2025 and 2030, would those early movers have to make adjustments? Because we have already seen the Commission come back recently, and I mentioned it in my opening statement, and rescind an original decision and ask for some revisions. I think we have to avoid that at all costs.

Ms. Caputo. I wouldn't expect that the rules change. I think the way that, and certainly the safety, would not change. The way that companies would demonstrate how they meet the rules would hopefully become more predictable, because right now, as Senator Whitehouse has often said, there are requirements in the existing framework that simply don't make sense for some of these technologies.

So as they go forward, there is an exercise that the agency has to go through between which sections of its rules will be applied and which are not applied. That will be somewhat different for each of these different technologies. So that is an unpredictable path forward as the agency has to make these determinations on each application.

Hopefully with a new rulemaking, there will be less of a

need for exemptions and making those applicability determinations, because it will be flexible and performance-based and more predictable in terms of people making their safety justifications.

Senator Capito. Okay, thank you. Thank you, Mr. Chair.

Senator Carper. Thank you.

Senator Cardin is going to join us a little bit later. He is going to join us by WebEx, but he is tied up in another hearing right now. We are going to yield to Senator Whitehouse for his questions.

Senator Whitehouse. Great. Thank you very much.

First of all, let me say again how terrific it is to see rad here, having moved from the bench behind me to the table in front of me, and having moved on to become a husband and a father and the leader of a very significant organization in Nevada. Welcome. It is terrific to see you here.

The question that I have for both of you relates to next gen nuclear technologies. As you both know, I have been heavily involved in the bipartisan nuclear compromises that have emerged from this committee to change NRC procedures so, as you mentioned, Ms. Caputo, Tesla no longer has to clear carburetor inspection on its way to approval and to create more opportunities for integration between the NRC and academia and the private sector, again, with the view to help develop those

next generation technologies.

One of my motivations for participating in those efforts with my colleagues in this committee has been the sense that those technologies provide the prospect, at least, of addressing some of the nuclear waste that is now being stored in facilities around the Country, that it could actually become fuel. In fact, that is the intention of a considerable number of the private innovators who are operating in this space.

What I would like from each of you is some assurance that, as these new innovative nuclear technologies get developed, you will make sure that there is a lane for inquiry and innovation regarding taking advantage of spent fuel. My concern is that if spent fuel costs a nickel more than new nuclear fuel, that will create an economic disincentive that will drive all of the innovation towards new nuclear fuel and will starve the real prospect that we could actually get new, clean power out of existing spent fuel.

We don't want to be in that position. I don't want to have it be exclusively dedicated to spent fuel. I think there are determinations that are important for the NRC to make along those lines. But I certainly don't want to see saving that nickel to be the thing that drives us completely away from the opportunities that these next generation nuclear technologies create for beginning, in some fashion, to deal with these spent

fuel stockpiles.

So, Ms. Caputo? It can be pronounced both ways.

Ms. Caputo. We have had to be careful about that over the years.

Senator Carper. What are the odds that we would have a Ranking Member Capito and Nominee Caputo, what are the odds of that?

Senator Whitehouse. To both, respond to that concern of mine.

Ms. Caputo. Senator, I understand your interest in technologies that may have that capability. That is a great potential. There has been historically, a lot of research into technologies like that, and some of these vendors are looking at how to capitalize on that historic knowledge and try to turn it in an innovative direction.

The challenge for the agency will be for those technologies, they would tend to be, I think, somewhat different than what we think of as a reactor design and a reactor review. It would fall more into our fuel facilities sector of the agency because there would be some sort of, probably a processing step to prepare fuel. It would be fabricated, the nature of the fuel would be somewhat different, all of that would require reviews.

But certainly, if technologies, if vendors are interested in pursuing that, then there will be encouragement for doing

preapplication reviews with the agency to understand the nature of the technologies that are coming forward and to ensure that we have resources budgeted to adequately review those, that personnel are trained to understand the technology and be prepared when those applications arrive.

Senator Whitehouse. I take out of that there will be encouragement, resources and personnel. Thank you.

Mr. Crowell. Thank you, Senator. I will agree with my colleague, Ms. Caputo, who has deep experience at the Commission.

If given the honor to serve on the Commission, this is one of the areas I am most interested in delving into. We already have a nuclear waste issue that needs to be resolved in this Country. If we can approach advanced reactor and new nuclear technologies in a way that helps mitigate or even partially solve that issue, that is very attractive. It should be factored into that nickel cost equation that you referenced.

