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Committee on Environment  
and Public Works

Washington, D.C.

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HEARING ON THE NOMINATION OF JEFFERY MARTIN BARAN TO BE A MEMBER  
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, Markey, Kelly, Cramer, Lummis, Sullivan, Mullin, 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 hearing to order, and doubly pleased because of the person who is sitting right here in front of us to introduce our witness, our nominee.

Maybe before I give my opening statement, I am going to yield to Don Beyer, a longtime friend. I grew up in Virginia and have admired his family from afar. I just wish I could buy a car from them, they are auto dealers, probably still do as far as I know. We have had the privilege of knowing Don and his wife for a number of years.

Why don't we just turn it over to you for whatever comments you want to make, and then I will take it from there? Welcome.

STATEMENT OF THE HONORABLE DONALD S. BEYER, JR., A UNITED STATES REPRESENTATIVE IN CONGRESS FROM THE STATE OF VIRGINIA

Mr. Beyer. Senator, thank you very much. It is an incredible honor for a humble House member to come over and testify before a Senate panel. My fearless leader, Senator Carper, who has taken me all over the world on some wonderful trips. And Senator Cramer, so nice to see a House member do well and rise to this auspicious body. One day I am going to get to North Dakota.

Senator Capito, when I ran for governor many years ago, 26 years ago, part of my promise was that if elected I would send in the National Guard and take back the rest of our State.

[Laughter.]

Mr. Beyer. However, I lost.

But I love West Virginia. It is a wonderful, wonderful place.

I have the incredible honor of introducing Commissioner Jeff Baran to this esteemed Committee on the momentous occasion of his fourth nomination for a fourth term to sit on the Nuclear Regulatory Commission. I am honored to be Commissioner Baran's Representative and I am glad that he has been nominated to again represent all of our best interests in nuclear regulatory policy, as he has done since 2014.

Jeff got his start at Ohio University with a bachelor's and

a master's degree in political science, and then earned a law degree at some little place in Boston called Harvard Law School. He then made a choice that all of us in the room resonate with, instead of going to the big New York law firm, he set his sights to Capitol Hill. He worked in the House of Representatives for over 11 years, first as counsel to the House Oversight and Government Reform Committee, then in the House Energy and Commerce Committee for over 11 years.

In the Energy and Commerce Committee, he pulled together bills around energy efficiency, supporting renewable energy, bolstering the electric grid, and pipeline and nuclear safety, and really impactful projects like the cleanup of nuclear waste in and around the Navajo Nation. Additionally, during his time on the Committee, he oversaw many of the Nuclear Regulatory Commission's activities, preparing him directly for his current role as Commissioner.

He was then nominated to the NRC in 2014 by President Obama, and approved by the Senate. During his time at the Nuclear Regulatory Commission, Jeff and the other commissioners have served diligently, making strides in approving and regulating cutting-edge technologies like small modular reactors.

And my personal favorite, just a few weeks ago, a landmark decision, setting a framework for how to regulate fusion energy

once it moves into power plant readiness. I hope you saw, there was an announcement already this morning that Microsoft has a deal with Helion to provide 15 megawatts of nuclear power in 2028, which is 17 years ahead of the ITER project. It is remarkable. But it is only possible because of what Commissioner Baran and his colleagues have done.

These areas have kept our nuclear power stores safe and operational, while continuing to promote innovation by giving engineers the freedom to find more efficient ways to create and store energy. Jeff's work has also made significant strides toward creating a cleaner and more reliable grid.

I look back with pride on Jeff's work as a Nuclear Regulatory Commissioner, and look forward to the ways in which he will continue to serve our Country if you approve him again.

Thank you, and I yield back the balance of my time.

[The prepared statement of Mr. Beyer follows:]

Senator Carper. We are delighted to see you here. I remember when they were just getting started, nobody had ever heard of them. Now they are like a big deal, it is something. You just never know. Fusion has been a long time coming, but I think it is here now. It is exciting for us.

Thanks, great to see you, Don. Our best to your family. Thank you for joining us.

Let me add a few words if I can, then turn it over to Senator Capito, to say a couple of words about Commissioner Baran.

I am privileged to say a few words about our nominee and the important role that a well-functioning NRC has in ensuring that we continue to safely and reliably power our Nation into the future. As we all know, nuclear power plays a critical role in our efforts to address the climate crisis and strengthen our Nation's energy security, while also creating economic opportunity.

Nuclear energy is currently the largest source of reliable, clean energy in our Country, I will say that again, nuclear energy is currently the largest source of reliable, clean energy in our Country. I think 50 percent of the carbon-free electricity being generated today comes from our nuclear plants. It provides a lot of energy for us, and it is clean.

Meeting our nation's ambitious climate goals will most

certainly involve nuclear power—including the development and deployment of new technologies, as we have just been talking about here with Don, and nuclear reactors.

As we discussed with the full Commission during last month's NRC budget hearing, we must ensure that the agency has the resources that it needs to effectively maintain not only the safety but the security of our Nation's nuclear facilities and materials. A well-resourced and fully staffed NRC is essential to maintaining the safe operation of our Nation's current fleet of reactors while also preparing for the next generation of technologies.

In addition to sufficient funding, the NRC must have a complete leadership team in place. A vacancy on the Commission at this critical moment could delay important decisions and slow down the deployment of new nuclear reactors.

At the end of June, when Commissioner Baran's current term ends, one of the five seats on the Commission will become vacant. Fortunately, the President has nominated Commissioner Baran to serve another term on the NRC.

Jeff Baran is a dedicated public servant who has served as a Commissioner of the NRC since 2014. Throughout his time on the Commission, the NRC has maintained its status as the world's gold standard for nuclear regulatory agencies. This level of excellence is due in no small part to Commissioner Baran's



leadership. We are grateful for that.

In his time on the NRC, Commissioner Baran has focused on the need to serve the public and provide opportunities for engagement and input from all stakeholders, especially those in disadvantaged and underserved communities. He has brought a welcome perspective to the NRC about its role in promoting environmental justice.

It is clear that Commissioner Baran also understands that the NRC's work is critical in our fight against climate change. Commissioner Baran has demonstrated this commitment to addressing climate change through the Commission's work to establish the right regulatory framework for the safe licensing and the operation of new technologies like the next generation of nuclear reactors and fusion energy systems.

Before beginning his service on the NRC, Jeff worked as a staff member, as we have heard, for the House Committee on Energy and Commerce. During that time, oversight of the NRC was one of his primary areas of responsibility. In addition, he has successfully worked to coordinate between relevant Federal agencies and two Native American tribes to clean up uranium contamination in and around the Navajo Nation.

As I mentioned, maintaining a full slate of commissioners will help the NRC continue to carry out its important responsibilities and do so effectively and efficiently. That is

why I hope to work with all the members of this committee to expeditiously move Commissioner Baran through the confirmation process to ensure that this impending vacancy is filled.

With that, I am pleased to turn it over to 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, Mr. Chairman. Thank you, Commissioner Baran, for being here with us today.

Nuclear power is necessary to meet our energy and national security priorities, provide for a reliable electric grid, and achieve our environmental goals. Congress established our Nation's policy on the peaceful use of nuclear technology in the Atomic Energy Act.

That policy remains as important and relevant today as it was when it was enshrined into law generations ago. The Atomic Energy Act states that the use of nuclear energy shall be directed to make the maximum contribution to the common defense and security, improve the general welfare, and increase the standard of living.

To help achieve those goals, Congress provided the fundamental nuclear regulatory standard, called the reasonable assurance of adequate protection. This reasonable assurance standard guides how the Nuclear Regulatory Commission asserts its authority to regulate the civilian use of radioactive materials. It provides the guideposts by which the NRC meets the agency's mission to improve the general welfare and protect public health and the environment.

This morning, we will examine how Commissioner Baran's

record aligns with those dual pillars, the Nation's long-established nuclear energy policy goals, and the regulatory standards under which those goals are met. This is Commissioner Baran's third nomination hearing before this Committee to serve on the NRC.

As I have reviewed his record from his long tenure as a commissioner, I see a regulatory philosophy of an unjustifiably increasing regulatory burdens, and reducing regulatory predictability and adding costs. This policy approach of stifling innovation and squeezing the industry is unacceptable at the best of times.

