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AMERICAN NUCLEAR ENERGY EXPANSION: UPDATING POLICIES FOR EFFICIENT, PREDICTABLE LICENSING AND DEPLOYMENT

TUESDAY, JULY 18, 2023

House of Representatives,

Subcommittee on Energy, Climate, and Grid Security,

Committee on Energy and Commerce,

Washington, D.C.

The subcommittee met, pursuant to call, at 10:01 a.m. in Room 2123, Rayburn House Office Building, Hon. Jeff Duncan [chairman of the subcommittee], presiding.

Present: Representatives Duncan, Burgess, Latta, Guthrie, Griffith, Johnson, Bucshon, Walberg, Palmer, Curtis, Lesko, Pence, Armstrong, Weber, Balderson, Pfluger, Rodgers

(ex officio); DeGette, Peters, Fletcher, Matsui, Tonko, Veasey, Kuster, Schrier, Castor, Sarbanes, Cardenas, and Pallone (ex officio).

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Also present: Representatives Allen, Carter; and Trahan.

Staff Present: Kate Arey, Digital Director; Sarah Burke, Deputy Staff Director; Marjorie Connell, Director of Archives; Sydney Greene, Director of Operations; Jack Heretik, Press Secretary; Nate Hodson, Staff Director; Tara Hupman, Chief Counsel; Sean Kelly, Press Secretary; Peter Kielty, General Counsel; Emily King, Member Services Director; Mary Martin, Chief Counsel; Jacob McCurdy, Professional Staff Member; Brandon Mooney, Deputy Chief Counsel; Kaitlyn Peterson, Clerk; Karli Plucker, Director of Operations (shared staff); Carla Rafael, Senior Staff Assistant; Emma Schultheis, Staff Assistant; Olivia Shields, Communications Director; Peter Spencer, Senior Professional Staff Member, Energy; Michael Taggart, Policy Director; Dray Thorne, Director of Information Technology; Kris Pittard, Minority Staff Assistant; Emma Roehrig, Minority Staff Assistant; Kylea Rogers, Minority Policy Analyst; Medha Surampudy, Minority Professional Staff Member; and Tuley Wright, Minority Staff Director, Energy, Climate, and Grid

Security.

*Mr. Duncan. The Subcommittee on Energy, Climate, Grid Security will now come to order. The chair recognizes himself for five minutes for an opening statement.

Today the subcommittee will continue its bipartisan work to develop legislation to help accelerate the expansion of American nuclear technology. We want to make sure the relevant laws and policies are up to date and enable the full promise of nuclear energy for the nation and our commercial and strategic relationships around the globe.

The importance of American nuclear leadership and building our commercial relationships was underscored during our recent CODEL to Japan and Korea, with Ranking Member DeGette and several subcommittee colleagues. What we do here can help these relationships in the years to come, but our goal is to advance durable and bipartisan policies that will expand nuclear energy and its many benefits for the nation, policies that make sense for the regulation of nuclear power today and the new technologies expected to seek licensing and deployment in the coming years.

This was the purpose of the bipartisan request for information to stakeholders that Chair Rodgers, Ranking

Member Pallone, DeGette, and I made back this past April. In the responses we received and the hearings we have had to date, it has become clear, more clear, that more can be done to update how both the Nuclear Regulatory Commission and the Department of Energy implement their respective missions, and there is growing recognition of the urgency to implement reforms.

This discussion draft today and the bills up for review today seek to make changes in law and regulation to align agency actions with the nation's broader goals for advancing nuclear energy. These also reflect several of the key recommendations from stakeholders. For example, in a draft I intend to introduce we would align in statute the mission of the NRC and the -- with the policy goals of the Atomic Energy Act to expand nuclear to maximum -- maximize the general welfare. They should help foster nuclear, and not be an impediment to nuclear development in this country.

Several draft bills would improve the efficiency and predictability of NRC licensing by requiring more effective decision-making milestones, timeframes, and metrics to measure the performance and results. They should avoid

duplicative analysis and citing environmental reviews and updating the reviews to reflect the realities of advanced technologies; seeking new regulatory processes for advanced manufacturing and technologies for more efficient and timely licensing; cutting the hourly fees the NRC charges in half for new advanced reactor applicants to reduce barriers to participation; and reforming a key advisory committee to the NRC to focus on new and novel technologies, and reduce unnecessary reviews.

Another bill, following recommendations made by the NRC itself, would eliminate a superfluous commission hearing at the end of the licensing process that no stakeholders have requested.

An additional discussion draft aims to update NRC practices to incorporate more efficient oversight to free up resources to focus on safety-significant matters.

These are good examples of reasonable, widely supported improvements that will make more effective, efficient, and predictable regulations.

Other bills also involve the Department of Energy. For example, legislative provisions would update DoE's nuclear

export reviews in its role to promote nuclear among our allies.

Other provisions would remove barriers to foreign investment in American projects by our allies, and would extend the critical liability protections necessary for nuclear and many DoE operations.

I should note that not all the provisions today will make it forward in their current form in the process. That is why we have legislative process, hearings, information sharing. The goal today is to gather information and discussion, identify issues, and find improvements so we can ensure more efficient, predictable regulation and oversight. Today we will hear from two witnesses.

First we will take testimony from two top officials from the Department of Energy and the NRC. I am looking forward to their testimony and perspectives and information on current and future activity, and how reforms may assist the agencies.

Our second panel will include four representative stakeholders: the Breakthrough Institute, the Nuclear Energy Institute, the Good Energy Collective, and a former NRC

commissioner who is representing the U.S. Nuclear Industry Council. So welcome to you all. This is a solid lineup for what should be a very productive hearing.

Finally, let me remind people that modernizing the NRC and DoE authorities does not mean moving away from principles of safety. It means ensuring regulations are updated to reflect the advances and capabilities of the nuclear industry today. The United States has the technological and engineering talent and capabilities to be the global leader in nuclear energy. Our regulatory system must operate in reflection of this fact if we are to succeed in our nuclear goals.

[The prepared statement of Mr. Duncan follows:]

**********COMMITTEE INSERT**********

*Mr. Duncan. I will now recognize Ranking Member DeGette for five minutes.

*Ms. DeGette. Thank you so much, Mr. Chairman, and I agree. One thing our Japan trip taught us is that the U.S. can be the leader in nuclear energy and safety, and I thought it was an important trip.

I also think that today's conversation is an important opportunity for us to learn and find ways to support a nuclear industry that emphasizes public health and safety. I have said this before in previous hearings: Nuclear energy has the potential to meaningfully drive down our emissions as we transition to zero-carbon energy.

We all know the statistics, but they are worth repeating. Currently, nuclear energy makes up nearly 20 percent of the electricity we generate in the United States and nearly half of the carbon-free electricity that we generate. And so, as we continue to move towards a clean energy transition, nuclear energy could supply a significant portion of the carbon-free baseload power we need in the future.

Now, I say "could'' for a very important reason. We can

only invest deeply in the nuclear industry if we continue to prioritize public health and safety before everything else. And so to that end, Mr. Chairman, I want to thank you for including my NRC workforce bill in this hearing, along with Representative Levin's bill.

As the lead safety regulator of nuclear energy and nuclear materials, the Nuclear Regulatory Commission has an incredibly important role in this prioritization. It is critical that the NRC has the staff, tools, and resources it needs to operate at the highest level possible. The staff component, especially.

Back in May, when we had our NRC oversight hearing, Chairman Hanson stated in his testimony that, to achieve its goals, the NRC must maintain a highly-qualified workforce. But currently, one-third of the NRC staff is eligible for retirement. This expected attrition, in addition to the anticipated increase in reactor applications, creates a challenge for the NRC as it completes its work, and that is why I introduced the Strengthening the NRC Workforce Act of 2023.

This bill is simple. It gives the chairman of the NRC

direct hire authority during candidate shortages or when there is a critical hiring need for certain positions. The authority is similar to the direct hire authority that Congress gave to the Federal Energy Regulatory Commission in the Energy Act of 2020.

Additionally, it would allow the NRC to increase its existing employees' compensation, helping the NRC to retain staff. As the lead nuclear safety regulator, it is important that the NRC has the full workforce it needs to complete its work.

And as I mentioned, I was also pleased to see Representative Levin's NRC Office of Public Engagement and Participation Act of 2023, which would establish the Office of Public Engagement and Participation at the NRC.

One of the most important parts of any energy project is, obviously, community input. We can't act like public participation is inconsequential, especially in this arena. And in fact, we know that a lack of public participation eventually slows projects down. But early meaningful public engagement allows developers to avoid issues and make the changes that are necessary to stop unnecessary slowdowns.

Additionally, as we are all aware, nuclear energy is an incredibly complicated and sometimes contentious topic, to say the least. And the office established by Representative Levin's bill would give communities the support that they need to fully understand the impact of a project. We cannot sacrifice public health and safety, and we cannot ignore the voices of those most directly impacted by energy development, and I think that these two bills help address both of the issues.

Now, there are, of course, some bills that we are considering that concern me. Some of them would cut down on the review process, eliminate critical hearings, and expedite the licensing process. The highest standards of public safety and health can't be sacrificed for the sake of rushing projects through. And Mr. Chairman, I know that is not your intention, I just want to make sure these bills don't have that impact because it could be a recipe for careless mistakes that could lead to disasters.

And so I am looking forward to the conversation today, and I am hoping that the majority will work with us so that we can do what the chairman says, which is update our

procedures, update our protocols, but at the same time not sacrificing any public safety or health.