So I look forward to working with you on these issues going forward.

Senator Whitehouse. Thank you very much. My time is expired. Thank you, Chairman.

Senator Carper. Thank you so much.

At one time, before I came to work here with my colleagues, I got to be governor of Delaware for a while. Senator Caputo's

dad was governor of West Virginia.

One of the hard decisions we would have to make in Delaware is where to site correctional institutions. Most, a lot of States do corrections by counties, by cities, and by State. In Delaware, we do it at the State level for the most part. But we would have a lot of heartburn trying to decide, when we had to build a new prison, male, female, juvenile facility.

I heard about over in France they were into processing spent fuel. Instead of having a hard time convincing communities to be a repository for spent fuel, and maybe for processing and ultimately recycling, they had communities which were almost like standing in line to compete for the right to be a repository or a facility.

I mention that because there are some States where we have found, not Delaware but other States would compete for the right to build a prison and to take our inmates, and to take inmates from other States. Again, we are happy to work with those folks, where it made sense to allow our inmates to be sited in prisons hopefully not too far away.

But there is a lesson for us somehow. One of the hardest siting decisions for us in Delaware, our correctional institutions, if somehow other States wanted to take our inmates and provide a place for them to live, corrections and so forth. Then we look at France, and they say, well, they are willing to

take spent fuel rods, nuclear waste and compete for the right to house that. Is there a lesson there for us?

Ms. Caputo. Senator, I would start by saying, I think that is something that the Department of Energy is looking at. I agree with you, but I think there is probably some consideration based on the duration of the spent fuel repository compared to a prison. That probably provokes a fair amount of concern in terms of that analogy.

But honestly, I would defer to my colleague, Mr. Crowell, because I think he has a lot more direct experience with this.

Senator Carper. Mr. Crowell, is that true?

Mr. Crowell. Your prison analogy, at least the experience that you are referencing, is true in Nevada as well, just so you know. With regard to nuclear waste disposal, I strongly believe that any administration led by the Department of Energy needs to engage in a consent-based process to help create that dynamic where a community is willing and happy to host a facility, be it interim or permanent.

I can't think of any examples in the past where a federal project has been stuffed down someone's throat and they have been happy with it at the State or local level. So I think starting from a consent-based process is the right way to go. The NRC, for its role, needs to be ready to license that facility if the application comes before the Commission.

Senator Carper. Okay, thank you. I have another question. This would be for both of you. Public trust is at the core of NRC's mission to ensure that the benefits of nuclear technology are harnessed and harnessed safety. This trust is especially important for communities who are hosting operating or decommissioning nuclear power plants, spent fuel, nuclear fuel or other nuclear materials.

My question is this. Would you each take a moment or two to describe how you, if confirmed, would work to maintain or increase public confidence in transparency in the NRC's decision making and regulatory processes? Ms. Caputo, would you lead us off?

Ms. Caputo. Certainly. Transparency is something that the agency takes very seriously, and in particular, openness. I will quote here from the principles of good regulation: "Nuclear regulation is the public's business and it must be translated publicly and candidly." The public needs a transparent window into the nature of how the agency makes its decisions. That shouldn't be buried at the bottom of a document room that is only accessible to people who really live in the neighborhood.

So over the years, this has been something that the agency has really strived to improve, the ways people can access information, the ways people can participate in decisions, the increased use of public meetings, but also use of the web for

people who are not within driving distance, perhaps, of those public meetings. This is an area certainly that the staff takes very seriously and looks constantly for ways to improve access for the public and engagement to try and build that trust.

Senator Carper. All right, thank you.

Mr. Crowell?

Mr. Crowell. Thank you, Mr. Chairman. I associate myself with Ms. Caputo's remarks and say that transparency and engagement with all stakeholders is paramount for the Commission. The duty and obligation of the NRC is not just to the regulated industry, but to the American people.

We need to honor that in the respect of both decommissioning plants as well as establishing new nuclear facilities. If we don't have that trust of States and communities, particularly on the decommissioning side, they are not going to trust us on the new nuclear, establishing new nuclear technologies in the United States.

So we can and should do both. If confirmed, I would look forward to engaging on that.

Senator Carper. All right. Thank you both.