But it is especially unacceptable at a time of transition in the nuclear fleet, which we have talked a lot about in this committee, increased demand for reliable and zero-emission sources of baseload energy electric generation, and cutthroat international competition in the sector.

I am concerned that this cumulative record, Commissioner Baran's votes and the policies he has supported, may not align with what Congress expects, and the Nation needs and deserves, with respect to nuclear power. I look forward to hearing his responses to questions about past decisions.

Continuing down a path that would seem to follow from that past record will unnecessarily limit the deployment of safe nuclear energy and threaten America's security and economic

competitiveness. Congress has consistently provided significant support with strong bipartisan majorities to keep operating our nuclear power plants online while developing and deploying modern, advanced nuclear technologies.

New policies recently approved by Congress are in place to incentivize today's nuclear power plants to increase power output and pursue license extensions. Policies are also set to facilitate the major private capital investments necessary to license, construct and operate our new reactors. The success of these policies will depend on how they are implemented in the next five years, the same timeframe as the term for which Commissioner Baran is nominated.

I am concerned his past record shows that when multiple regulatory options exist, Commissioner Baran has consistently supported the more burdensome pathway and deviated from the reasonable assurance standard. He has voted to overturn previous Commission decisions with no new information to justify such a relook. In vote after vote, Commissioner Baran took positions that support the ratcheting up of regulations, and by extension compliance costs, to no useful end.

This record, if continued, will severely curtail the outlook for nuclear energy in our future, cede international markets to Russia and China, and limit the Commission's ability to deliver upon the vision set out by Congress at the dawn of

the nuclear age. I will have some questions for the Commissioner on how he plans to correct course on these matters to reestablish America's leadership in nuclear energy.

I yield back.

[The prepared statement of Senator Capito follows:]

Senator Carper. Thanks, Senator Capito.

Commissioner Baran, we are delighted to see you again.  
Thank you for your service; thank you for your willingness to  
serve further.

You are recognized for your opening statement.

STATEMENT OF THE HONORABLE JEFFERY MARTIN BARAN, NOMINEE TO BE A  
MEMBER OF THE NUCLEAR REGULATORY COMMISSION

Mr. Baran. 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 to continue my service on the Nuclear Regulatory Commission for another term. Thank you, Congressman Beyer, for taking the time to introduce me. I appreciate it.

I have been reflecting on the changes in the nuclear energy landscape since I joined the Commission in 2014. A lot has changed. We have seen major shifts in NRC's workload, budget, staff size, hiring, and overall outlook for the future.

When I arrived on the Commission, these factors were all on a downward slope. Our workload was shrinking. Our staff and budget were shrinking. We had the Project AIM effort to reduce costs, narrowly avoided layoffs, and essentially had a hiring freeze. Nuclear power plants were shutting down.

Back then, there was little talk of new construction beyond Vogtle. There was some interest in small modular reactors, but almost no real discussion of advanced, non-light-water reactors.

Today, we are in a very different situation. Policymakers and the public are increasingly focused on climate change and on energy security. The urgency and scale of the climate challenge



have led to a growing consensus that meeting ambitious climate goals will involve nuclear power, including new reactors.

The Bipartisan Infrastructure legislation and the Inflation Reduction Act make large investments to drive this expansion, including through the Clean Electricity Production Tax Credit and funding for a domestic high-assay low enriched uranium supply chain. Few, if any, nuclear power plants are expected to close anytime soon.

With more potential applications for advanced reactors, small modular reactors, subsequent license renewal, new fuel designs, power uprates, and risk-informed programs expected, NRC's overall workload is increasing. We are hiring again, and our budget requests are stabilizing, or even growing a bit, to allow us to do this new work. The outlook for nuclear has markedly changed, and it is an exciting time to be doing our important work.

NRC has a key role to play in addressing climate change and energy security. It is our job to ensure the safety and security of nuclear power in the U.S. energy mix. And that means we need to be ready. When utilities and vendors tell us that we should expect numerous new designs and reactor applications, we need to be ready with sufficient resources and the right expertise to review them, and an efficient and effective licensing process that can handle every application

that comes our way. That is an important NRC responsibility. In this period of change, NRC also needs to be open to, and ready for, new technologies that could improve safety.

When I arrived at NRC, I committed to bring an open-minded and collegial approach to the issues that come before the Commission. And I believe I have met that commitment. My focus has been on crafting thoughtful, balanced, and timely votes after hearing from a broad range of stakeholders.

I value the relationships I have formed with my Commission colleagues, the NRC staff, licensees, unions, States, tribes, and public interest organizations, and have benefitted greatly from their ideas and input. My frequent visits to nuclear power plants and other NRC-regulated facilities not only give me an opportunity to view equipment and technologies firsthand; they also give me the chance to hear directly from NRC's resident inspectors, as well as the workers and managers at the sites, about their priorities and concerns. If confirmed, I look forward to maintaining my open-door approach.

Several key initiatives are underway at NRC, and I am eager to see them through to their conclusion. If I am confirmed for another term, I will continue to focus on these efforts, including establishing the framework for advanced reactors and small modular reactors, standing up the framework for fusion, and finalizing the decommissioning rulemaking and source

security rulemaking.

I also want to see the agency make real progress on our environmental justice efforts. Ensuring that the agency has the talented and engaged workforce to succeed is another top priority for me. I am happy to discuss these or any other issues of interest to members of the Committee in greater detail today or in the future.

Prior to my service on the Commission, I had the privilege of working for Congress for more than a decade. I have a deep respect for the importance and value of Congressional oversight. If confirmed, I will continue to do everything I can to ensure that the Committee has the information it needs to meet its oversight responsibilities.

Thank you, and I look forward to your questions.

[The prepared statement of Mr. Baran follows:]

Senator Carper. Thank you. And thank you again for joining us today.

Senator Capito and I have agreed to one round of five-minute questions, with additional rounds at the discretion of yours truly.

To begin, this committee has three standing yes or no questions that we ask of all nominees, as you may recall. Let me just ask, if I may, the first question is, do you agree to appear before this committee or designated members of this committee and other appropriate members of the Congress and provide information subject to appropriate and necessary security protections with respect to your responsibilities? Do you?

Mr. Baran. Yes.

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

Mr. Baran. Yes.

Senator Carper. My third question is, 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. Baran. No.

Senator Carper. All right. I have some prepared questions I was going to ask, but I think I will instead, we hear some concerns raised by our Ranking Member that I take seriously. She is a great partner on this committee, and I am privileged to serve with her and the other members.

She has raised some concerns, and I would like for you to respond to them at this time.

Mr. Baran. Sure. I take our NRC safety and security mission very seriously, but I also take our licensing mission very seriously. It is an important responsibility for NRC to have an efficient and effective process.

When I think about the next five years, I agree with what Senator Capito said, it is going to be a critical time in the energy sector, and I think in particular for the nuclear sector. We are going to see an increasing number of applications come in for new designs, for new reactors, for additional investments at the reactors we have, for extended licensing terms for the existing fleet.

I think all that is critical. I agree with the comments that both you and Senator Capito made about how critical the existing fleet and future reactors are going to be to achieving our climate goals and our energy security goals. I want to make sure NRC is doing its part in all of that. That means maintaining strong standards and rigorous oversight. I think

everyone wants that. But also to make sure we have a process that is going to be able to review effectively and efficiently a large number of applications that we are expecting.

When we look at the applicants or the pre-applicants, potential applicants already in discussions with NRC, we are talking about 20 applications in the next few years. That is a lot more than we have seen in recent times. And readiness, building our readiness for that, and it has multiple elements, but building our readiness for that I think is really going to be a key issue, a key challenge for the agency.

Senator Carper. All right, thank you.

The NRC is considered, as I have already mentioned, to be the world's gold standard for nuclear regulatory agencies. I am proud of that; I think every member of this committee is proud of that, and I am sure the Commissioners are as well. A strong leadership is especially important at the NRC, and we need individuals to serve there who are dedicated to the critical, independent role that the agency plays in ensuring that our Nation's nuclear power facilities continue to be not just among the safest in the world, but the safest in the world.

My question is, if we ultimately confirm you for another term, how do you plan to build on your experience on this Commission to continue to serve NRC and our Country with respect to this mission?

Mr. Baran. Well, after being on the Commission for several years, I think I have a good sense of what the agency does well, and where we need to improve. The staff has incredible technical expertise, is very good at conducting thorough licensing review and providing that rigorous independent oversight that we need.