[The prepared statement of Ms. DeGette follows:]

**********COMMITTEE INSERT**********

*Ms. DeGette. And with that I yield back.

*Mr. Duncan. And let me reiterate to her point safety and security. Security of fuel spent, et cetera, some of the things we talked about in Japan. That was the focus of the CODEL, to look at safety and what Japan, Korea were doing to propagate nuclear power in a safe manner in the post-Fukushima world.

So with that I will recognize the chair of the full committee Chair Rodgers, for five minutes.

*The Chair. Thank you, Mr. Chairman. Good morning, everyone.

Today we continue our work on restoring American leadership in nuclear technology and energy. It is critical to both our economic and national security. Expanding American nuclear energy and increasing deployment of American nuclear technology both here and abroad is essential for reducing emissions, providing reliable, affordable, clean energy to Americans, and for building durable economic and strategic relationships around the world.

In 1954 Congress established the Atomic Energy Act, which has been foundational to our nuclear leadership for

nearly 70 years. Today the Atomic Energy Act remains a guide to us to build common defense and security, and to capture the peaceful benefits of nuclear technology. It states, "to make the maximum contribution to the general welfare'' to "increase the standard of living, and strengthen free competition and private enterprise.''

This is the policy that has stirred the development of American nuclear leadership, incentivized our innovators, and enabled American industry to lead the world in nuclear energy for more than 40 years. As a result, American innovation and nuclear energy deployment remains the dominant designs around the world. We set the global standard for safety and security that continues to this day.

America must continue to lead, especially as our adversaries actively challenge our nuclear leadership. China and Russia seek to dominate emerging nuclear markets and control supply chains for these technologies and for fuels. In recent years their influence in these markets has grown. Energy and Commerce must lead the way to reverse this trend.

Fortunately, we know our allies are eager for American nuclear leadership and technology. We saw this on recent

visits to the Czech Republic and Poland, nations who have embraced the promise and security of nuclear technologies, seeking American knowhow and support.

The American nuclear energy is ready to lead from NuScale, TerraPower, GE-Hitachi, X-Energy's small nuclear reactors to OKLO, and Project PELE's micro reactors, and the new operating AP-1000 reactors at Plant Vogtle in Georgia. These are the kinds of innovative technologies that Poland and other U.S. allies are looking for to win the future.

In order to restore American leadership and unleash these new technologies, both at home and abroad, there is an urgent need to make sure the licensing, regulation, and oversight of the nuclear industry is predictable and efficient, is risk-informed, performance-based, and protective of health and safety, and serves the foundational policies that Congress has established. This was the clear message from many of the stakeholders who responded to our bipartisan request for information this April.

Many of the bills we discuss today reflect an effort to meet the needs expressed by nuclear policy thought leaders. Several bills refocus the Nuclear Regulatory Commission and

the Department of Energy to ensure they are carrying out the foundational nuclear policies that have been established by Congress. These bills would update how agencies implement their responsibilities to be sure they will be efficient, predictable, and risk informed. They will also ensure that the agencies will not get away -- not get in the way of innovation and deployment, but instead serve the national interest by providing for the safe, reliable deployment of nuclear energy.

Today we will examine in more detail what these bills will do, and discuss how they have been enhanced, how can -- how they can be enhanced. And, you know, while we may have some differences on some of the legislation with my colleagues on the other side of the aisle, I am hopeful this hearing can help us address those differences and continue the process for developing bipartisan legislation.

This is how we win the future, restore American nuclear leadership, strengthen our energy security. So I thank the witnesses, all the witnesses, for being here today.

[The prepared statement of The Chair follows:]

323 **********COMMITTEE INSERT**********

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*The Chair. And I yield back.

*Mr. Duncan. Thank you, Madam Chair. I will now recognize Mr. Pallone, the ranking member of the full committee, for five minutes.

*Mr. Pallone. Thank you, Mr. Chairman.

Nuclear power plays an important role in producing carbon-free power for the electric grid. In April this subcommittee held a hearing examining the current and future nuclear energy landscape. And just last month we had all five commissioners from the Nuclear Regulatory Commission before us to talk about the NRC's vital work. Those hearings have been the most bipartisan hearings we have had this Congress on the Energy Subcommittee, and I certainly hope today's hearing continues that tone as we examine ideas to improve America's nuclear power policies.

The NRC has done an admirable job over the years of ensuring nuclear power is safe and secure. We must now find ways to make the NRC's work more efficient without compromising on the high safety standards that it has held for itself and the nuclear industry as well. And I look forward to hearing from our witnesses across both panels on

how the 15 bills included in today's hearing advance that goal, and where they fall short and need to be improved.

I think there are some good bills before us today, while some need improvement. And I am hopeful that we can work together on these bills so we can enable the NRC to safely and efficiently license our nation's nuclear reactors for the future. I want to briefly highlight a few of the bills.

I am particularly interested in Ranking Member DeGette's bill, the Strengthening the NRC Workforce Act, which would allow the NRC to enjoy the Alternative Compensation Authority we granted to FERC back in the Bipartisan Energy Act of 2020, as well as direct hire authority. This would allow the NRC to attract and retain talent and expertise, something that will be critical as we ask it to license advanced reactors.

And then there is Representative Levin's bill, the NRC Office of Public Engagement and Participation Act. It would create an Office of Public Engagement and Participation at the NRC, modeled off FERC's Office of Public Participation. Last month in our hearing with the NRC commissioners I asked Chairman Hanson about the concept, and he indicated that he would be supportive of it. The purpose of an Office of

Public Engagement and Participation would be to demystify the NRC and increase the ability of communities impacted by its decision to axe its proceedings. And I look forward to getting feedback on this bill today, and I am working with the majority to find a way forward on it.

I would also like to mention the discussion draft based on Representative Latta's bill, the Nuclear Fuel Security Act. I support this bill so much that I offered it as an amendment during subcommittee and full committee markups of H.R. 1042, and I am pleased to see that it has been included in this hearing with relatively few changes. I hope my Republican colleagues have reconsidered voting no on it twice. Nuclear fuel security is a vitally important issue, but we can't just ban Russian uranium without ensuring that there will be an American supply chain to replace it.

While I support all three of these bills, there are some bills I have concerns with and would like to see changes to.

The Nuclear Advisory Committee Reform Act would potentially diminish the Advisory Committee on Reactor Safeguards by only requiring the committee to weigh in when requested by the NRC. I am afraid this could create another

layer of unintentional bureaucracy, or sideline the ACRS all together.

The Efficient Nuclear Licensing Hearings Act would remove the requirement that NRC hold hearings on new reactors, which could diminish public confidence that the NRC is holding nuclear power plants to a sufficient level of scrutiny.

And finally, the NRC's -- the NRC Mission Alignment Act would change and codify the mission of the NRC. It is a substantial expansion of the NRC's authority that I do not believe is necessary, and could undermine its independence. It could also send a bad signal to countries working to set up nuclear power regulatory regimes overseas who often look to the NRC as a model of an independent nuclear regulatory -- or regulator.

Now, over the last four years Democrats passed major legislation like the Energy Act of 2020, the Bipartisan Infrastructure Law, the Inflation Reduction Act, all to support safe and clean nuclear power, including investments at the Department of Energy. These laws included historic climate investments to help us lead the rest of the world in

the transition to clean energy, while also creating millions of good-paying, clean energy jobs, and lowering energy costs for Americans. So I am hopeful that we can now work together to build on these successes.

[The prepared statement of Mr. Pallone follows:]

**********COMMITTEE INSERT**********

*Mr. Pallone. And with that, Mr. Chairman, I yield back.

*Mr. Duncan. Mr. Pallone, that is a very southern suit you have got on this morning, so looking good.

*Mr. Pallone. Jersey Shore.

*Mr. Duncan. We now conclude with members' opening statements. The chair would like to remind members that, pursuant to the committee rules, all members' opening statements will be made part of the record.

I want to thank, and we want to thank all of our witnesses for being here today and taking time to testify before the subcommittee. Each witness will have the opportunity to give an opening statement, followed by a round of questioning from members.

And there is a panel of lights in front of you. You have five minutes. I ask you to stay within that. It is going to go green, yellow, red. Just keep in mind that.

Our witnesses for the first panel are Dr. Michael Goff, principal deputy assistant secretary for the Office of Nuclear Energy at the Department of Energy; and Daniel Dorman, executive director of operations for the U.S. Nuclear

Regulatory Commission.

Again, we appreciate you being here today. I will now recognize Mr. Goff for five minutes for an opening statement.

STATEMENT OF MICHAEL GOFF, PRINCIPAL DEPUTY ASSISTANT SECRETARY, OFFICE OF NUCLEAR ENERGY, DEPARTMENT OF ENERGY; AND DANIEL DORMAN, EXECUTIVE DIRECTOR OF OPERATIONS, U.S. NUCLEAR REGULATORY COMMISSION

STATEMENT OF MICHAEL GOFF

*Dr. Goff. Good morning and thank you, Chairman Duncan, Ranking Member DeGette, Chair McMorris Rodgers, Ranking Member Pallone, and the distinguished members of the committee. I am honored to appear before you today representing the Department of Energy, and I look forward to discussing the nuclear energy issues and legislation under consideration by this committee.

The Department does not have an official position on the bills you are considering today, but we appreciate the committee's longstanding bipartisan support for the Department's civil nuclear activities and the broader civil nuclear industry.