I think we are going to be joined now by Senator Cardin, by WebEx. He will be followed by Senator Lummis, who is here now, Senator Markey, Senator Boozman, and Senator Kelly.

Senator Cardin, are you out there?

Senator Cardin. I am here, Mr. Chairman, thank you very much.

Let me thank all of our witnesses and nominees for their willingness to serve our Country. The NRC is an important agency for the public safety as well as the reliable source of energy for our Country. I take great pride in the NRC, since it is headquartered in the State of Maryland. We very much appreciate the dedication of the workforce.

I want to ask each of the nominees, one of the issues that really concerns me about the NRC, and that is the age of its workforce and being able to attract the most talented people in the industry in order to carry out its mission. It is my understanding that over half of the workforce is over the age of 50, and 30 percent are eligible for retirement.

They are charged with regulating the use of nuclear reactors that, in many cases, have already extended their life expectancy beyond their intended use. We are looking at the next generation of nuclear reactors, which require an expertise from a workforce that can meet these challenges. When you look at the turnover, when you look at the age, it is a concern as to whether we are attracting the very best to carry out this mission.

So I would welcome the views of each of the nominees as to how they would deal with the issue of the workforce, make sure

we have the expertise that we need dealing with the reality of the current demographics of the workforce, and what their strategy would be if confirmed.

Ms. Caputo. Senator, I would like to start by saying thank you. It is wonderful to see you again. I would also say based on my experience at the Commission, your support of the agency is something that I think is relished by everyone who works there. Thank you for that support over the years.

I agree, the aging workforce is a challenge for the agency. This has been something that has been recognized, the aging constantly progresses. So attrition grows over time as more and more people reach the point where they choose to retire. The agency has several processes in place to perhaps capitalize on the expertise of those who are thinking about retirement but not maybe retiring completely, working in some way, maybe half-time for a period of time as they transition into retirement.

The flexibility is there to capitalize on those folks who want to have one foot out the door but are not ready to leave completely gives us an opportunity to continue to benefit from their expertise. So that is one good strategy that is in place. There are a couple different ways that people can do that.

There are also, I mentioned earlier, there are pretty significant processes in place to work on knowledge transfer. Hiring has been something that the agency has recognized in the

last few years, the need for certainly strategic hiring to make sure that we have the skill sets in-house that we need.

As this aging cohort moves closer to retirement, to build in those not just the early movers, the early entrants that are just starting their career, but also the mid-level that need to be in a position to have the skills and expertise developed ready to take over those higher level management positions to replace the expertise that is retiring.

So a lot of this gets accomplished through the agency's strategic workforce plan where managers look at the skill sets that they need and the nature of where hiring needs to be accomplished. That is probably the main strategy for addressing that challenge.

Senator Cardin. You have a dedicated workforce at NRC. But it does require some special attention in order to offer incentives to keep the experienced staff on payroll, doing their mission, but also attracting the next generation of experts in this field. It seems to me you may need some help from Congress in the appropriations process to do that. But I would hope that you would be very open in acknowledging the needs and a strategy for filling those needs.

Ms. Caputo. I am certainly open to that. That is something, having been gone from the Commission for a year, I am not clear exactly where those discussions are with the

Commission, and perhaps with the Office of Management and Budget. I do think one of the things that is unique about the Nuclear Regulatory Commission is the strong need for highly skilled, very specifically skilled employees. As such, I think salaries for the NRC tend to be a bit higher than other agencies, necessarily so.

So I would certainly be open to looking at that issue and working with my colleagues if confirmed.

Senator Cardin. Thank you. Thank you, Mr. Chair.

Senator Carper. Thanks, Senator Cardin, for joining us, and for your stewardship and attention to these issues for a long, long time.

We have been joined by other colleagues. I just said to Senator Capito how pleased I am by the broad participation that we have seen and are continuing to see at this important hearing.

Senator Lummis, you are up to bat.

Senator Lummis. Thank you, Mr. Chairman.

I want to follow up on Ranking Member Capito's question regarding advanced nuclear reactors, specifically, fuel. Wyoming has enough uranium to power America's nuclear fleet for decades, including new advanced reactors. But America lacks the ability to enrich uranium to create the high assay, low-enriched uranium, or HALEU, for short, that those reactors will need.

Today the only source of that uranium is Russia. America's national security requires HALEU enrichment capabilities today. But building those plants will require licenses from the NRC.