As an agency, I think we are getting better at being open to new technologies and new approaches. I think that is a work in progress. It is critical. We need to get there and continue the progress.

As I mentioned, the biggest challenge we face is readiness to review a large volume of expected applications. If I am confirmed for another term, building that readiness would really be a priority for me. There are multiple elements that we can talk about there in terms of having the framework in place, the regulatory framework in place, having the personnel in place, having an efficient process in place. All those are key aspects of that.

Senator Carper. As the United States and other countries around the world work to combat climate change and reduce greenhouse gas emissions, interest is growing in maintaining operating reactors and deploying new nuclear reactors that can help us meet our clean energy goals. Technology developers are designing new reactors and fuels that are ever more efficient

and less expensive to build. These new designs must ultimately be reviewed and approved by the NRC before deployment.

Would you please take a moment to share your thoughts on the ADVANCE Act with us, important legislation led by Senator Capito and myself and Senator Boozman? Are there provisions in the bill that you think are particularly helpful in the NRC's work?

Mr. Baran. Yes. I think it is a very good bill with a number of valuable provisions. Easing the corporate support constraints would help the agency a lot, particularly with IT and physical space renovations, which saves money down the road. The additional hiring flexibility would help us tackle our tough hiring challenge, so that we have the right expertise in place to review the new applications we are getting.

Modernizing the foreign ownership control and domination restrictions are an important step too. Those are back from the original Atomic Energy Act in the 1950s, and the new provision I think is valuable because it recognizes that there is now a global nuclear market that wasn't in existence 60, 70 years ago.

The provision on siting new facilities at brownfields sites I think is very good. The fusion provision I think is very helpful, too. I could go on. I think it is a very good bill.

Senator Carper. If you had to think, and I will ask you to respond to this for the record, all of us on this committee have



had the opportunity to offer legislation, important pieces of legislation. I have never written a perfect bill. I would like for you to, in a question for the record, respond to a couple of ways you think we can actually improve on the work that Senator Capito, her staff, and Senator Boozman and my staff have done. So if you could do that for the record, I would be grateful.

Senator Capito?

Senator Capito. Thank you, Mr. Chairman.

Commissioner Baran, Congress passed the NEIMA, Nuclear Energy Innovation and Modernization Act, to help facilitate deployment of advanced nuclear. The bill directed the Commission to develop a risk-informed regulatory framework for advanced nuclear, new nuclear technologies. It is a very simple concept. The level of NRC's nuclear safety requirements should correspond to the associated risks of the facility. You already mentioned safety and security is top of the list.

This concept is not just applicable to advanced reactors, but it is also incorporated through NRC's existing requirements. In 2021, the Commission approved the staff's proposal to establish requirements for nuclear power plants that are going through the decommissioning process. In that time, you were the sole vote in opposition to the staff proposal.

One element the staff proposed, and the rest of the Commissioners supported, is limiting a shut-down reactors

emergency planning requirements after enough time has elapsed for the spent nuclear fuel to sufficiently cool down. This very straightforward application of the NRC's risk-informed regulatory process and the Commission repeatedly voted on a case-by-case basis to do so. The staff proposal formalized that established Commission precedent.

In your opposition, you stated that you supported the theory that a spent fuel pool could immediately empty as a result of a severe accident with no subsequent mitigation actions, and that the remaining spent fuel would catch fire and result in a release that impacts public health.

In 2014, the NRC spent 11,530 hours and \$3 million evaluating the likelihood of this scenario. It concluded that it did not warrant additional regulatory requirements. That analysis was included in the staff's regulatory justification to the rule that you opposed.

So, Commissioner Baran, do you know what the staff's extensive technical analysis found to be the odds of such an accident occurring at a shut-down nuclear plant?

Mr. Baran. I don't know off-hand.

Senator Capito. The odds were one in 10 million.

So I could get hit by a meteor, that is probably the same odds.

So in your view, does a risk lower than one in 10 million

meet NRC's statutory regulatory standard of reasonable assurance of adequate protection, or what is your standard, if one in 10 million is too much?

Mr. Baran. I think in terms of thinking about the probability there, I certainly didn't have the view that a spent fuel pool could empty immediately. All the analyses would show that in those kinds of postulated accidents, you are talking about several hours.

I think the question was, I agreed with the scaled approach, and when do you take those steps to scale back particular requirements. My view was, as long as the staff does proper analysis, including for the decommissioning rulemaking, talk about that there are risks, there are lower risks, but risks associated with spent fuel pools.

My thought was the time to move to the elimination of emergency planning zones and all emergency planning is really when it is in dry cask storage. That was a view, I took seriously the concern to FEMA and State regulators and State emergency responders. We heard a lot of concerns from FEMA and State emergency responders about the timing for when you make that move, and from communities.

So from my point of view, my goal is to have a balanced decommissioning rule. We are still in the process on that, we have the proposed rule and the staff is now working on a draft

final rule. I want to see what the comments are on that.

But we had a lot of public comments, including a lot of concerns from States, localities and FEMA about the timing there, and the view that -- we are not regulating to zero risk, obviously. But we want to make sure we have adequate protection until dry cask storage.

Senator Capito. So the point here I am trying to make is, we are moving forward toward this new licensing. If the standard of risk that is unacceptable to you has to be less than one in 10 million, and you also in your statement, or actually your reaction to the Chairman's question, extolling the expertise and technical suggestions that terrific staff does and has made over the years, this was something that they felt they had thoroughly researched.

Will you use that same standard as you are starting to look at what we know is going to be a very busy and hopefully very productive five years of moving forward?

Mr. Baran. Yes, when I think about small modular reactors, advanced reactors, I don't think anyone is talking about a kind of one in 10 million standard for risk.

Senator Capito. So you would use a different standard?

Mr. Baran. Right. We have a rulemaking right now that is focused on emergency planning for small modular reactors. We are now at a draft final rule stage before the Commission.

My view is we need a graded approach. As you have new technologies that are safer, you are not going to have a 10-mile EPZ in everything we do now. It is going to be scalable, based on the risks associated with the reactor and the safety features of the reactor. So you may have some with five miles, you may have some with two miles.

The hardest issue is when you are talking about basically no dedicated offsite radiological emergency planning, effectively no EPZ site boundary. There may be a number of reactors. They may be able to make a safety case for that. I think that is reasonable. When I look at all the comments we got, and the draft proposed rule, I am comfortable going there.

But I think it is important that there be a sign-off, if you are going all the way down to site boundary, to make sure FEMA is comfortable with it, and the local emergency planners and response organizations are comfortable that that is going to work for that particular site.

I agree with you. We need a graded approach. Although the votes are not out yet on that, that is what my vote on that rulemaking says.

Senator Capito. Thank you.

Senator Carper. Thanks, Senator Capito.

Senator Cramer, you are welcome to proceed.

Senator Cramer. Thank you, Mr. Chairman and Senator

Capito, for having this important hearing on this important nomination.

I am going to build off a little bit of what Senator Capito was asking you about. I am still not really sure what your standard is. You quoted the 1974 Atomic Energy Act. She has quoted the reasonable assurance of adequate protection. And I am not really sure where you are in that. You are ready for a new rulemaking, and yet there is a law, things are getting safer, not less.

So I want to go back to your voting record. I sort of take from your opening statement the fact that things are moving better than they have been since you have been on the Commission, all of that. I don't want to over-simplify your words.

But your voting record, you have been the sole dissenter, not just in the one that Shelley was talking about, but a number of times, including against the development of more generic EIS that could help speed up some of this. Not even so much speeding it up, streamlining, keeping it safe, but streamlining, recognizing that in the smaller reactors, they can have a little more generic process.

She brought up the emergency planning requirements. You also voted against updating the NRC's guidance to provide increasing flexibility. Flexibility, again, back to the local

communities and other things, flexibility is really, really important.

I am just concerned that you are the one impediment on the NRC, not the one that is truly an advocate for advancing safely, advancing this important technology, to meet the climate and energy security goals that you spoke about in your opening statement. Could you respond a little bit to that? Is that a justified concern by me?

Mr. Baran. I appreciate your concern. I have been on the Commission a while now, and I have a lot of issues in the minority and a lot of issues in the majority. I prefer it when my view prevails. But that is life on the Commission. Sometimes you are on the dissenting side, and sometimes not.