*Mr. Duncan. Can you pull that mike a little closer to -- or straight on?

*Dr. Goff. Sorry.

*Mr. Duncan. Thank you so much.

*Dr. Goff. To swiftly reduce our carbon emissions and rebuild U.S. leadership globally, the Biden-Harris Administration is prioritizing activities that keep the existing fleet of nuclear power plants in operation, that deploy advanced reactor technologies, that secure and sustain the nuclear fuel cycle, and that expand international nuclear energy cooperation.

Nuclear energy provides emissions-free, firm power necessary to underpin the transition to a carbon-pollution-free electric grid by 2035. New reactor deployments also have the potential to decarbonize industrial applications in support of the net zero by 2050 goals set by the United States and our partners around the globe. Ensuring this future for our nation and our allies must include a secure and reliable source of fuel for today's nuclear power plants and those of tomorrow.

The Department is working to address these energy security challenges in the face of ongoing global events. In 2022 the United States purchased 24 percent of the enriched

uranium for commercial nuclear reactors from Russia. We cannot continue to infuse the Russian state with this source of income.

As you know, there is no quick, easy path to reduce our dependance on Russian-supplied fuels. Expanding our domestic fuel capacity will require strategic investments coupled with import restrictions that protect those investments well into the future. We must act swiftly to support domestic enrichment capabilities and prepare our industry for this transition. The Department welcomes the opportunity to work with Congress to address this national security vulnerability.

The United States and our allies share common visions of democracy, as well as safe and secure global economic and energy systems. In the June 2022 Group of Seven Leaders communique, the United States and our G7 partners made clear our collective intent to reduce reliance on civil, nuclear, and related goods from Russia, including working to assist countries seeking to diversify their nuclear fuel supply chains.

To this end, the United States, Canada, France, Japan,

and the United Kingdom have identified potential areas of collaboration on nuclear fuels to support the stable supply of fuels for the operating fleets of today, and to enable the development and deployment of fuels for advanced reactors of tomorrow, and to achieve reduced dependance on Russian supply chains. This multilateral effort would aim to leverage the unique resources and capabilities possessed by each country's civil nuclear sectors to establish a global commercial nuclear fuel market.

Collaborating on strategic opportunities in the uranium extraction, conversion, enrichment, and fabrication supports our collective energy climate goals and economic resilience objectives. This multilateral cooperation would enable us to strengthen our domestic sectors and establish a level playing field to compete more effectively against predatory suppliers.

Thank you for the opportunity to appear before the committee today. I appreciate the important items such as implementing long-term power purchase agreements, supporting initial licensing of new reactor technologies, addressing fuel needs, and focusing on U.S. exports that you are

considering to ensure that nuclear energy is a critical part of our energy mix to meet our climate goals and our energy and national security needs. Those actions have the potential for the Department of Energy to further enhance licensing activities, deployment activities, and the export of U.S. advanced nuclear technologies.

I look forward to continuing to work with you toward a more sustainable, equitable, reliable, affordable, safe, and secure energy system for our nation, and I also look forward to addressing your questions. Thank you.

[The prepared statement of Dr. Goff follows:]

**********COMMITTEE INSERT**********

*Mr. Duncan. Thank you, Dr. Goff, and I will say I am thankful for the engagement we have had with Assistant Secretary Huff, as well on these issues.

I will now recognize Mr. Dorman for five minutes.

STATEMENT OF DANIEL DORMAN

*Mr. Dorman. Thank you, Chairman, Chair Duncan, Ranking Member DeGette, Chair McMorris Rodgers, Ranking Member Pallone, and distinguished members of the subcommittee. My name is Dan Dorman, executive director for operations at the NRC. I welcome this opportunity to provide the staff's views on bills under consideration. I will briefly address our regulatory framework for new and advanced reactors, the environmental review process, and international cooperation.

As industry is developing new and advanced reactor designs, our staff is reviewing pre-application materials and submitted applications commensurate with the risk and safety significance of the proposed technology. NRC has worked hard to modernize its existing licensing processes to support the deployment of new and advanced reactors through the application of risk-informed and performance-based techniques and regulatory guidance.

Our streamlining and efficiency efforts include extensive pre-application interactions, regulatory audits to enhance communication with applicants and licensees, and

early engagement with the NRC's Advisory Committee on Reactor Safeguards.

In addition, we are ahead of schedule in developing a new optional regulatory framework for licensing new reactors in accordance with the Nuclear Energy Innovation and Modernization Act, or NEMA. In March the staff submitted a draft framework known as the Part 53 Rule to the Commission for its consideration. The rule would establish a technology-inclusive, risk-informed, and performance-based regulatory framework for licensing and oversight of new commercial nuclear power plants.

NRC is also looking at how it assesses fees for reviewing new and advanced reactor applications to ensure they are fair and equitable. NEMA requires NRC to build entities for regulatory activities performed. The fees incurred for any given project will vary based on the type and quality of the application, the novelty of the technology, and the complexity of the proposed design.

NRC clarified the applicability of its variable annual fee structure for Small Modular Reactors, or SMRs, to make it clear that non-light-water SMRs are included. This

clarification allows the agency to be technology-inclusive, and establish a fair and equitable approach for assessing annual fees to all new and advanced reactors, which would lower fees for many of these applicants.

The NRC continues to assess and implement processes to streamline our environmental reviews while still complying with the National Environmental Policy Act and related laws. We are working aggressively to implement the Commission's direction to ensure that NRC's environmental regulations supporting analyses, and guidance fully support the subsequent renewal of nuclear power plant operating licenses from 60 to 80 years.

We are also aware that industry is interested in using so-called brownfield sites such as former coal plants or shuttered nuclear power plants to use the existing infrastructure and workforce. If we receive applications for new nuclear plants at these types of sites, existing data about the sites could be leveraged to support improving the efficiency of our environmental review.

The NRC's international portfolio includes import and export licensing obligations and a broad range of

international cooperation and assistance functions. To prepare for the export of advanced reactor technologies, NRC has initiated a rulemaking to clarify that its export regulations include non-light-water reactor technologies, reducing potential regulatory uncertainty in our licensing reviews of export applications.

NRC engages with its international partners to collaborate on a wide range of regulatory topics, including licensing and oversight of SMRs and advanced reactors. We have had noteworthy success in performing joint technical reviews with the Canadian regulator on highly complex areas of interest for SMRs and advanced reactors, including fuel qualification.

NRC also complements broader U.S. Government nuclear energy outreach by providing targeted regulatory capacity development to countries with growing regulatory programs to ensure they are prepared to provide appropriate oversight of nuclear power or material use within their borders. NRC recently renewed its cooperation agreement with Poland's National Atomic Energy Agency that enables the exchange of information to support Poland in expanding its regulatory

program to license both large light-water and small modular reactors.

Chair Hanson is not at this hearing today because he is in Senegal and Ghana this week. Ghana is embarking on a nuclear power program to meet its electricity needs, and signed an agreement with the United States to strengthen economic and diplomatic ties. The chair expects to deepen the relationship and emphasize the importance of an independent, technically competent, and adequately funded regulator.

There has been a marked increase in the demand for regulatory support in international capacity-building efforts, and we are actively engaged with our Federal partners to ensure these efforts are coordinated and prioritized consistent with U.S. Government's strategic objectives.

I appreciate the subcommittee's interest in NRC's mission and the work of our dedicated staff. We look forward to continued engagement with Members of Congress as the legislation under consideration advances, and I look forward to your questions.

[The prepared statement of Mr. Dorman follows:]

**********COMMITTEE INSERT**********

*Mr. Duncan. You all did great on time. I don't think we have had witnesses stay within the five minutes in a while. So I want to thank you for your testimony, and we will now move into the question-and-answer portion of the hearing. I will begin questioning, recognize myself for five minutes. Let me begin my questions on a high level.

One of themes of our nuclear policy work reflected in the bipartisan letter we wrote in April is to restore agency alignment with the policy goals of the Atomic Energy Act. These policies, I think it is fair to argue, helped the United States for several decades lead the world in nuclear technology to spread the peaceful benefits of nuclear power. We want to recapture the focus of these policies going forward.

Mr. Goff, you spent 30 years at Argonne and Idaho National Labs, two of the nation's key nuclear technology labs. From your experience and in your current position at DoE, do you see the value of reasserting the principles of the Atomic Energy Act to promote and deploy American nuclear technologies, especially given competition with Russia and China?

*Dr. Goff. Yes. I mean, I view that we operate under the Department of Energy under the Atomic Energy Act. That provides most of our authorities. And we view those things as very critical. We do need to be, you know, the leaders, you know, re-establish the U.S. leadership in nuclear technology, both domestically and for export.

We need to make sure that we, the United States, are setting the standards for safety and security and non-proliferation around the world. And the way we do that is through the international engagement, and be able to export of our technologies. So I do view the, you know, us reestablishing that leadership that is -- you know, and through the directions of the Atomic Energy Act is, you know, critical for us moving forward. We have to be the leaders in this space.

*Mr. Duncan. Yes. Just as a sidebar question, do you think the Chinese operate with that same mentality for safety and security?

*Dr. Goff. I think they operate under different -- yes, somewhat different standards. I think, you know, they have operated some of the reactors safe and all. But as far as

the overall security and the process that they go about, no, I would -- I think we should be the ones that should be working with our partners and allies, as opposed to Chinese companies coming in and doing that. And we have reflected that in some of our export relationships with the Chinese.