So what can be done to ensure that any application for HALEU enrichment can be expedited? I address the question to both of you.

Ms. Caputo. Senator, I understand there is a need for this high-assay, low-enriched uranium. The need is getting more and more pressing, as companies further their development and look forward to filing applications. The fuel will need to come from somewhere.

There are three companies out there that have enrichment technologies, some of which have licenses, but probably not licenses for this level of assay. So were they to pursue construction of a facility, they would need to gain a license amendment to enrich to that level. Once again, that is something that would be through our fuel facilities branch. I would expect making sure that such companies give appropriate notice to the agency so that the agency can budget accordingly. It is a matter of resourcing, and our personnel are certainly capable of conducting those reviews.

There is one company out there in New Mexico that is currently operational. It would also need to pursue a license amendment to do that extra capacity. But I believe the agency

is certainly capable of accomplishing that, should any or all of those companies come forward.

Senator Lummis. So how do the Commission members, and I want to get to you as well, same question, how do the Commission members get things past square one?

Ms. Caputo. It really begins with the applicant. The Commission can't review something that isn't before it, so it really begins with the applicants notifying the agency that they intend to file an application. That is the signal, if you will, that the agency needs to budget staff accordingly and train, so that we are ready as soon as those applicants file their application, so we can conduct an efficient review.

But that is really the starting signal, if you will. Other than that, we have significant staff on board with expertise in these areas. It would simply be a matter of refining that expertise and making sure we are adequately staffed.

Senator Lummis. Thank you. Mr. Crowell?

Mr. Crowell. Thank you, Senator Lummis. I agree with the premise of your question, and I would say that it is long overdue in being addressed, both from our national security as well as an energy security standpoint. We have to pursue this in a responsible way, but do it quickly. If we are going to position ourselves to really lead in advanced nuclear technology in the reactor space, we can't do it without a secure domestic

supply of enriched fuel as necessary.

So I think the Commission should be willing and able and nimble in responding to any application that comes before it. My understanding is that the Commission is working on implementing the more iterative process with applicants for various applications. I think that is a good way to expedite things. So I will look into this. I agree that it is of urgency.

Senator Lummis. Thank you both for that response. As you both know, certain technologies for use in uranium ore processing are dual-use remediation technologies. They can not only be used on NRC regulated activities, but remediation projects governed by other agencies like the EPA. So the NRC's determinations in regulating certain technologies would directly impact their use for remediation projects under other agencies.

Will you work to inform yourselves and work with us on developing these dual-purpose technologies going forward? Again, addressing it to both of you.

Ms. Caputo. Thank you, Senator. I have actually toured several uranium production facilities in Wyoming, both in my former capacity but also as a commissioner. So I am somewhat familiar with the uranium production technology. I am not specifically familiar with the remediation technology that you have mentioned. But I would certainly look at that and work

with my colleagues to address that technology.

Senator Lummis. Thank you. Mr. Crowell?

Mr. Crowell. Thank you, Senator.

I agree that there is some promising technologies out there. I think similar to the discussion earlier about how small modular reactors may help with our waste profile by using spent fuel or reprocessing, we could do the same potentially through remediation on the uranium front. I know this is of particular interest to Senator Kelly as well, in his State.

It is the NRC's responsibility to be knowledgeable in these areas, so that if something does come before the Commission for approval that they can act quickly and responsibly.

Senator Lummis. Thank you both. Thanks for your willingness to serve. I agree, this is something Senator Kelly and I will have in common that we can work with you on. Thank you.

Thanks, Mr. Chairman.

Senator Carper. Thank you, Senator. I am going to move next to Senator Kelly, then Senator Boozman.

Senator Kelly. Thank you, Mr. Chairman.

Senator Lummis, I agree, this is an area that is important to both our States. We can work together on it.

Thank you both for serving and testifying today. I want to start by discussing the important role that nuclear power can

play in providing baseload power to support the grid, especially during times of peak demand and during times when renewable generation is unavailable.

In Arizona and throughout the west, one of the best sources of baseload power has been hydropower. But with the risk of Glen Canyon Dam at risk of getting the minimum power pools, the level of water in Lake Powell has dropped so far that it may not be able to generate electricity anymore, and this could happen as soon as next year, there is a real urgency to ensure that communities in the western United States have access to clean and reliable sources of energy.