Let me just take one of those, because I think it is really an important issue, which is a generic environmental impact statement for advanced reactors. I think that is an important one.

I was skeptical of that, when that proposal was made. I really doubted that that was going to be useful. It was going to take a lot of work, and I wasn't sure it was going to be that helpful. Because my conception of what it was going to be is how much environmental analysis can you really do without knowing the site, without knowing the design, without knowing the size, any of the safety features.

What the staff did, though, I think they did a really good job on it, and we have this before us now. I voted on this; it is not out yet because there are still votes pending.

But they did a good job. What they did instead of trying to do a full kind of environmental analysis like you would imagine it, very specific to anything, they came up with, for each of the resource areas, they came up with basically entry criteria. If you have a site that would do this, we could make these findings. If you have a reactor that meets this, we can make this finding on noise, or this finding on land effects, or aquatic.

So I support finalizing that. I think it is a good product. I was really pleasantly surprised at what the staff came up with. I do think it will be useful, because it is going to narrow, if used well, and hopefully it will work, narrow the issues that need to be resolved for each individual reactor application that comes in.

I think that is heading in the right direction. Maybe I was overly skeptical about that to begin with, because I think it is a good product the staff has put together.

Senator Cramer. It sounds like a good process, and good direction. Because we need to do things quicker. We really need to have that type of security that you talked about, and to meet the climate goals that several of you share.



I may have to wait for another round to get to everything I want to talk about, but you have been such a strong advocate for environmental justice, to the point of advocating for maybe having an advisory committee right in the NRC on the topic. You have commented a couple of times, matter of fact, I have the transcripts of your last two speeches before the regulatory conference where you lauded the White House's Office of Environmental Justice.

I just worry that as a regulator, having been one for 10 years, an elected one albeit, but in an all-of-the-above energy State like North Dakota, doing resource planning that included nuclear for Minnesota as well as clean coal for North Dakota and natural gas, wind, solar, you name it, we did it all, that when the regulatory agency gets involved in sort of more the political policy side of things, you become more of an impediment to the advancement of this technology than you do an advocate for it. We shouldn't be advocates for it, either, obviously, as regulators.

But again, is my concern justified, given your record, both in voting and the comments you have made relating to environmental justice?

Mr. Baran. I definitely don't see pursuing environmental justice as an impediment to the existing fleet or to new reactors. I really see it as something that is going to benefit

all stakeholders.

So the staff, just briefly, I will give you maybe 10 seconds of the process the staff followed, over several months they did a kind of big review of NRC's policies and procedures and activities. They talked to a ton of stakeholders. They got public comments. They did written comments. They did public meetings and all kinds of outreach. They got a lot of feedback.

And they used all that to come up with several very good recommendations. One of them is for an advisory committee. We have a couple of advisory committees at NRC that I think are very useful. I think this one could be as well.

But I don't think, kind of going back to the Atomic Energy Act, we don't have, under the Atomic Energy Act, the latitude to consider environmental injustice as a licensing factor. I don't think anyone is contemplating that. That wouldn't work under our statutory authority.

What we are focused on are the processes we have, the ways we interact with the public. NRC is a complicated agency with really complicated processes. I think a lot of stakeholders, EJ communities, but everyone struggles sometimes to navigate all that.

The main thrust, I think, of our environmental injustice approach, is to make the agency more accessible to everyone, not just one set of groups, but everyone, so that people can

navigate all that, and figure out, if they have a concern, how do they pursue it, or if they want to make a comment, how do they do that, and understand what we are doing. It is complicated stuff, and our processes haven't made that easy over the years.

Senator Cramer. Process matters, for sure.

Mr. Chairman, thank you. He actually answered the question I would have asked if you had given me another minute. Thank you.

Senator Carper. You get extra points for that.

All right, we have been joined by Senator Sullivan.  
Welcome.

Senator Sullivan. Thank you, Mr. Chairman.

Mr. Baran, thanks for your service. Let me just begin with a couple of basic questions. Do you support nuclear energy in the U.S.?

Mr. Baran. Yes.

Senator Sullivan. Why do you think certain environmental groups don't? There is obviously zero emissions. And I have never understood that. If you need all-of-the-above energy and one very strong power generation source for America, it is nuclear, and we are quite good at it, we have the whole nuclear Navy enterprise, Mr. Chairman, that is really remarkable.

Why do you think certain groups oppose it? I know you are

not speaking for them. I have always just really been curious. I don't understand it.

Mr. Baran. I definitely don't want to speak for anybody else. There have been focused concerns over the years that people have expressed, whether they are concerned about radiological risk, whether they are concerned about waste.

But it seems like the conversation has really changed in recent years. As the focus on climate change and NRC's energy security has ramped up, there is just a much more widespread consensus of the importance of nuclear than there has been.

Senator Sullivan. I thought it was kind of going in the opposite direction, but maybe I am wrong in that.

Mr. Baran. That is not my perception. I think there is a widespread understanding that we are not going to achieve our climate or energy security goals without the existing fleet. When I talk to utilities, and the conversation has changed about, well, a few years back, it was how do you get 20 or 30 or 40 percent of your electricity carbon-free. Now it is you need 80 or 90, or 100 percent. They can't figure out how to do that if you don't have the nuclear part of it.

I hear that over and over. I think to the extent that we have shared goals on climate and energy security, that just points to not just maintaining the role of nuclear, but almost certainly, expanding.

Senator Sullivan. Let me ask you, you were talking about environmental justice, do you have a tight definition of what that means, thrown out a lot, but rarely defined?

Mr. Baran. That is part of what we are going to determine, what is our definition in this process. For me, when I think about it, it is about equal treatment, it is about equal access to decision-making and decision-makers. It is about having a fair process that includes everyone.

To me, that is not something that benefits any one group or any one stakeholder. If it is done right, it benefits everyone.

Senator Sullivan. In terms of your record, you were the sole vote against updating the NRC's guidance for siting smaller and safe advanced nuclear reactor technologies, you were the sole vote against NRC's development of a generic EIS for nuclear reactor technologies, you were the sole vote against the NRC staff proposal to scale emergency planning requirements for smaller, safer, advanced nuclear reactor technologies.

We are looking at small scale microreactors in Alaska. But your record seems to be the one outlier on this important technology. Is that a misstatement? I am just giving you a chance to defend your record.

Mr. Baran. Sure. I am proud of my record. I think I cast good votes over the years.

But just to take a couple of those examples, the generic

environmental impact statement, that was really at the conceptual stage. Now that we have a draft in front of us, I think that is a good draft, I think we should go forward with that, and I think we will get some real benefit there.

Senator Sullivan. So you would change your vote, you think, on that, then?

Mr. Baran. I think we are in a different space in the process. As I look at what the staff did, I think it is going to be useful. So I will support it. When we were talking about the emergency planning, that was at the proposed rule stage. We are now moving on to the final rule stage. I am going to support that rule. I think we do need graded emergency plans.

I would like to see a few changes in it. But I think conceptually it is the right way to go, and I think that is going to be an important piece of the puzzle for the regulatory framework that we have in place.

Senator Sullivan. Hit the siting one, then I have one more question for you.

Mr. Baran. I was going to briefly say, on siting, no one has been, at least in any of the decisions to date, contemplating changing the regulatory requirement. The question is just do we need to update the guidance. There is a lot of flexibility in the guidance as is to do a lot of the projects, like the ones you are talking about, at military bases and

villages, former fossil generation sites.

I didn't think we needed to do it. I do think we have to be thoughtful. It is going to depend in part on the safety, obviously, of particular design. But siting and emergency planning, they have traditionally been really key concepts for defense in depth. You try to have some distance from population centers, and you want to have adequate emergency planning.

It is a tough balance to strike on that.

Senator Sullivan. Well, let me ask my final question, which kind of relates to that. So we have had this nuclear regulatory framework for decades, that the commission has implemented. It was built upon large-scale nuclear power plants and large-scale nuclear power generation.

You have an entirely new approach with these microreactors, which pose much less safety risks. Don't you think then the regulatory permitting regime should reflect that and not be essentially using what we have been using the last 40 years for a very different approach that might need a different regulatory approach as well?