*Mr. Duncan. Yes, thank you for that. I think we can be the leader. We have been. We can be.

Mr. Dorman, you began your career in the nuclear Navy before moving to the NRC. At the hearing with the commissioners last month it was stated that when the Navy approves a nuclear submarine it is a dual mission, which is safety, but also to enable the mission.

It is not at all clear the NRC is performing its safety mission and service to the broader mission to enable nuclear energy. How are you, as executive director of operations, working to ensure NRC staff have a view in all their activities to this broader mission?

*Mr. Dorman. Thank you, Chairman. Broadly, I think in -- within the walls of the NRC we talk about our mission as enabling safe and secure use of nuclear technology. So we are focused on reaching technically sound safety conclusions

that support the applications that come before us.

We also over recent years have focused on broader application of risk insight, in particular applying risk insight at the beginning of our review process to make sure that our activities are appropriately scoped and focused on the most risk-significant activities as we develop the basis for our safety decision-making.

*Mr. Duncan. Yes, thank you for that. Let me stay with you, Mr. Dorman. Last month I discussed with Chairman Hanson the issue of subsequent license renewals taking significantly longer and costing more, which he agreed was a problem. This does not reflect an agency learning, improving, and getting a more efficient mindset. I understand inventory of the NRC's licensing actions have declined steadily over the last 20 years from 1,600 in 2003 to 800 today. And today, according to your data, 80 percent -- only 80 percent of this smaller amount of actions is completed within the budget.

Mr. Dorman, something isn't right here, either in budget or staffing priorities. What can you do to improve efficiency and put in place lasting measures so we can see performance improvements?

*Mr. Dorman. Thank you, Chair. We are focused on, again, at the beginning of our -- any application that is before us, defining a scope of the staff's review, and a schedule for that review, and managing to those plans. So I think that is gaining us some benefits in the focus and the level of effort in a number of reviews.

The decrease in the number of reviews that you refer to also comes with a increase in the complexity of many of the reviews that the staff is looking at. So it is -- I would say more -- many of the more mundane and administrative tasks that were undertaken 20 years ago have been resolved through standardization of tech specs across licenses and so forth.

On the specific issue of the subsequent license renewal, coming back from the hearing last month we have had conversations to focus on using risk insights, again, to look at the scope of the work that the staff is doing on subsequent license renewal applications. There are a number of attributes of aging of the plants that come into play in the 60 to 80-year period that we are not focused on because they had adequate margin already in the 40 to 60-year period.

So there are some additional elements that we look at,

but we are looking at where we can use risk insights to sharpen our focus and reduce the level of effort that we need to do to get to a sound safety decision.

*Mr. Duncan. Thank you for that. My time is up, and I will now recognize the Ranking Member DeGette for five minutes.

*Ms. DeGette. Thank you so much, Mr. Chairman.

As I mentioned in my opening statement, I introduced the Strengthening the NRC Workforce Act because one of the most critical ways we can ensure that the NRC maintains the highest levels of public safety is by making sure they are fully staffed. But the other thing is, if you want to ensure timely consideration of applications, you have to have the NRC be fully staffed, too.

And so, Mr. Dorman, I want to ask you. I mentioned -- and you were shaking your head, so I know your answer already -- roughly one-third of the NRC staff is eligible for retirement, is that right?

*Mr. Dorman. Yes, ma'am.

*Ms. DeGette. And so, with increased interest in nuclear energy and advanced reactors, NRC is expecting a

significant increase in applications for new reactor licenses. Is that right?

*Mr. Dorman. Just to clarify, in the near term we are expecting several applications for new reactor licenses -- I think those we call first-of-a-kind. As those become demonstrated, we are hearing from the industry that there are many people who want to be next in line. So I think it is -- we are seeing a modest increase in the near term, with the potential for a fairly significant increase in the not-too-distant future.

*Ms. DeGette. And so you are going to really need to have a robust and highly educated staff. I guess that would be safe to say, right?

*Mr. Dorman. Yes, ma'am.

*Ms. DeGette. How would the use of direct hire authority prepare the NRC for this anticipated increase in workload?

*Mr. Dorman. It would be a great assistance. I think the -- we have -- over the last decade, the staffing of the NRC was reduced by about a third. We have kind of turned that corner and leveled it off in the last year or two. And

that -- as you noted, the age demographic of our workforce has resulted in increased attrition. And so we are hiring, really, to offset that attrition. We are kind of just starting to make progress to increase, to get closer to our allotted FTE.

*Ms. DeGette. Okay.

*Mr. Dorman. As we do that, the industry is also expanding. And so we are competing in a very competitive market right now.

*Ms. DeGette. Yes. And so if you could increase compensation for the existing workforce, that would ensure that NRC would remain fully staffed as well, right?

*Mr. Dorman. It would be a great help, yes, ma'am.

*Ms. DeGette. And if you had the staff and the funding, then the NRC would be able to be more expeditious in reviewing the licenses, especially the wave that you are anticipating. Is that right?

*Mr. Dorman. Yes, ma'am. It will be essential that we are able to fully staff the core teams for multiple applications.

*Ms. DeGette. Now, I want to ask you quickly about

another bill, the Efficient Nuclear Licensing Hearings Act, because you talked in your testimony about one thing we could do about siting new reactors and so on. You talked about brownfields and other sites. How would removing the requirement that NRC hold hearings on new reactors threaten public safety and shake public confidence in the NRC?

*Mr. Dorman. Thank you, Ranking Member DeGette.

I think the -- there is a substantial amount of information that is available to the public today that was not available routinely or easily in the period when that requirement was established. Our public facing, web-based records management system has been in place for over a quarter of a century now, and we have upgraded it with improved search engines to really make information available to the public.

*Ms. DeGette. Okay, I think that is great. But what would happen if you removed the requirement that the NRC hold hearings on new reactors?

*Mr. Dorman. I think it is important to note that that would not in any way affect the interests of any party who would seek a hearing. So we still have the safety evaluation

and the environmental review done by the staff --

*Ms. DeGette. Okay, so you don't think it would make any difference?

*Mr. Dorman. It would not impact our safety conclusion. It would have perhaps one less --

*Ms. DeGette. Do you think it would impact the public's confidence in the facility if you didn't have hearings?

*Mr. Dorman. We have significant engagement with the public throughout our process. So I think it would not --

*Ms. DeGette. So yes or no will work.

*Mr. Dorman. No, I don't believe it would --

*Ms. DeGette. Okay.

*Mr. Dorman. -- significantly degrade public confidence.

*Ms. DeGette. Thank you.

Now I wanted to ask you, Dr. Goff, very briefly, in the Strengthening American Competitiveness Act there is a section -- part 810, where one -- where it talks about our exports of nuclear materials. Do you think this would impact our ability to export nuclear materials to, say, places like Japan and other countries?

*Dr. Goff. I mean, we do have to abide by the 810 process. For countries like Japan and -- a number of those countries already have general authorization, so it is much easier to, you know, transfer standard technologies to them.

Countries that have -- there are certain countries, though, that require specific authorizations, and those -- there is much more of a review on that.

*Ms. DeGette. Great, thank you.

I yield back.

*Mr. Duncan. The gentlelady yields back. I will now go to Mr. Latta for five minutes.

*Mr. Latta. Well, thank you, Mr. Chairman, and thanks for holding this legislative hearing today. And also, thanks for our witnesses for being with us today.

Nuclear power offers the United States a reliable carbon-emissions-free source of energy. While I am happy the subcommittee is looking at a host of legislative proposals to accelerate the deployment and utilization of nuclear energy, I am especially grateful that we are examining the discussion draft of my updated Nuclear Fuel Security Act.

And Mr. Chairman, before getting to my question, I ask

unanimous consent to submit into the record this letter of support for my bill from the Uranium Producers of America.

*Mr. Duncan. Without objection, so ordered.

[The information follows:]

**********COMMITTEE INSERT**********

*Mr. Latta. Thank you, Mr. Chairman.

Dr. Goff -- and again, thank you very much for being with us -- I hope you share my sense of urgency regarding the United States' dependance on Russia for nuclear fuel, especially considering Russia's invasion of Ukraine. We currently rely on Russia, Kazakhstan, and Uzbekistan, two nations within Russia's sphere of influence for nearly half of our natural uranium purchases.

Will you address the importance of ensuring that the U.S. has robust domestic capabilities at each step in the fuel cycle, including the production of natural uranium through conversion enrichment?

*Dr. Goff. Yes. Based on Russia's unprovoked and unjustified invasion of Ukraine, I think that does highlight that Russia is not a reliable supporter of energy security for any nation. So, yes, I share your concern that, you know, we do have a significant reliance, especially on enrichment and conversion activities from Russia, and we need to be able to work, and working with our allies, replace that with, you know, a more assured supply, you know, preferably domestic, additional domestic capacity here in the United

States for enrichment, but also, we could be working with our allies.

So, yes, I do share that concern, and that is a very important issue that we need to move forward on in a very timely manner here.

*Mr. Latta. Well, you might agree that it is important to increase our domestic capabilities. The speed with which DoE is acting tells another story. DoE is moving especially slow in implementing HALEU availability program, which Congress directed through the Energy Act of 2020. Perhaps this is why companies like Centrus and TerraPower are moving forward with their own plans to collaborate on domestic production of HALEU, given DoE's absence.

What are you doing to accelerate implementation of HALEU availability program?