Ms. Caputo and Mr. Crowell, with the NRC poised to receive an increasing number of applications for advanced reactors in the next few years, how will you ensure that the Commission conducts thorough but efficient reviews of this new technology, given that the clear and urgent need for these new technologies is there, especially in the west?

Ms. Caputo. Thank you for that question, Senator. I think that is one of the largest challenges before the agency at this point, is being ready for those applications as they come in. So this is a matter of ensuring that adequate resources are planned, and that we have adequate staff, but also particularly the staff that are trained to actually review these applications. Familiarity with the technologies that are coming

in, to the extent that these are innovative technologies that the agency hasn't necessarily reviewed before, those will require unique skill sets. So there is a fair amount of technology-specific training that would need to be conducted.

These are all activities that the agency has had underway for quite some time in addition to the regulatory framework development that has often gotten a lot more attention. So there is the need to make sure that the framework is ready, that it is clear, that it is predictable and efficient, so that companies know how to develop high quality applications.

Senator Kelly. Do you feel it is ready now, or do you need some more time to get there?

Ms. Caputo. The agency has repeatedly said that it is ready to review should these applications come in. They are starting to come in. So part of that then I think is also the training piece of making sure that we have adequate people as the number of applications increases to make sure that we are adequately staffed across various technologies and various applications. So it is a matter of wrestling with making sure we have the right people in the right place at the right time.

Senator Kelly. Thank you. I want to switch gears in my remaining time here. As both of you know, commercial scale nuclear fusion reactors are something that is possible here in the future. While this technology is still in the R&D phase,

there has been some progress made in recent years. It is likely that the NRC at some point will need to begin the approval process for these technologies in possibly the not-too-distant future.

Do you believe that fusion reactors should be regulated the same way that nuclear fission reactors are regulated?

Ms. Caputo. Senator, I firmly believe that the regulation of fusion technology should be risk informed. In that way, the risk profile for a fusion reactor would be substantially different than an existing reactor. I am not sure exactly where the staff's work on this topic is at the moment.

But I know that there is some consideration of whether it would be regulated more as a materials possession facility, given the nature of how it operates rather than the full regulatory framework that you would expect for an existing light water reactor.

Senator Kelly. I think you have the line of thinking correct. Often, we throw the world nuclear out there in front of something and people get rather nervous. This technology is much different than a fission reactor. Where we have always thought about these things being 20 or 30 years in the future, I think at least for me, it feels like it is now closer than that.

Thank you for paying attention to this. Thank you to both of you for being here today.

Senator Carper. Senator Kelly, thank you for raising a very interesting question. While you were speaking, I said to Senator Capito that I don't know that we have had a hearing in this committee that focuses on nuclear fusion. But it is quite timely. It has always been over the horizon, over the horizon. I think it is getting closer. Thank you so much for raising that.

Senator Markey, if he were here, he would be in order. He is not. Senator Boozman is here, and we are delighted that you are here.

Senator Boozman. Thank you, Mr. Chairman, and thank you for holding this very important hearing. Nuclear energy creates jobs, powers our homes, businesses, is a key contributor to our national defense capabilities. Additionally, nuclear plays a key role to help produce low-cost, safe, reliable, and carbon-free electric generation for Arkansas and the rest of the Country, especially when compared to the costs or efficiency of some of the renewables.

While we must continue to accelerate innovation and encourage private sector investment in advanced nuclear reactor technologies, we should not ignore the 93 nuclear reactors currently in operation. Ms. Caputo, will you elaborate on the importance of continuing to support our existing fleet that generates roughly 20 percent of our Nation's electricity and

over half of our carbon-free energy?

Ms. Caputo. Yes, Senator, it is always good to see you. Thank you for that question.

Obviously, the work of oversight of these 93 operating reactors is the lion's share of the agency's workload, and certainly where the largest portion of our employees focus their time. So part of ensuring that these reactors continue to operate safely, and for many years to come, is the importance of our resident inspectors keeping an eye on things daily and ensuring that they are operated safely.

But there is also considerable licensing work that goes on to address these facilities as they change. Many people think of a nuclear plant as just being built and then it runs. But the reality is, over its lifespan, many, many parts of the plant are replaced and modernized. Depending on the nature of that equipment, those require varying levels of regulatory attention, either through license amendments or inspections during installation, etc.

So I think that remains a huge focus of the agency to make sure that modifications and modernization can take place to allow these facilities to remain vibrant sources of power, and safe sources of power in their communities.