Mr. Baran. I agree with that. There are a lot of initiatives underway to get at that. The biggest is probably what we call Part 53, the new framework. We are all working through that, because we just got the draft proposed rule with the Commission. But yes, I agree with you.

Senator Sullivan. Okay, thank you. Thank you, Mr. Chairman.

Senator Carper. Thank you, Senator Sullivan.

We have been joined by Senator Cardin. Welcome, please proceed.

Senator Cardin. Thank you, Mr. Chairman. Mr. Baran, welcome, and thank you for your commitment to public service. We appreciate it.

The NRC is pretty special to those of us in Maryland, since you are headquartered in our State. We are very proud of the workforce and the mission that you carry out.

However, there have been some really disturbing trends that I want to talk about in regard to the workforce. The attrition rate is well above the average for Federal agencies, 9.6 percent. One-third of your workforce is eligible for retirement, which is an older workforce. The expertise is absolutely essential for you to be able to carry out your mission, and experience is very important.

Perhaps the most disturbing fact is that on the OPM's rating on best places to work, NRC has dropped to 21st out of 27th. That is not good. If you use the rating system in 2010, it was 81.8; it has dropped to 66.3.

So tell me how you plan to, first, do you acknowledge this is a serious issue? How do you plan to address the morale



issue, as well as having a competent workforce in order to meet the challenges that you have heard, in an evolving area where expertise is going to be critically important to our future?

Mr. Baran. I absolutely agree, we have to focus on the morale of NRC's terrific workforce.

My sense is that a significant cause of that decline in job satisfaction had to do with our re-entry from maximum telework in November 2021. We ended up being one of the first agencies to go back to the office. There were a lot of concerns among our employees about doing that.

They ended up heading into the office long before their colleagues at other agencies, and there was no real compelling explanation for why they were there, and folks at other Federal agencies weren't. I think it eroded some of the staff's trust in senior leaders.

The desire of many NRC employees to have significant telework flexibility is a major issue today, and I think continues to be a source of friction within the agency. From a how-do-we-fix-this point of view, I think striking the right balance on telework flexibilities is going to be crucial. I think it is maybe by far and away in my mind the biggest issue for the staff right now on morale issues.

Senator Cardin. How do you strike that right balance? We all agree that the synergy of having staff working together is

critically important for the development of staff and for the mission. We do recognize that as a result of COVID and people doing telework, they found it much more convenient, and in many cases much more efficient in regard to their individual responsibilities. Of course, it allowed them to be able to not have to deal with the morning commutes and afternoon commutes.

So how do you find that right balance?

Mr. Baran. It isn't easy. The agency is spending a lot of time on that right now. One the one hand, as you have pointed out, we have a major hiring and staffing challenge. To the extent that we have a lot of employees currently, or potential applicants who are interested in a lot of telework, we want to be able to retain those folks, we want to be able to compete for those new employees.

So we are going to need to have significant telework flexibility. Without that, I think our staffing numbers fall, our attrition grows, we have a hard time hiring the couple of hundred people a year we need to hire, just to break even with that attrition.

On the other hand, we have to do it the right way, because we need to maintain our productivity and our organizational health. I think that is really the hard piece. With so many new employees coming to the agency, we need to acclimatize them, there is mentoring, it is harder to do that from afar. We want

to make sure meetings with applicants, with stakeholders, those are in-person days.

So the senior managers and staff are really focused on how do we make sure that the time employees are in the office is valuable in-office time, they are doing things they couldn't do easily from home.

We have some additional OMB guidance the staff is working through. We have to come up with what are the metrics, how do we make this work, what are the approaches we have to make sure that we strike a good balance not just in terms of the number of days people are at work versus when they are in their office. We don't want them to sit in their cubicle all day on a TEAMS meeting like they would be at home, because then they are going to be frustrated and feel like, why am I here. We want them to have the kind of collaborative experiences that are going to make that worthwhile.

Senator Cardin. My advice to you is, make sure it is in collaboration with the workers and their representatives. Their input becomes critically important, so they are part of the team in making that decision.

I have one last question dealing with direct hire authority, as to how critically important that is for you to retain or get the top expert staff. I know there is some legislation here that expands that authority. But how critical

is direct hire authority when you are carrying out your mission?

Mr. Baran. When I talk to our chief human capital officer, it is definitely one of the tools. I think we are leaning ever more heavily on interns and co-ops, getting people while they are still in school to intern or co-op, and then you can do direct hires right out of that. That is great not only because it speeds up the hiring process, but you have folks you already know and who already know the agency, and you have a high degree of confidence you are bringing someone in who is going to be very good and a good fit.

So an ever-larger number of the folks we have hired each year are coming from internships and co-ops and programs of that kind.

Senator Cardin. Thank you.

Senator Carper. I have served here with Ben for gosh, about 20 years or so. What we have done is we use the intern program. It is almost like in baseball, like the farm system, single A, double A, triple A, and then finally, the major leagues. This is the majors. They are part of our farm system. We rarely make a mistake when we use that system. Thank you.

Okay, we have been joined by Senator Ricketts. Welcome, good to see you.

Senator Ricketts. Thank you, Chairman Carper.

Mr. Baran, thank you very much for joining us. The Nuclear

Regulatory Commission is important to Nebraska and our Cooper Nuclear Station, which is an 835-megawatt facility, generates enough power for 385,000 homes. So it is a very important part of the overall energy mix for our State.

Then of course, you are overseeing the decommissioning of the Fort Calhoun Station that was closed down a while ago.

I think you said yourself that one of your main targets during your time on the Commission has been a strong focus on environmental justice. Do you agree that nuclear energy is the most reliable clean energy source we can produce with the current technology that is capable of providing that consistent baseload?

Mr. Baran. Yes, I think that is right. Maybe hydro as well, but yes.

Senator Ricketts. Very good. Do you agree that nuclear energy is critical to ensuring that we have that reliability in our Country, for the grid?

Mr. Baran. That is what I hear from grid operators and utilities, yes.

Senator Ricketts. Do you agree that a diverse grid mix allows for more consistent and affordable energy prices?

Mr. Baran. I am not really knowledgeable about that piece. We don't do the economic regulation part. But I think that is true, yes.

Senator Ricketts. So would you say that just in general, that a diverse power source or a diverse grid mix is an important part of an overall energy strategy? Is that fair?

Mr. Baran. Yes, that is what I hear from utilities.

Senator Ricketts. Okay, great.

And do you agree that a great way to support our unserved, especially in rural communities, is allowing affordable and reliable energy? Anybody who is low-income, reliable energy is a good thing?

Mr. Baran. Right.

Senator Ricketts. So, talk to me about the permitting process. My understanding is that the permitting process has taken longer, that the permitting for renewables is actually taking longer than the initials.

Can you talk to me about how you think the permitting process and what we can do to be able to improve that? Because nuclear I think is going to be an important part of our energy mix going forward, especially if we are going to be reducing a lot of carbon we are putting into the environment, an important part.

Talk to me about how you feel about permitting.

Mr. Baran. I completely agree that NRC needs to have an efficient and effective licensing process that can handle all the applications that come our way. It may be a significant

number in the next few years.

Right now, the staff and the agency are taking a number of steps to improve the efficiency of the process. One is, we have moved to core teams. In the past, we would have staff turnover on the team reviewing an application. Now we have moved to a core team model, where you keep the same staff on, you are not constantly re-educating folks on the application and the status. That has been an effective tool. The staff is going to continue to use that.

One of the things that often slowed things down in the past were formal requests for information, written questions that would go to the applicant. And it would often take weeks, months, to get responses back. There might be more questions, and it could get extended.

So the staff, I think there is always going to be a role for some written requests for information, but they are focused much more now on in-person checks, going out and visiting the applicant, show me your probabilistic risk assessment or show me the issues that they want to focus on. I think that is going to add some efficiencies to the process.

Pre-application engagement, we are seeing it becoming more and more substantive, resolving, even before the application comes in, getting alignment on some key technical issues. That is very valuable. We saw some of the applicants do that, and it

shrinks the amount of time pretty appreciatively that the staff then thinks the review will take when the application does come in.

One of the issues I think we have had over the years is hard issues don't get resolved right away. Sometimes they sit there. There is an increased focus among managers and supervisors to make sure we are elevating or resolving those issues.