*Dr. Goff. We did just complete the review. Well, the comments are just in from the draft review, for the draft RFP that was issued. Yes, it did take a while to get that draft RFP out. There was a lot of interagency review to make sure that we got that right.

We have now gone through the comments, and are working

to address those comments in what will be the final RFP to, again, incentivize them moving forward on the HALEU activities. But yes, we share your concern that we need to be moving rapidly, especially on that activity, to provide high-assay, low-enriched uranium to be able to support especially those advanced reactor demonstration programs moving forward here.

*Mr. Latta. Okay, let me follow up, because it sounds like there is a lot of interagency discussion going on. But will the proposed Nuclear Fuel Security Act help speed up the program's rollout?

*Dr. Goff. It does provide -- yes, highlights a number of things that, you know, the Secretary could get involved in to be able to make sure we have assured LEU supply and high-assay, low-enriched uranium supplies.

We are working already, though, I will note, on trying to within the Department find as much material that we can to provide for those companies, as well. So many of those actions would, yes.

*Mr. Latta. Well, let me just -- not that I am picking on you -- let me ask another question.

You know, after reviewing the public comments, it is clear that the nuclear industry has deep concerns with DoE's draft HALEU request for proposals. How does DoE plan on addressing these concerns?

And will you commit to further outreach with the industry prior to the finalization of the RFP?

*Dr. Goff. We do commit to further outreach to the industry as part of that, and, yes, we are working now to see how we want to address some of those comments that came in to make it an effective program. We want it to be an effective program that will incentivize that new capacity. So we appreciate the comments that we got from the stakeholders in the industry and we are -- you know, have just gone through the review of those, and are working to see how we can address those and incorporate them in a final RFP.

*Mr. Latta. Well, I appreciate your comments because, again, it is -- for me and for members of this committee and others, it is very important that we do go forward because, again, we want to make sure that the United States is not dependent with over 50 percent of our uranium out there coming from pretty much, you might say, untrusted sources.

So it is essential, and I hope that carries over to the Department.

And Mr. Chairman, my time is expired, and I yield back the balance.

*Mr. Duncan. I thank the gentleman from Ohio, and I recognize the gentleman from California, Mr. Peters, for five minutes.

*Mr. Peters. Thank you very much, Mr. Chairman, for this hearing, and thank you to the witnesses for being here.

I also want to thank Congressman Carter for his leadership and partnership on the Global Nuclear Energy Assessment and Cooperation Act. That bill would include the training of foreign nuclear energy experts in the establishment of a U.S. international nuclear reactor export and innovation branch, which would help ensure we remain the world's leading developer of nuclear energy.

From climate change to energy security, bipartisanship will be essential to tackling our most pressing energy challenges. And I just want to add, for purposes of context, how important transmission will be. And I know the chairman wants to get at hearings. I think that is going to be in the

fall. The sooner we can get that conversation going about a strategy for promoting inter-regional transmission across the country, I think the better off we will be in deploying energy security, and efficiency, and better climate policy. So I appreciate the chance today to operate in a bipartisan way, and I hope that we can keep it up.

The other point I would raise is, you know, we have done a yeoman's job in this country about decarbonizing our -- planning to decarbonize our economy and to transition to a new energy supply and cleaner energy supply. But we have to recognize in context that we are 10 percent of worldwide emissions, and that if we don't keep cheap coal in other places in the ground, then we will lose this battle for this planet. And that is why there is growing bipartisan support for increasing U.S. exports of nuclear energy technologies and expertise, because that offers a real possibility for the development of the -- or for the developing world to avoid using that really dirty and dangerous fuel.

Mr. Goff, what are the current roadblocks to exporting U.S. nuclear technologies and expertise, and what reforms could help address those roadblocks?

*Dr. Goff. Well, we need to have certain agreements in place for different countries. So for countries that we already have a 123 Agreement, you know, we can export those technologies.

Then it is making sure that we have the right support mechanisms to be able to export those. Do we have the right financing packages? We have the Export-Import Bank can help with financing, but there are certain things we still can't do, necessarily, that other countries can do when they are going to export, especially, say, equity. We don't have a good way for the U.S. Government to provide equity financing for some of those exports to different countries that are very important for -- you know, it is very important for those countries to have some equity financing. So making sure we have the right financing packages, I think, is very important.

I think we also need to make sure that we deploy successfully in the United States. It is very -- you know, most countries don't want to build first-of-a-kind. They want to see it operating in the country of origin first. So we have got to make sure that we can deploy successfully, but

also make sure that we have right financing packages, as well, internationally.

*Mr. Peters. Are you aware of existing proposals to deal with the -- our inability to provide equity in the way you describe?

*Dr. Goff. Could you say that again? I am sorry.

*Mr. Peters. Are you aware of existing proposals to address this issue about providing equity that you described?

*Dr. Goff. I have heard of various things being bounced around, but not aware of a specific proposal out there.

*Mr. Peters. That is very helpful to me, and I will look for one myself.

There is bipartisan recognition in both chambers of Congress that common-sense permitting reforms are needed to boost energy security and reduce pollution. While nuclear energy has been a clean, secure, reliable, maybe the safest source of energy for decades, and helps to stabilize our energy systems, the NRC's legacy environmental review processes have contributed to excessive process to build new nuclear.

Dr. Goff, the draft Modernized Nuclear Reactor

Environmental Reviews Act takes steps to reform the process for conducting environmental assessments to allow broader usage, and potentially add new categorical exclusions. Do you believe these are good approaches? Would they be effective?

And what else needs to be done to enable more rapid environmental reviews?

*Dr. Goff. I think we do need to make sure that we have a process that is in place -- you know, we have the National Environmental Policy Act -- that we are addressing the environmental impacts, but make sure that we do it in a process that is very efficient, not too duplicative, so that it doesn't become the, you know, the slowest portion of the process. So things that we can do to, you know, to make sure that we are doing that process efficiently and effectively, I think, are very important.

It is not -- the Department of Energy doesn't control that aspect of it, so I guess I won't necessarily speak on --

*Mr. Peters. Yes. I will share. One of my frustrations is that, you know, we do the same analysis on the same process in every single district court in the

country. It doesn't make any sense, and it really handcuffs us. I am looking for ways to make sure that we don't do that anymore, not with just respect to nuclear, but with respect to deploying all energy in the country.

So thank you, Mr. Chairman, for the hearing, and I yield back.

*Mr. Duncan. The gentleman yields back. I will now go to Texas. Dr. Burgess is recognized for five minutes.

*Mr. Burgess. Thank you, Chairman.

Dr. Goff, just on that same line for a second, in the debt limit that was recently passed by the House of Representatives there was some streamlining in NEPA that was provided. Is that helpful at all in this venue?

*Mr. Dorman. Yes, I am thinking I might jump in here.

*Mr. Burgess. Sure.

*Mr. Dorman. So thank you, Congressman. Yes, we are looking at the provisions in that bill, as well as the provisions in the proposed bill.

We are also taking actions to -- through an advanced reactor generic environmental impact statement, the Commission has asked us to look at our categorical exclusions

that exist in the Commission's regulations of part 51.

We are also looking at process improvements in the staff process, and particularly reducing the level of detail in our documentation to really focus it on the key elements supporting the environmental decision to help work towards streamlining our process. But we welcome the committee's interest in further efforts.

*Mr. Burgess. So just to distill it down a little bit, the language was helpful that was passed.

*Mr. Dorman. Yes.

*Mr. Burgess. Okay.

*Mr. Dorman. Thank you.

*Mr. Burgess. Thank you for saying so.

And Dr. Goff, I have a couple of questions on the power purchasing agreements. This committee has found successful collaboration between NRC, DoE, and private companies is vital if America is to usher in a new era of nuclear innovation. Can you share with the committee the scope of the power purchasing agreements that DoE has entered with advanced nuclear reactor companies?

*Dr. Goff. At this point, unfortunately, we have not

entered into power purchase agreements for advanced nuclear.

One of the issues in that area is the Department of Energy doesn't have authorization for long-term power purchase agreements. We can do more in the 5 to 10-year range. For most of the -- for a large investment like a nuclear power plant, they are looking at more power purchase agreements in the 20 to 30 years. So that is something we do not have that could be advantageous to help those first movers provide assurety of, you know, selling their power, and it is something that we would be interested in, especially as we are looking at using Department of Energy sites for some of the initial deployments of advanced reactors.

It would be nice if we could be one of the purchasers for that, but right now I would say we don't have the authorization to be able to do long-term power purchase agreements from the Department of Energy. Other agencies like Department of Defense do --

*Mr. Burgess. So let me just be sure I understood that. You said if you could be the purchaser of those long-term agreements?

*Dr. Goff. For the Department of Energy, yes. I thought that was what the question was, that --

*Mr. Burgess. Yes.

*Dr. Goff. Yes, that right now we have not signed any because we are limited, and only -- really, about 5 to 10-year power purchase agreements. Most companies, if they are going to make that investment, they are looking at more of a 30-year power purchase agreement. We do not have that authority right now in the Department of Energy.

I think one of the pieces of legislation would potentially extend that out, but that would be a beneficial --

*Mr. Burgess. So that would be helpful.

*Dr. Goff. Yes, that would be helpful.

*Mr. Burgess. Thank you.

Mr. Dorman, back to you. Ranking Member Pallone mentioned in his opening statement about demystifying the NRC, which seems like a laudable goal. You began your career as an officer in the nuclear Navy. Is that not correct?

*Mr. Dorman. Yes, sir, that is correct.