Senator Boozman. Very good. We have the issue with the baby formula, where you had a plant that supplies a great deal

of the formula to the Country, it goes down, and then you have a crisis. So I would hope that we would look at that in that context of what happens if we don't, in a way that we recognize the importance and how the grid all works together.

You all understand this much better than I. But I do know that we can get ourselves in trouble by not recognizing that and working to make sure not only that that we have the adequate power but the hallmark of us being able to compete with countries overseas. We can't compete with labor, but we can compete with energy, which is so, so very important.

Ms. Caputo. If I may add, Senator, one thing that I would add to that is just my experience working for a utility right out of college. It was a utility that had several plants that were not necessarily performing well.

What I learned from that experience is, the company's recognition that very high standards of safety go hand in hand with high levels of operational performance. I believe many licensees recognize that and work very hard to maintain their levels of safety. The inspectors keep an eye on that to ensure that they do.

But there is that recognition of the importance of continuing to operate is dependent on continuing to operate safely.

Senator Boozman. Right. We actually had, in the Ag

Committee, we had a hearing on the drought out west. I appreciate Senator Kelly bringing up the idea with the lake levels being so low you are not going to be able to potentially generate electricity. It doesn't seem like that is going away any time soon. Those are the kinds of, we have to cross agencies and get that kind of information, or we are going to get ourselves in trouble in some regions of the Country.

Do you have anything to comment on, Mr. Crowell, before the Chairman yells at me?

Mr. Crowell. Thank you, Senator. I will try to be quick and efficient here.

Coming from Nevada, we understand the analogy that Senator Kelly made as well with the Hoover Dam and those challenges. As we talked about in this hearing, the importance of nuclear energy for our national security, our energy security, meeting our climate goals, are all integral.

But if we don't manage that power supply responsibly, particularly maintaining the existing fleet while we transition to new nuclear power, and there is a hiccup there in how much power is supplied by nuclear, we are going to undermine all of those larger goals. It is important for the NRC to be able to meet that challenge. If confirmed, it is something I will focus on as well.

Senator Boozman. Good. Thank you. Thank you all for

being here.

Senator Carper. Senator Boozman, thank you for being here and for your questions.

Senator Markey has joined us. Senator Markey, if you are ready, I am happy to recognize you.

Senator Markey. Thank you, Mr. Chairman, very much.

The Nuclear Regulatory Commission is responsible for ensuring a safe, effective, and efficient decommissioning process of nuclear power plants, including the Pilgrim Nuclear Power Station in Plymouth, Massachusetts. But I am very disappointed that the Nuclear Regulatory Commission's proposed decommissioning rule would fail to strengthen the decommissioning process and would prioritize industry savings over community safety.

In the latest version of the proposed decommissioning rule at the NRC, the Commission would have no ability to formally approve a nuclear plant's decommissioning proposals, known as post-shutdown decommissioning activity reports. All they can do is acknowledge that they received the decommissioning plan from the nuclear company.

That is like having a mechanic that checks to make sure your car has all four tires without having to check to make sure those tires don't have a hole in them. It is a policy designed for a crash. All the NRC will do is accept the report from the

nuclear company, and just note that they had received it. And that would be the NRC's role. That is irresponsible. It is like a take-home exam where the student says, I get an A, and the teacher says, okay, I am writing down an A. That is okay in school, maybe. But it is not okay when it comes to the safety of the American public and nuclear power.

So my first question is, I will say to you, Mr. Crowell, do you think it is important for the NRC to have a role in a formal process, legal process, to ensure that the public has an ability to be able to comment on the decommissioning plan before it is finalized by the NRC? Do you think the public should be able to intervene at that point?

Mr. Crowell. Thank you for the question, Senator, and thank you for meeting a week or so ago and discussing this topic. As I mentioned earlier in questioning, I see the NRC's responsibility as not just to the regulated industry, but to the American people. That includes the communities that our plants and other regulated entities are in.

We need to honor that. If confirmed, I will be looking at this seriously and delving into it. I would be happy to work with you going forward to make sure that we strike the right balance.

Senator Markey. Do you agree that it is unacceptable to cut the public out of a process as important as decommissioning?

Mr. Crowell. I believe the public and stakeholder engagement is paramount in the regulatory process.

Senator Markey. Do you believe that means hearings and a legal process and no exemptions for emergency response planning, that all of that has to be factored in?