We don't want to let something linger. Spot the issues earlier, figure out what are going to be the hardest aspects of an application, figure that out early, focus on it, elevate those, resolve them so they don't become something that lingers later on.

We talked about earlier, having a generic environmental impact statement for advanced reactors will speed up the environmental side of it.

There is more, there is an increasing focus on risk in the agency. The staff is now using probabilistic risk assessments from an applicant to target the most safety-significant aspects of an application to focus more of their attention there. That is a new development I think we will see more of. Even using data analytics to pinpoint the kind of biggest schedule vulnerabilities.

So there is a lot going on, a lot of these things are going



to advance further. But I agree with you, there is more work to do, and we need to have an efficient process.

Senator Ricketts. So the last thing you said about data analytics, what is the average time it takes right now to be able to get through the process?

Mr. Baran. I don't know that there is an average time, because we have different times associated with different types of applications. We also don't have too many that have come through with all this new stuff.

I can give you a concrete example of one of our recent applications. We have a new advanced reactor design from Kairos, first of a kind for the agency. They had a great pre-application period, resolved a lot of issues. Kairos did a great job, the staff did a great job.

The staff thought it would be a 22-month safety review. They are about four months ahead of that now, so I think it will end up being about a year and a half for the safety review.

Senator Ricketts. So you do measure how long it takes to go through the process?

Mr. Baran. Oh, yes.

Senator Ricketts. Great. And I know I am running over my time, Chairman, but one of the things that the Chairman has heard me here, it is not going to be about ethanol, just so you know, it is going to be about Lean Six Sigma. One of the things

we did at the State of Nebraska when I was governor is we focused on Lean Six Sigma. Are you familiar with Lean Six Sigma?

Mr. Baran. I am.

Senator Ricketts. Okay, great. So that was a great way for us to map out our processes, reduce the overlaps and cut the number of steps and thereby cut the amount of time it took us to issue permits in a variety of different areas.

So I would encourage you to encourage the Commission to look at how you can implement something like a Lean Six Sigma process for improvement methodology to the process as well. I think you will find that is another way to be able to shrink the time to be able to get things done.

Thanks, Mr. Chairman.

Senator Carper. We have 14 former governors now who serve in the U.S. Senate. It is a growing cabal of recovering governors. Last night the National Governors Association hosted an event on Capitol Hill. I had a chance to go by and commiserate with the newbies. It was a joy. It is a joy having you on this committee. Don't change.

Senator Sullivan raised the question, it was a good question, about what we mean by environmental justice. I am going to give you another chance to elaborate on that a little bit, if you would like.

When I think of environmental justice, I think about the words that show up in like every religion on the planet, Golden Rule, treat other people the way we wanted to be treated. I don't care if you are Mormon, I don't care if you are Jewish, I don't care if you are Muslim, I don't care if you are Hindu, Buddhist, Catholic, Protestant, every one of them has a Golden Rule.

When I think about environmental justice, I think, how would I want to be treated if I were in the shoes of folks who might be in a tribe in Alaska or a tribe in Arizona or an area in my State or some other State. For me, that is really how would you want to be treated if you were in the shoes of these folks.

The other thing that came to mind was an environmental justice quote, and I asked myself, who actually said these words. The quote is, people don't care how much you know until they know how much you care. I was thinking, maybe Maya Angelou or someone like that.

It wasn't, it was Teddy Roosevelt. Teddy Roosevelt, of all people. I think those words, especially coming from an environmentalist like him, a guy who was a rough rider, I would say those are pretty powerful words, and good ones for us to keep in mind.

We are going to be joined by a couple of other colleagues

here in a little bit. Maybe within seconds.

[Laughter.]

Senator Carper. As soon as you walked in the room, my staff handed me this note, and it has one word on it: "Lummis."

[Laughter.]

Senator Carper. We are going to let you take your seat and get settled in. We are always happy when you can join us. You are recognized for your questions and comments.

Senator Lummis. Thank you, Mr. Chairman. Thank you. I appreciate your wonderful attitude as chairman of this committee. You are a quality chairman.

Senator Carper. The lady is recognized for as much time as she would consume.

[Laughter.]

Senator Lummis. Good morning, Mr. Baran. Happy to see you again.

As Russia's invasion of Ukraine clearly laid bare, energy security is tied to national security. America currently imports about 20 percent of our nuclear fuel from Russia, and produces just a fraction of the uranium necessary to fuel our nuclear power plants.

The Atomic Energy Act established our Nation's nuclear energy policy as one that should provide for the common defense and security of our Country. That should directly apply to

uranium production.

Commissioner Baran, your record appears to contradict that policy. For example, you support imposing costly and unjustified new requirements on uranium in situ recovery facilities, the primary manner in which uranium is currently safely produced in my home State of Wyoming.

Do you agree that NRC's mission and its activities should be executed in a way that provides for our common defense and security?

Mr. Baran. Yes.

Senator Lummis. Do you believe that increasing America's uranium production will support our energy security?

Mr. Baran. Yes, I think with Russia's invasion of Ukraine, there is obviously a lot of interest in finding alternatives to Russian uranium.

Senator Lummis. Thank you. You have supported previous EPA efforts to impose additional groundwater monitoring requirements on ISR facilities. The NRC raised substantive and jurisdictional concerns with EPA's proposals. The previous Administration's EPA withdrew the rule and signed a memorandum of understanding with NRC in 2020, to clarify jurisdictional interests between the two agencies on their respective roles and responsibilities.

Do you consider NRC's position as agreed to in its MOU with

EPA a settled issue, and one that you will stand by going forward?

Mr. Baran. I don't see the MOU going anywhere with EPA. Obviously, EPA would have a say in that as well.

I guess my approach, I don't think the Commission has ever taken a position on the former EPA rule. I don't recall ever doing that. But in my mind, NRC does not have specific standards right now for in situ uranium recovery. We are doing it right now via basically license conditions. It is working, it provides some predictability.

But when I talk to applicants and licensees, they want to see greater predictability and they want to see a rulemaking that addresses all that. I think we have to get there.

The key consideration, or a key consideration I have in mind there is I would like to see us work together with EPA on that. Because we each have a regulatory role. If we were to go forward with a rule and then EPA were to come out with something that is inconsistent, we are going to have to redo our rule, which I think would be really silly.

In my ideal world, there would be a joint NRC-EPA process. We wouldn't be at odds with each other, we would be working under the MOU and we would be hearing the stakeholder views on what should a rule look like, and make sure we have all the -- they have been controversial issues -- make sure we have the

producers, we have the States, the tribes, the environmental organizations, hear from everyone, but work together so that we are actually in the end providing some predictability, rather than some sense of, well, this agency thinks this, what does the other agency think.

I think that was one of the pitfalls from when this was done several years back, or attempted to be done several years back.

Senator Lummis. Yes. And we do hear, in our States, concerns by business about future predictability, just knowing what is going to be the rule, so people can be prepared to follow it.

Commissioner Baran, I am extremely excited about the TerraPower reactor being built in my home State. It is about to submit its license application to the NRC.

However, my understanding is that both the NRC and the Department of Energy have to perform separate environmental reviews related to this project because it is being done through the Advanced Reactor Demonstration Program. On its face this seems duplicative and a waste of both private and public funding.

Is there any benefit to having two environmental reviews at both of these government agencies?

Mr. Baran. I haven't focused on that issue, but it doesn't

sound like it makes a lot of sense to me. I would like to see better coordination than that. I don't know why we would do two EISs for the same project.

Senator Lummis. We might reach out to you and have a discussion about that later. Obviously, we don't want this thing to drag on until after we are all deceased. It really would be nice to have that TerraPower reactor up and running.

One more question, Mr. Chairman. If you are confirmed, would you ensure the NRC and DOE work well together to minimize duplicative reviews?

Mr. Baran. Absolutely.

Senator Lummis. Thank you. Thank you for your kind indulgence, Mr. Chairman. I yield back.

Senator Carper. Thanks so much for joining us today, and for your questions and participation.

I had the privilege of spending a few minutes with Commissioner Baran earlier this week. When we spoke, you may recall talking with me about there being a ground shift in interest in nuclear power from the industry. I think you mentioned that it was thanks at least in part to the passage of the Inflation Reduction Act, some of the provisions, the clean energy provisions, that Senator Cardin and I led on. If you would just comment on that for the record, please?