*Mr. Burgess. And the safety record with the nuclear

Navy is really unparalleled. It is something that should be -- every American should be aware of that, yet most aren't. When we talk about nuclear power, most people think of Three Mile Island and Homer Simpson. They don't think about the nuclear Navy. Are there ways that you can identify that that would be helpful for people to begin to think about the nuclear Navy as the model for how we -- what the future is in nuclear energy?

*Mr. Dorman. I think the nuclear Navy is a model. I think, you know, you mentioned Three Mile Island. It has been over 40 years since that event, and the record of nuclear safety in the United States is well established.

From our part, as the safety regulator, we provide information to the public on our website of the performance of each nuclear power plant in the country on an ongoing basis. But I think one of the things that is challenging to connect with the average member of the public is it is a complex issue. We have some really smart people who are probably not the best people to be explaining it, but others who have that skill.

So I think, as we engage public stakeholders, we need to

make sure we are putting the message out in as understandable a way as we can of the work that we do in our licensing and oversight processes to ensure the safety and what we are seeing as the safe operation of the facilities.

*Mr. Burgess. Thank you, Mr. Chairman. I will yield back.

*Mr. Duncan. The gentleman yields back. I now go to Mr. Tonko for five minutes.

*Mr. Tonko. Thank you, Mr. Chair, and I appreciate the subcommittee working on nuclear energy issues and hosting this hearing today. It should be an area where we can find bipartisan agreement.

Our existing reactors are essential to our nation's successful clean energy transition, and I am hopeful that several of the bills before us today will help with the deployment of new and advanced reactors. But as we think about how the Nuclear Regulatory Commission can support the industry's efforts to develop and deploy advanced reactors, we shouldn't lose sight of the needs of the Commission to continue to be a successful and independent regulator of the industry.

So with that in mind, I would like to express my support for the bills introduced by Ranking Member DeGette and Congressman Levin. The NRC has awesome responsibilities, and we have a responsibility to ensure that the Commission has the expert personnel necessary to carry out its duties.

Mr. Dorman, I heard the earlier discussion you had with Congressmember DeGette about recruiting and retaining its staff. But how difficult is it for the industry's regulator to compete with the private sector for a limited number of qualified candidates?

*Mr. Dorman. Thank you, Congressman. I think our advantages in that marketplace is a clear safety mission and the history of the NRC as a great place to work.

I have actually had a new employee recently that reached out to me two weeks after coming to the agency, and expressed how pleased he was because he had been wanting to come to the NRC for a long time. That said, when we have 17 technology developers on top of the operating industry, we are competing in a tight marketplace.

And we have our attrition this year. Other than retirement, attrition is running about two percent, which is

a little higher than our historical rate. And we are seeing good people make transition mid-career to some of these technology developers, and they have the ability to offer them pays that we don't -- are not able to offer.

So I think additional tools to help us particularly with the critical skills that we need for the innovations that are happening in the industry will be helpful.

*Mr. Tonko. Thank you. And Mr. Dorman, again, if the bills and discussion drafts under consideration today were to be enacted, how would that increase the Commission's workload?

*Mr. Dorman. I am not sure I see anything in the bill that directly -- in the bills that directly increase the workload. I think what I alluded to earlier is we are anticipating 4 applications for construction authorization for two light-water and two non-light-water power reactors in the next 12 months. If those projects move forward successfully, then I think we will see a substantial increase in the following years.

*Mr. Tonko. Thank you, Mr. Dorman.

Mr. Chair, the ranking member's bill is an important and

needed addition to any legislation that provides NRC with additional workload requirements. I similarly believe we should be looking to provide our nation's other energy regulator, FERC, with similar hiring authority to ensure they have the technical and legal and other expertise necessary to carry out its responsibilities.

In the past there has been bipartisan support to streamline the NRC processes. Mr. Doorman, does the Commission have any views on the proposed bills to further streamline licensing hearings and other proceedings?

*Mr. Dorman. I can't speak for the Commission. I would say that we are happy to work with the committee on any and all of those proposals.

*Mr. Tonko. Thank you. And were these bills to move forward, I believe it would be important to provide greater opportunities for the broader public and host communities to participate in Commission proceedings. Over the past couple of years we have seen FERC's Office of Public Participation have success, and I hope we can do more to guarantee that streamlined regulatory processes do not result in fewer opportunities for the public to have their voices heard.

So with that I thank you, Mr. Chair, and I yield back.

*Mr. Duncan. The gentleman yields back. I will now go to the chair of the full committee, Mrs. Rodgers, for five minutes.

*The Chair. Clearly, NRC has the vital mission to assure adequate safety of nuclear technology. Yet it also works in service to the policies laid out by Congress, especially in the Atomic Energy Act.

This past Friday my colleagues and I introduced a bipartisan, bicameral letter to the NRC, and we urged the Commission to resolve issues associated with the development of new, risk-informed regulations for advanced reactors. Congress wants a regulation that will be workable for the most efficient licensing of advanced technologies, and we said so much in legislative reforms in 2019 to set the Commission and industry up for success.

Mr. Dorman, as you heard me say last month to the Commission, it is disappointing that, after two years, all the staff was able to produce for the -- for Commission review was a rule that stakeholders said for almost two years was unworkable. We are trying to set the Commission up for

success on these challenging issues, and we want to see results. We want more efficient licensing and responsive regulations. So how are you working to instill in the NRC staff under your management a results-oriented culture?

*Mr. Dorman. Thank you, Madam Chair. A number of things.

First, I mentioned earlier a focus on risk insights. And so we historically have been risk-informed in the sense of taking risk studies of reactor technologies and applying those at the decision point at the end of our process. Over the last several years we have been focused on taking that risk insight to the front end of our process, and being very focused on our work planning and making sure that we are applying the right level of resource to the significant issues that come before us, that we are focused on the right significance issues --

*The Chair. Okay, so --

*Mr. Dorman. -- so that our process becomes more efficient.

*The Chair. Okay, thank you. So with that in mind, I wanted to ask about -- and when it comes to this efficient

licensing and developing regulations, certainly, communications is key. And I understand that agency staff states to applicants seeking clarifications on rules, guidance, expectations that NRC can't act as a consultant due to its independence, and does not informally provide advice.

So I wanted to ask if that really is the case. And how can you improve efficiency if you aren't communicating?

You know, they need to have -- stakeholders need to have that communication regarding the licensing and -- along the way.

*Mr. Dorman. Yes, I appreciate that perspective, Madam Chair. And having been at the NRC 32 years, I experienced that a long time ago.

I would say that we have been promoting and encouraging pre-application discussions with technology developers early in the process, and the two benefits that accrue to that -- the benefit to the staff is understanding the technology that is being developed, and making sure that we have the right skills in place when the application comes in. The benefit that accrues to the developer is to hear the types of questions that the staff are asking, and anticipate those and

prepare a more complete application, which would also help in the efficiency of the review.

So I think we are better in that regard, but I am always open to feedback on that.

*The Chair. Well, do you have plans for measuring and verifying progress on more efficient licensing decisions like metrics that stakeholders can track?

*Mr. Dorman. Yes, we have -- as I mentioned, when we receive an application and determine that the application is complete, sufficiently complete for the staff to begin its review, we establish a review schedule, and we establish a level of effort for the staff for that, and we track those to ensure that we are meeting that, that we are identifying issues early in the process, elevating them as necessary for resolution so that we achieve the efficiencies that we are looking for.

*The Chair. Mr. Goff, let me turn to you. You have long experience in nuclear at DoE, National Labs. Are there lessons from how DoE regulates and collaborates with innovators that could be shared with NRC to improve the regulatory interactions?

*Dr. Goff. I mean, yes, we do have the ability to authorize nuclear facilities and nuclear reactors, as well. So we have a process that has been set up. It benefits from the fact that we almost always license first-of-a-kind. So we have to have a fairly flexible process in doing that, and part of that flexible process is there is a lot of communication between the independent authorizer and the entity that is trying to deploy a nuclear facility.

So some of the things that we have done is we don't do a lot of written requests for information back and forth. Most of the -- if you have an issue, they typically call or have a discussion fairly quickly on it. So they minimize a lot the request for information until the very end of the process, and it is only major issues that come up there.

We also -- and I will say in this case this is Idaho, and, you know, we operate the Idaho National Lab, the Office of Nuclear Energy is the landlord for Idaho National Lab -- in our contract for Battelle Energy Alliance that operates that laboratory we do actually put in metrics for the review process. So if the laboratory submits something for -- a safety document for review, the contract that we have between

DoE Idaho and the laboratory says DoE Idaho has to turn that around in 90 days.

Similarly, we have also, for the reviewers themselves, we actually have set up metrics. So the metrics for the reviewer as far as their performance review requires a slightly shorter turnaround. Like, they are required to turn it around in 70 days or so.

So those are some of the things that we have done to make sure that, again, we have an efficient process for authorizing nuclear facilities and -- we haven't authorized a reactor again in a while, but hopefully authorize reactors here in the near future, as well.

*The Chair. Thank you, thank you.

Thank you, Mr. Chairman, and I really appreciate the bipartisan focus on this issue. I yield back.

*Mr. Duncan. Absolutely. The chair will now recognize the ranking member of the full committee, the well-dressed man from New Jersey, Mr. Pallone, for five minutes.

*Mr. Pallone. Thank you for your comments on my jacket.