Mr. Crowell. It is somewhat difficult for me to answer that, having not served on the Commission. But in general, yes, the participation and support from a community, whether it is decommissioning or creating new nuclear power plants, is critical. It is essential.

Senator Markey. We saw this in Massachusetts, where the only reason Massachusetts, the Attorney General, could intervene was that there was a transfer of ownership of the plant over to Holtec from Entergy. Otherwise, Massachusetts could not intervene. Because they could intervene, what came out of it is Massachusetts got financial assurances for the community. Massachusetts got stronger cleanup standards. Massachusetts got a commitment that they would move to a greenfields standard. All that because Massachusetts could get in.

So that is the flaw in this whole system. Otherwise, all the NRC could do is just accept the plan from Holtec. So if Massachusetts was able to get it because there was a plant transfer, there are 49 other States where perhaps they will not do a transfer, therefore there will be no process for the public

to get in for a State attorney general to say, protect us.

So do you agree, Ms. Caputo, that the public should be able to have public hearings on a decommissioning plan as it is submitted to the NRC?

Ms. Caputo. Senator Markey, not having served with the Commission that voted on that decision, I would be hesitant to comment on the nature of their decision. This is something that, there are proposed rules out for lengthy public comment. If confirmed, I would certainly want to consider the full nature of the rule, and I would want to discuss it with my colleagues.

Senator Markey. In principle, do you believe the public should be able to comment upon important decisions related to nuclear safety in their community before those decisions are finalized?

Ms. Caputo. Senator, there is an ongoing public comment period for the rulemaking now.

Senator Markey. I mean on the specific plant in the specific State, like Pilgrim in Massachusetts. Should the public be able to intervene and ask questions about this final plan, the safety, the finances for the community for the long run? Should they be able to ask questions, or is it all over? Once this rule is finalized there is no role for the public at all. It is all over. It could be a complete mess of a plan that this company that is trying to maximize its profits,

Holtec, just trying to max out, and cut safety, shouldn't they be able to make some comments in the community?

Ms. Caputo. Ultimately, Senator, the Commission has responsibilities for inspection during decommissioning. There are site release standards that are issued by EPA; sites cannot be released until the NRC verifies that decommissioned facilities have met those site release criteria. So there are protections in place.

Senator Markey. There is no ability for the public to raise the issues. Only because Massachusetts raised the issues did we get all these concessions.

Now, if they got those concessions for Massachusetts, why can't other States get the same concessions? Otherwise Holtec will go to the other States and say, under this new rule, the public is not even going to be allowed to get in. The attorney general of every other State can't get in. We are all set, and we have an NRC ready to rubber stamp what we did.

That is our big problem now. You need to have a State, you need to have individuals be able to raise those issues. Because at Pilgrim, and the proposed rule, plants would be able to strip away their emergency planning response capabilities before all the spent fuel is even out of the pools. Is that unbelievable? No emergency response plan, and the spent fuel is still in the plant.

That makes no sense. The State should be able to raise those issues and say, we need those safety protections in place. By the way, FEMA says that is dangerous. FEMA. Well, how about the attorney general of a State? Why can't they get in and say it? Why can't we have those public hearings? Why can't everyone understand it?

So all I would say to both of you is, please firm up on this, whether or not you believe the public should have a voice; whether or not attorneys general should be able to get in and raise questions, and not just in a context that plant's ownership is transferred, which triggers the ability for a State to get in, but in the ordinary process of 90 plants still left to be decommissioned. It is absolutely critical that we get this issue resolved once and for all. The public's voices will be heard.

Mr. Crowell, I will give you one final comment.

Mr. Crowell. Thank you, Senator Markey. I would just say very quickly, not having served on the Commission, my perspective broadly is that if the public is going to trust the NRC to safely regulate new nuclear power going forward, they need to also have trust that we can safely decommission plants as well. Striking that balance and building that trust is essential to the work of the Commission.

Senator Markey. Yes, the balance is obviously the

public's, and then the Commission votes, and then everyone knows that they heard the evidence, and still voted the way they did. That is the whole key.

Thank you, Mr. Chairman. I very much appreciate it.

Senator Carper. Sometimes our committee hears me say that on a particular issue, or when a question comes up, if I don't have an absolute answer I default to the Golden Rule, just to make sure we treat other people the way we want to be treated. The Golden Rule. You know what that is. Keep that in mind.