Mr. Baran. Yes. I think the price signals that the



legislation sent had pretty much an immediate impact. When I would meet with utilities, it really changed the way they were thinking about investments.

So there was a certain amount of interest in subsequent licensing in the rule going from 60 to 80 years operation. That really ramped up. Now, almost every plant is contemplating it.

We haven't seen a lot of power uprates, in other words, modifications to the plants to get more power out of the existing plants. Now we have a whole slew of potential power uprates that are expected in the next several years, in addition just to more new reactor applications. So it had a significant and from my vantage point, almost an instantaneous effect on how the industry was thinking about long-term investments.

Senator Carper. I had a meeting with some of our colleagues, a bipartisan meeting in one of the rooms off the Senate Floor, we were voting on something, it was about a year ago. We were invited to stop by one of the meeting rooms on the second floor, off the Floor of the Senate. We had maybe 10, 12 ambassadors from European countries who were there. I don't know what brought them to Capitol Hill, but they were there. We had the opportunity to chat with them.

I remember asking at the time if the German ambassador, I said, we have I think it is close to 100 nuclear power plants in this Country, and some of them getting pretty old. We have a

decision to make to try to extend their lives or go ahead and shut them down. This was right after it became clear that the Germans having walked away from nuclear energy were now fully dependent on the Russians for natural gas.

I said to the ambassador from Germany, do you have any advice for us? He said, don't shut them down. Don't shut them down.

Another question, if I could. Would you take a minute or two and describe for us how to work to maintain or increase public confidence and transparency in the NRC's decision-making and regulatory process?

Mr. Baran. Yes. I really try to take an open-door approach to the work I do, and meet with a wide variety of stakeholders before making decisions, and meet with NRC staffers if they have different views or concerns. I want to make sure I am hearing kind of all of the different viewpoints before a decision is made.

I want to see the agency communicate in ways everyone can understand. Some of these issues are complex, very technical, a lot of them are. I am always working to see the agency communicate in ways, not just in the Federal Register or for a public meeting, formal public meeting, but in ways with language that everyone can understand.

I think there is, it comes up in the context of

environmental justice, but it isn't really solely an environmental justice issue, I think there is real value in standing up an office that is focused on public engagement and that can help stakeholders navigate some of the more complex processes we have and get the information they need.

Senator Carper. Thank you.

I am going to yield to my two colleagues if they would like to ask another question or two. I am happy to recognize you if you wish. I understand Senator Mullin may be trying to join us, so we will give him a few more minutes.

Senator Ricketts. Yes, if I could, I want to follow up on the comments you made about the upgrading of your facilities. What steps do you see the Commission taking to be able to help facilitate facilities and plants that are looking to do the upgrading? How long will that take?

Mr. Baran. There have been a lot of power upgrades over the years, so it is nothing new for the Commission. The applicant would seek a license amendment, and depending on how significant the modification would be, it could be really straightforward or a little more complex.

But we are already trying to get a good sense from applicants, when are they going to come in, make sure we are budgeted, and have the folks ready to review those. When I think about readiness for all these applications we are talking

about, new reactors, extended terms, power uprates, I want to make sure we can handle the full volume. It is going to be a larger volume than we are used to seeing in recent years and decades. I don't want to see us in a situation where people are queueing up, where we are triaging. I want to make sure we are able, we have the capacity, both the framework, the regulatory framework, the personnel and the efficient processes to do them all as they come in.

We need to meet that demand, from my point of view. I think that is an important responsibility that we have.

Senator Ricketts. Great. I am a cosponsor of the ADVANCE Act, which members of the committee have worked very hard to draft. One of the provisions included would reduce regulatory costs for the licensing of advanced nuclear reactor technologies. States like Nebraska conduct initial reviews regarding what advanced nuclear technology looks like. We actually in my State have passed some bills to encourage that investment in our State.

What are specific actions you would be willing to commit to working with this body and our States to ensure the expeditious implementation of these provisions?

Mr. Baran. Obviously, anything the Congress passed we would implement. We treat NEIMA and the other legislation that has been passed in recent years very seriously. So whatever is

coming through the process, we will plan for and will make it happen. We are going to implement it.

Senator Ricketts. Are you familiar with the ADVANCE Act and what the goal is there?

Mr. Baran. Yes. I have looked at it. I haven't memorized all the provisions but I have taken a good look at it. I think there are a lot of very good provisions in there.

Senator Ricketts. So you will commit to working with Congress to be able to push forward these advanced nuclear technologies?

Mr. Baran. Yes.

Senator Ricketts. Okay, great. Thank you, Mr. Chairman.

Senator Carper. Senator Lummis?

Senator Lummis. Thank you, Mr. Chairman.

TerraPower requires high assay low enriched uranium, I call it HALEU, to operate, and has already announced a delay on their start date due to a lack of fuel availability. While much of this delay is due to the DOE not yet moving forward on its HALEU program, the NRC has the important role of actually licensing the commercial HALEU facility.

Commissioner Baran, if reconfirmed, will you prioritize licensing HALEU enrichment facilities and how will you ensure the NRC and DOE work together, again, to minimize duplicative actions?

Mr. Baran. The short answer is yes. Actually, the NRC staff is already very focused on it. The Commission was just briefed a few weeks back on all the various applications that have been submitted, the ones that have been approved, the ones that are being reviewed, the ones that are coming. The staff is very focused on that and views it as a high priority. There is already a lot of interaction going on with DOE about that.

So we are on it.

Senator Lummis. Thank you. And if Mr. Markey is prepared, I will yield to him, but I also have another question, if he would like a minute.

Senator Markey. Go ahead.

Senator Lummis. Thank you.

Commissioner Baran, with overwhelming bipartisan support, Congress directed the NRC to establish a regulatory framework to license advanced nuclear reactors. The NRC staff has been actively working on this rulemaking, known as Part 53. It is critical to get this rule right to facilitate the deployment of new carbon-free nuclear power plants.

As you discussed in your vision for this Part 53 framework, you said adequate protection is the minimum NRC is charged with doing under the Atomic Energy Act, not the maximum. Adequate protection isn't the ceiling, it is the floor. The agency has required many important safety measures over the years that went

beyond adequate protection.

Do you believe the Atomic Energy Act requires any regulatory safety threshold beyond reasonable assurance of adequate protection?

Mr. Baran. I haven't studied that precise legal question. I can say that court opinions over the years and our backfit rule really contemplate two types of requirements. There are adequate protection requirements, which is the floor. We can't do less than that, and we can't consider costs of that. That we have to do, we have to adequately protect the public.

Under our backfit rule we also have what are called cost-justified substantial safety enhancements. These are, if you could get a lot of improved safety off something and it passes cost benefit, that is also something the NRC has required over the years.

The point I was making there, and I don't think it is really a controversial point, some of our most important rules have been the latter kind of rule. Not everything we have done has been necessary for adequate protection.

I will give you one quick example, which is the maintenance rule. You talk to anyone, in industry, in the agency, the maintenance rule is one of the most significant things the agency ever did. It was not an adequate protection rulemaking, it was a cost-justified substantial safety enhancement.

So I am not envisioning that Part 53 requires more than we have in the existing regulations. But you are going to require the same level of safety. To require the same level of safety, you will have things like the maintenance rule that are beyond adequate protection.

Senator Lummis. Can you describe some of those issues that are part of the Part 53 proposal that go beyond adequate protection?

Mr. Baran. I think anything that tried to track the existing regulation in terms of the level of safety, where the requirement was not an adequate protection requirement would be carried over in Part 53. For example, they do have provisions on maintenance.

So we are all digging into this now. The Commission has had it for a few weeks now, we are all digesting it, going through it. There are several issues that are coming up that we are hearing from a lot of stakeholders. One is, it is a performance-based rule. So what is the performance standard? There is a lot of disagreement about that. Should you use the quantitative health objectives that were from the 1980s as the performance standard?

There is a question of how should we treat what is called ALARA, as low as reasonably achievable, doses. That has traditionally been policy and has some elements in rule. But



should that be a design principle or an operating principle? It is a key issue.

There is a new concept that the staff came up with that included facility safety programs. There has been a lot of concern about that, and staff thinks it is a good idea. We want to look at that, does that make sense.

Some of these might be in that kind of margin you are talking about, is this really adequate protection, does it go beyond adequate protection, does it go beyond what we have as the existing kind of level of safety. We are going to be looking at all those issues, taking a hard look at them.