Anyway, last month the NRC's commissioners testified before this subcommittee. When I asked Chairman Hanson and

then Commissioner Baran about the potential for NRC to establish an office of public participation similar to that at FERC, both of them indicated that they thought it was a good idea, and they would support it. And we have Congressman Levin's bill before us today that would require the NRC to establish a similar office.

So two years ago the NRC created also an environmental justice review team to review how the agency's programs, policies, and activities address environmental justice. And the resulting assessment made six formal recommendations, including that the NRC enhance its environmental justice-related outreach activities, and that the Commission implement formal mechanisms to enhance how environmental justice is addressed.

So I have two questions, maybe two minutes each here, if you will.

Mr. Dorman, could you talk about how the NRC is implementing those recommendations in both -- you know, and how the potential office of public participation might be able to help with the environmental justice?

And talk a little bit about where the NRC staff

currently sees gaps in the Commission's process in engaging communities impacted by NRC decisions.

Two minutes.

*Mr. Dorman. Thank you, Ranking Member Pallone.

We have stakeholder confidence as one of the goals in our strategic plan, and it is dispersed by project, I would say, through the organization. We have agreement state officers and state liaison officers in our regional offices. We have a tribal program in our materials program office. So I think an office such as proposed by Congressman Levin could potentially integrate that and bring focus.

But stakeholder engagement and stakeholder confidence is an important strategic goal of the Commission, and the staff is focused on that every day. We have over 1,000 public meetings a year.

*Mr. Pallone. And then, what about implementing the recommendations on environmental justice?

*Mr. Dorman. Those recommendations still sit with the Commission. So we are awaiting Commission direction on that.

*Mr. Pallone. Okay. All right, so let me go to Dr. Goff.

When Secretary Granholm appeared before this subcommittee, she expressed conditional support for a ban on Russian uranium if we could develop our own nuclear fuel cycle supply chain. So do you agree with Secretary Granholm that, if we are going to ban imports of Russian uranium, it is important we also ensure our nation has the fuel cell -- the fuel cycle infrastructure needed to support our nuclear power reactors?

And can you talk about the benefits that the Department sees in a program to ensure fuel security, such as the one authorized in the Nuclear Fuel Security Act that we have before us today?

*Dr. Goff. Yes, I, of course, agree with the Secretary in this case that, you know, the -- you need to have both of those things moving forward. You know, it is hard to put a ban in place and not have something also to make sure that we are incentivizing the replacement.

You know, right now we don't have enough enrichment capacity outside of Russia to support the reactors operating outside of Russia. So we have got to make sure we add new capacity. We have things that can make sure we have fuel for

the existing fleet for, you know, a few years to come here, but at some point in the near future there will be a gap. So you need to make sure that we are incentivizing that new capacity at the same time, if you were trying to do a ban. They need to come hand in hand.

*Mr. Pallone. So at what point would we be able to say there should be an absolute ban because we have the capacity?

*Dr. Goff. Well, you could go ahead -- if you start working forward -- I mean, it is going to take a certain number of years to deploy new capacity, four years, five years, something along those lines. So, you know, once you have actions moving forward to have that new capacity being built out, then you could look -- a ban would not negatively impact the continued operation of the reactors.

*Mr. Pallone. And you know, I don't -- I haven't looked at the details of the bill, but would this bill allow for that transition?

*Dr. Goff. I believe it allows for, you know, waivers for a certain period of time, as well, that, you know, someone -- the Secretary could give waivers for material to come in during that period of transition.

*Mr. Pallone. Okay, all right. Thank you so much.

I yield back, Mr. Chairman.

*Mr. Duncan. The gentleman yields back. I will go to the gentleman from Virginia, the chair of Oversight and Investigations, Mr. Griffith, for five minutes.

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

Director Dorman, I have been working on so-called mandatory hearings and the Efficient Nuclear Licensing Hearings Act. Could you briefly talk about the current mandatory hearing process, what steps normally take place in the license application before a mandatory hearing takes place?

*Mr. Dorman. Thank you, Congressman.

Briefly, when an application comes in, the NRC staff conducts a safety evaluation and an environmental impact statement. And in parallel with that, the Advisory Committee on Reactor Safeguards provides an independent review of the salient portions of that.

Once the staff has completed its work, it goes to the Commission, and there is a period of preparation for the

hearing, and then the Commission conducts the hearing, and then the Commission issues its decision.

*Mr. Griffith. And in what cases is a mandatory hearing initiated, and what type of preparation is required other than what you just told us?

*Mr. Dorman. So the mandatory hearing in uncontested events for production utilization facilities, basically for nuclear power plants, as well as certain fuel facilities, and it is conducted in any uncontested proceeding. But it doesn't impact the ability of any interested party to request a hearing.

*Mr. Griffith. And that is what gets interesting. And who are the participants in that so-called mandatory hearing when it is uncontested?

*Mr. Dorman. So in the mandatory uncontested hearing, the participants are generally the Commission and the staff.

*Mr. Griffith. Okay, the Commission and the staff.

So then let's get to the contested hearing, and the differences between a contested hearing, the mandatory hearing, and an adjudicatory hearing.

*Mr. Dorman. So you are going a little bit outside my

expertise, because I am an engineer, not a lawyer. But I think, in the case of the contested hearing, it is an adjudicatory proceeding, and a person who is raising a concern with the application, in my understanding -- and I am not a lawyer -- they need to demonstrate that they have standing -- in other words, they are impacted by the action -- and that they have admissible contentions.

*Mr. Griffith. So here is my question. Do we -- is it vital -- and I understand you might have to do some hybrid work in there, but is it vital that you have, in an uncontested case, that mandatory hearing?

I understand if somebody has got a contest, if somebody brings forward an objection, if they have standing and they have got some concerns. I don't want to cut anybody off from being able to come forward. But do you have to go through a formal mandatory hearing process if it is uncontested?

I understand that lawfully you do. I am saying is it necessary for the safety of the operation of that licensee, or the person that has come before you?

*Mr. Dorman. I don't believe it is, sir.

*Mr. Griffith. All right. Finally, are you familiar

with -- let me check my time -- are you familiar with the 2008 NRC proposal on the Atomic Energy Act transmitted to then-Speaker Nancy Pelosi? Yes or no.

And didn't the NRC proposed eliminating the uncontested hearing at that time?

*Mr. Dorman. Yes and yes.

*Mr. Griffith. Okay. So they did propose that. All right. I appreciate it greatly.

And I yield back.

*Mr. Duncan. I thank the gentleman for yielding. That is what a chairman does sometimes. Good job.

I will now go to Mr. Veasey from Texas. Five minutes.

*Mr. Veasey. Thank you, Mr. Chairman.

As you all know, the United States has 93 operating commercial nuclear reactors at 55 power plants across 28 states, including 1 in Texas that we have down in Comanche Peak, accounting for about 20 percent of total annual U.S. electric generation, and about 46 percent of zero-carbon electricity. And maintaining and expanding this nuclear energy is going to be essential for us to have a cleaner and more sustainable energy future.

I look forward to working with my colleagues to make sure that we can ensure that licensing and regulation of new nuclear plant reactors continues to protect the public health and safety, while also meeting our growing energy demands. We know that we are going to have more and more objects and devices and cars and what have you plugging into the grid, and that we need good, reliable energy.

And so my question to Michael Goff is that we know that nuclear energy has long been one of the safest forms of energy globally, and that has been in large part to the NRC and the nuclear industry for continuing to innovate and meet new standards. And with new technology that is highly desired by our allies and possesses tremendous advantageous [sic] on safety and security, some stakeholders have echoed the sentiment that NRC must adjust for the current state of play.

And so one of the drafts today would amend the duties of the Advisory Committee on Reactor Safeguards in scheduling reviews, and impose term limits on members. And your experience, would the approach in this draft bill offer improvements to the current NRC process, or would it create

additional layers of bureaucracy?

And how is the NRC considering the unique characteristics and safety features of innovative nuclear technologies, while maintaining this gold standard in safety evaluations and risk-informed regulatory processes?

*Dr. Goff. Well, I will speak to part. I don't want to necessarily speak to the NRC portion of this.

But yes, a number of the advanced reactor concepts that are being developed and deployed rely on additional passive safety features. So they do have some enhanced safety features over the already very safe operating fleet. So there are some potential advantages that could be taken advantage of in the licensing process for those reactors, because I do agree with you that, you know, we do need to make sure we can deploy these systems safely and efficiently.

I will defer to my NRC colleague on --

*Mr. Veasey. Please.

*Mr. Dorman. Thank you, Congressman.

On regarding the Advisory Committee on Reactor Safeguards, I think that the -- this is an independent committee that the Commission hires external experts. I know

the leadership of the committee today is working hard to be very focused on the innovative aspects and the safety-significant aspects of the questions that come before them. I think the ability of those experts to apply their expertise is a critical part of their contribution to the process. They have added value beyond the staff's review in some of our recent actions.

So I think they recognize the need to be very focused in their review, but I think they also need the leeway to follow their expertise.

*Mr. Veasey. Yes. Well, thank you very much.

And this will be a question that probably both of you will be able to weigh in on, if you feel comfortable doing it. As we continue to have these discussions around being able to deploy cleaner energy platforms in order to deal with a lot of the carbon goals that we are trying to meet, and trying to clean up our air, and trying to clean up our atmosphere, do you think that there needs to be more to inform the public on this particular, you know, endeavor that we are sort of all on in order to try to make the planet cleaner?