I have a question. I think it was you, Ms. Caputo, who said somewhere earlier in the hearing, I think these were your words, aging workforce is a challenge. Aging workforce is a challenge. I think it is, at the NRC. I think it might also be an opportunity. It is a two-headed coin. Albert Einstein used to say, in adversity lies opportunity.

With respect to the aging workforce, where is the opportunity? Ms. Caputo, would you go first, then Mr. Crowell? Where is the opportunity?

Ms. Caputo. The opportunity in an aging workforce is to fully capitalize on the expertise and experience that has been felt over a lengthy career. I think the challenge is replacing that expertise as these people choose retirement and ensuring that the people behind them ready to fill their shoes are developed and trained and ready. So I think that is where the

challenge is.

One thing I think that is perhaps not fully reflected in the NRC's ranking of best places to work is the fact that a lot of our employees continue to serve while past the time when they become eligible to retire. Two things about that. One, I think that is a credit to the agency, and their desire, their dedication to continue working, also their appreciation of the work environment that they enjoy so much. It is certainly in the agency's best interests to remain a good place to work and capitalize on that expertise as long as those people continue to be willing to serve.

Senator Carper. Same question, Mr. Crowell. I think we all agree that an aging workforce at the NRC and other agencies as well is a challenge. Where is the opportunity in that aging workforce?

Mr. Crowell. I agree with Ms. Caputo's comments as well. I think preserving that institutional knowledge is critical as the workforce ages and retires. Then looking forward for recruitment, if you are in any STEM field that works on nuclear, within any STEM field, the NRC should be a place that you want to come and work because of what lies ahead for the NRC in terms of its mission and duty. It should be an exciting place to work, unique compared to working in industry or elsewhere.

I think that is the attractiveness. I think the younger

generation will be drawn to that. But we need to reach out to them and be connecting. That is always a challenge in government agencies.

Senator Carper. Good. I am going to give you a last opportunity, if there is anything else you would like to say, maybe a question you haven't been asked and you would like to answer the question now. If you would like to do that, take a minute to do that, each of you. Then I am going to yield to Senator Caputo for any questions that she may have, and we will wrap it up.

Any closing thoughts or any questions you wish you would have been asked?

Ms. Caputo. Senator, as you know very well, this committee has level of interest in these issues and in this agency is profound. These discussions and these opportunities to testify always have very vibrant discussions that cover the waterfront.

With that said, I would not have any further questions to suggest.

Senator Carper. Mr. Crowell, any last comments before we wrap it up?

Mr. Crowell. One very brief comment. The career staff at the agency is critically important. But how the commissioners work together is also critically important. I think collaboration is key and knowledge sharing is essential. That

is certainly the approach I will take if given the honor to serve on the Commission. It will be a pleasure to work with Ms. Caputo in that regard as well. I have a relationship with the chair from our time at DOE, and I think we are going to be a very effective group of commissioners, if confirmed.

Senator Carper. All right, thanks.

Senator Whitehouse, as you walk out the room, thanks so much for joining us and for your good words about one of these nominees.

Senator Capito, any last thoughts?

Senator Capito. I want to thank both of you for your willingness to serve. I think we have some very substantive issues out. I look forward to supporting both of you in your nominations. Thank you.

Senator Carper. I think I have something else I need to say, some boilerplate here. Again, thank you on behalf of the entire committee and our staff. I want to thank our staffs for helping us prepare for this hearing.

Thank you for your willingness to serve, and to your families, thank you for your willingness to share your loved ones with us. The Nuclear Regulatory Commission is clearly a vitally important agency, maybe more important now than it has ever been. It is important for providing safe nuclear power to our Nation as we continue to confront the worsening climate

crisis.

The agency needs good leaders. We are looking forward to consideration of both your nominations in the coming week.

Before we adjourn, a little bit of housekeeping. First, I want to ask unanimous consent to submit into the record a variety of materials related to today's hearing.

Is there objection? Hearing none, without objection.

[The referenced information follows:]

Senator Carper. Finally, Senators will be allowed to submit written questions for the record through the close of business on Wednesday, June 22nd. We will compile those questions; we will send them to you, both of our witnesses. We ask you to reply to us by July 6th, 2022.

With that, I think it is a wrap. Thanks so much. This hearing is adjourned.

[Whereupon, at 11:35 a.m., the hearing was adjourned.]