Senator Lummis. How do you evaluate whether something is cost-justified?

Mr. Baran. That is a regulatory analysis, a cost-benefit analysis, that is going to be as quantitative as it can be. But often we will look at qualitative factors as well, if you can't quantify something.

Senator Lummis. Thank you, Commissioner Baran. And thank you, Mr. Chairman.

Senator Carper. You bet. Thank you so much for being here and for your questions.

Senator Markey?

Senator Markey. Thank you, Mr. Chairman. I appreciate it.

Senator Carper. We have something, Commissioner, once a

year we have a spouse's dinner, those of us who have spouses are invited to bring them to Washington if they don't live here. We have dinner together. People around the Country think we are always fighting with one another and we never have a good work to say about folks on the other side of the aisle.

I wish they could have seen it last night. I sat at the same table with Democrats and Republicans alike. It was just a real source of joy.

Our President has a lot of sayings, I have heard most of them. One of them is, all politics is personal, all diplomacy is personal. I was reminded of that last night.

Senator Markey?

Senator Markey. It was a great night, a really great night.

Commissioner Baran, since 2014, you have been a strong addition to the Nuclear Regulatory Commission. I have always appreciated your and your staff's willingness to speak to me about questions and concerns I have had about the Nuclear Regulatory Commission proceedings, particularly those surrounding the decommissioning rule, the reactor oversight process and the operations of the Pilgrim and Seabrook Nuclear Power Plants. Your breadth of knowledge on the issues you work on and your passion for supporting NRC, resident inspectors and plant workers are truly admirable.

As the longest-serving commissioner currently on the Nuclear Regulatory Commission, you have significant institutional knowledge and a strong understanding of the inner workings of the Commission. You have worked on a wide variety of issues, including recent rulemakings regarding advanced nuclear reactors, fusion and decommissioning.

Can you just give us a brief understanding of how you evaluate these novel regulatory proposals that are now under consideration?

Mr. Baran. I try, as I do for all decisions or voting matters, try to have an open-minded, collaborative approach. I want to hear from the NRC staff and a wide range of stakeholders before I form an opinion.

I also want to hear what my colleagues think about it. There are five of us and everyone brings their own views and perspectives. But in the end, my goal is to have a balanced, thoughtful approach to the tough issues.

Senator Markey. Thank you. During your time as a commissioner, you have also experienced what it is like to serve on both a full commission and one with vacancies on it. If your nomination is not confirmed before your term expires at the end of the next month, the Commission would again have a vacancy and would not be operating at full capacity.

Can you share your perspective on the importance of having

a full commission?

Mr. Baran. Sure. I have been on the Commission when we had three commissioners, four commissioners, five commissioners. A couple of times almost two, which is really to be avoided.

Based on my experience, I would say a full Commission, five is ideal. There is a reason why Congress set five, and it is because you have a good number of people with different perspectives and views and you hash things out. It is a good process and a good way to make decisions.

When I think about this particular time, it is really an important time for the nuclear sector and for the agency. These next few years, we need an active NRC that is going to do a lot of things and make a lot of decisions. We need the advanced reactor framework in place, the small modular reactor framework, the fusion framework, decommissioning. There is so much that needs to be done that a complete Commission will really help make that happen.

Senator Markey. I agree with you 100 percent.

Throughout your time on the Nuclear Regulatory Commission, I have expressed my concerns about the issue of alkali silica reaction at the Seabrook Nuclear Power Plant. Seabrook is the first plant in the Nation known to suffer from alkali silica reaction, which is a process that leads to cracking and degradation of concrete over time.

In one example, severe cracks were found in Seabrook's reactor cavity pit by employees as early as 2012, but they weren't identified as product of alkali silica reaction until a Nuclear Regulatory Commission inspector properly diagnosed it in 2021.

More than a year and a half later, the NRC inspectors found that Seabrook's owner, Next Era, had failed to take the steps required by the Commission to ensure that proper alkali silica reaction protocols were being followed.

Will you continue to work with me to ensure that Next Era is properly managing alkali silica reaction at Seabrook?

Mr. Baran. Yes, of course.

Senator Markey. I think that is just so important. It is like human beings, we have invented little pills we can take for our cholesterol, make sure our arteries are clear. Most of us try to take those little pills, kind of a big difference from a preceding generation.

Well, the same thing happens to older nuclear power plants, they start to have these changes that occur, and this is one that has been identified but hasn't been properly dealt with.

So we just need to make sure that if we want to continue to have these plants get older and older and older, that we also build in the safeguards. So taking your Lipitor each day is kind of the equivalent for what we are asking for in terms of

Next Era installing to protect against the alkali silica undermining the concrete at a nuclear power plant.

In your testimony you mentioned your frequent visits to nuclear power plants and other NRC facilities. What has your experience taught you when you visit these plants?

Mr. Baran. I have been to probably about 40 operating nuclear power plants, including Seabrook, during my time at the Commission. I get a lot out of those visits. Obviously, you get to see the equipment and the technology first-hand. That is valuable.

But I think really the more important thing is the opportunity to talk to the people. I get to talk with our resident inspectors, I get to talk with the licensee managers and workers there, operators. I get to talk to the local union. And I get to hear about their priorities, their concerns. There is nothing like talking to people face to face to get a sense of how things are going at a plant.

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

Senator Carper. Senator Markey, thanks so much for joining us.

I want to just ask if there might be a question you haven't been asked that you wish you had been, and you would like to answer it anyway. What have you not been asked that you would like to answer?

Mr. Baran. When you asked Christine Svinicki this question a few years back, she had also been a long-serving commissioner, then chairman. She took the opportunity to talk about why she was interested in another term.

I am really excited about these next five years. They are just going to be a critical five years for the energy sector, for the nuclear sector, for our focus on energy security and climate.

I want to be a part of that. I want to see and participate and contribute to the advanced reactor framework and small modular reactors and fusion. There was a big announcement today on fusion, the first power purchase agreement for the late 2020s on fusion. Amazing.

And so there are a lot of exciting things happening. I want to be around for that. I want to make progress on environmental justice and complete some of these important rulemakings that we have going. Some of them take longer than they really should, and I am looking forward to seeing them through to the end.

So my colleague, David Wright, recently has been talking about this and how important this period of time is. He has said there is just nowhere he would rather be right now than at NRC on the Commission. I feel the same way. I am excited to work with my four colleagues to meet the moment.

Senator Carper. Good.

When we had the full Commission here before us a couple of weeks ago, ironically, I go home most nights to Delaware, and I drive to the train station, jump on a train. I was listening to music in my car. Sometimes the news, but oftentimes music.

That morning I was driving to the train station, I heard Carly Simon sing "Coming Around Again." I thought that could almost be the theme song here for the nuclear industry.

I don't know that Albert Einstein was a big Carly Simon fan, but I do know that he used to say a lot, in adversity lies opportunity. God knows we face plenty of adversity on so many fronts, but we have way too much carbon in the air and it is getting worse. We have the opportunity to turn that around.

We have spent fuel, and it is piled up in a lot of places around the Country. The idea of somehow actually being able to use that spent fuel to derive more energy out of it to meet our energy needs is something that is exciting.

I have been waiting forever for fusion. I am glad I lived long enough to see the day come when it is going to be real and it is going to help us meet our energy needs here and around the world. I want to thank you again for appearing before us today.

Before we adjourn, some housekeeping. I would like to ask unanimous consent to submit into the record a variety of materials relating to today's hearing, including a letter of



support from the International Brotherhood of Electrical Workers, also known as the IBEW.

[The referenced information follows:]

Senator Carper. The last thing I would mention is in terms of the questions for the record, as you know, we give our colleagues the opportunity to submit those. They have until Wednesday, May 17th, to do that. We would ask that you reply to those questions for the record by May 24th.

It is nice to be with you again. Thanks to our members who came and stayed for this important hearing, to grasp the opportunity we have before us. I think it is important that we do that. We need a strong Commission. We need wonderful and dedicated people working at the NRC.

I remember a time when the NRC was the most sought-after place to work in the Federal Government, year after year after year. I look forward to the day, not that far in the future, when it is again.

With that, this hearing is adjourned. Thanks, everyone.

[Whereupon, at 11:30 a.m., the hearing was adjourned.]