I mean, to me, there seems to be a huge sort of void there, and a lack of information that is out there as it pertains to this very difficult subject. When you are talking about trying to strengthen the grid, for instance, to make it more resilient, as more and more people, you know, do, you know, plug in cars or plug in phones, whatever it may happen to be, as we start moving more and more down that path, there does seem to be just a lot of confusion or a lot of uncertainty in the American public.

Do you think that there is a role for you all to play in that area?

*Dr. Goff. Yes, I think we definitely should be able to communicate better. We can always improve our communications in that area, and we should be continuing to work with stakeholders along those lines.

*Mr. Veasey. Yes.

*Dr. Goff. I am happy right now that we have much more support and continue with growing support for nuclear energy, but we still need to make sure we do continue to provide information, and help people do understand how these -- you know, the nuclear technology does need to work together with

the other energy technologies to deploy to give us the most reliable, resilient grid that we can.

So, yes, we should be continuing to try to improve our engagement to make sure people do fully understand that process.

*Mr. Veasey. Yes. Thank you very much.

Thank you, Mr. Chairman.

*Mr. Duncan. The gentleman yields back. I now recognize the gentleman from Ohio, Mr. Johnson, for his five minutes of questioning.

*Mr. Johnson. Well, thank you, Mr. Chairman, and thanks to all of our witnesses, both of you, for being here today. I have got a lot to cover, so I want to get right into it.

My legislation, one of the bills being considered today, the Strengthening American Nuclear Competitiveness Act, has a number of very important reforms, one of which is the extension of Price-Anderson Act liability protections that both industry and regulators have agreed has been in existence, and is today -- and is essential for the buildout of America's civilian nuclear industry ever since the 1950s.

Mr. Goff, first, can you explain to our subcommittee

your thoughts on the importance of Price-Anderson protections for maintaining and expanding America's nuclear industry?

And can you explain why it would be important to extend these well into the future?

*Dr. Goff. Yes, I think it is very important to the nuclear industry to have that assurance as far as the coverage and indemnification for any --

*Mr. Johnson. Why is it important?

*Dr. Goff. Well, I should add it is important for both industry and for the Department of Energy, too. Our work is also covered under Price-Anderson, as well, to make sure, again, that we have appropriate coverage if there is some unthinkable accident that occurs in the future. Luckily, we have never had to -- had that, you know --

*Mr. Johnson. Yes, just kind of in layman's terms, the original intent of Price-Anderson was because insurance companies didn't know how to set limits and liability on this stuff, right? And people were not -- businesses, industry, they were not going to invest in nuclear programs without some assurance that they wouldn't just be wiped out in the unfortunate instance of an event, right?

*Dr. Goff. Yes, and I think that is still the case, is insurance companies don't necessarily know how to continue to handle that. I even know we have issues with countries necessarily --

*Mr. Johnson. Okay.

*Dr. Goff. -- knowing how to handle that as well, so --

*Mr. Johnson. Okay. Let me stay with you, Mr. Goff.

In our hearing last month with the nuclear regulatory commissioners, we discussed the portion of my legislation having to do with, in my view, outdated bans on commercial nuclear investment coming from entities in allied, friendly countries. My bill would end that prohibition, which currently would hold -- could hold back critical investments that could move the U.S. nuclear industry forward.

When I asked NRC Chairman Hanson about this last month, he said he thinks there is "a real opportunity'' to perhaps make changes. Do you agree? What are your thoughts on this, from a DoE perspective?

*Dr. Goff. You are saying bans from our allied countries?

*Mr. Johnson. Yes. Mine lifts that ban. So he said he

agrees that there may be time for change. What do you think?

*Dr. Goff. For us to export to certain countries?

*Mr. Johnson. No.

*Dr. Goff. Oh, okay.

*Mr. Johnson. For investments --

*Dr. Goff. Yes, sir.

*Mr. Johnson. -- from allied -- friendly allied countries in the United States.

*Dr. Goff. I think we -- you know, we want to make sure we still have control of those assets in the United States, and make sure they have appropriate control. But I think there is some potential opportunity to open up how much investment you can have --

*Mr. Johnson. Okay.

*Dr. Goff. -- in nuclear power plants.

*Mr. Johnson. All right. Now, Mr. Dorman, let me go to you. In my legislation there are a couple of provisions where we are looking for the Nuclear Regulatory Commission to do a deep dive and report back to us here in Congress some of the unique licensing issues for some of the nuclear power applications of the future.

I am particularly interested not only in advanced techniques for speeding up the manufacturing of small modular reactors and micro-reactors, but also the innovative uses for these reactors in manufacturing perhaps one day being used to heat and power huge industrial facilities, data centers, and other energy-intensive industries. So Mr. Dorman, is NRC looking into these things now?

And how is the Commission preparing for the licensing process for new manufacturing techniques and non-electric applications in the future?

*Mr. Dorman. Thank you, Congressman. We are looking at those issues.

As you know, the X-energy application that we expect in the next year is anticipated to provide process heat for a Dow facility.

We are also -- the staff is looking at micro reactors, and particularly the factory manufacture and transport of micro reactors, and is developing a paper for the Commission on that subject. So we would be happy to also report to the committee.

*Mr. Johnson. Great. Well, as one that is very

interested in America reasserting its leadership role in commercial civilian nuclear energy both here and abroad, because we know it has geopolitical implications, I am glad to hear the answers from both of you today.

Mr. Chairman, I yield back.

*Mr. Duncan. The gentleman yields back. I now go to Ms. Kuster for five minutes.

*Ms. Kuster. Chairman Duncan and Ranking Member DeGette, thank you so much for this hearing on nuclear energy.

Nuclear power is a key piece of our electric system in the United States. There are 54 nuclear power plants in the United States, including in New Hampshire. These power plants provide nearly 20 percent of the electricity generated in our country.

Preserving existing nuclear resources is an important part of meeting our carbon reduction goals. And as a recent MIT study found, if existing nuclear power plants were to close we would see an increase in coal and natural gas production to make up for the lost power generation.

To help our existing nuclear fleet remain operational,

Congress included the civilian nuclear credit program in the Bipartisan Infrastructure Law and a production tax credit for existing nuclear generators in the Inflation Reduction Act.

A question for Mr. Goff. Can you comment on how the program passed in the Bipartisan Infrastructure Law and the Inflation Reduction Act are helping the existing nuclear fleet?

*Dr. Goff. Well, first, we very much appreciate, you know, Congress moving forward on those actions. I think they are very critical to make sure that we stem closures of nuclear power plants. We have had a number of closures and, basically, any closure we need to be able to replace.

So, yes, we had this Civil Nuclear Credit Program that moved forward first, and has done their round of solicitations, and was going forward potentially with one activity in that area.

On the production tax credit, that has not been implemented yet, but we are, you know, anticipating getting it implemented over the next year or so.

We should note we think that those are the very complementary programs. You know, we have looked at some on

the civil nuclear credit. Will the production -- would passage of the production tax credit eliminate the need for the civil nuclear credit? And the analysis that has been performed indicates that, no, there are still some plants that will have -- you know, will still potentially need the Civil Nuclear Credit in addition to, potentially, to the production tax credit. So we think those are very nice, complementary things, moving forward.

*Ms. Kuster. And I want to take a step back and ask you to think holistically. I know you had 30 years experience in the field, and a Ph.D. in nuclear engineering.

It is clear from the slate of 15 bills that are subject to the hearing today that Congress is very interested in identifying ways to ensure that the United States is a leader, particularly in advanced nuclear energy, moving forward. Advanced nuclear reactors are designed to be safer and have fewer environmental externalities than traditional light-water reactors.

If you were in Congress, Mr. Goff, what steps would you take to promote the United States' role as a leader in advanced nuclear energy moving forward?

*Dr. Goff. Well, first, let me acknowledge what you are saying along that. I think we are the leaders in the innovation. We do have great companies and vendors that have developed the technology, the world-class technology. So I think we have the innovative technologies out there.

We need to now make sure that we can effectively deploy those technologies and be able to export them, as well. I mean, some of the key things that we need to do as far as on deployment, say domestically, is we need to make sure that we are de-risking those deployments. These are big, capital-intensive projects. We in general -- the country as a whole -- we haven't always delivered well on large construction projects. We have got to make sure that we do deliver on the deployment of these reactors, and make sure that we have systems that can de-risk those, especially those first-of-a-kind deployments.

That is why we are very appreciative of the funding from the Congress on the Vance Reactor Demonstration Project and the Carbon Free Power Project. Us doing those public-private partnerships to de-risk those initial deployments, I think, are very important so we can get additional reactors

deployed.

So focusing again on things that we can do to de-risk those initial deployments, I think, is very important. And that will also then lead to being able to do exports, because I think, again, this is very critical, that we are exporting these technologies, as well.

*Ms. Kuster. I am going to try to squeeze in one quick one for Mr. Dorman.

I share this enthusiasm for the advanced nuclear energy, but I am concerned about safety and de-risking. Mr. Dorman, what resources does the NRC need to ensure advanced nuclear reactors are deployed safely?

Twenty seconds.

*Mr. Dorman. Thank you, Congresswoman.

I think we have included those resources in our budget requests, and we need to continue our hiring efforts to make sure that we are getting the critical skills that we need using the insights from our pre-application engagements with the developers.

*Ms. Kuster. And I think we need to be cautious about the deep cuts that have been proposed by our colleagues.

So thank you, and I yield back.

*Mr. Duncan. The gentlelady yields back on. I will now go to Michigan, Mr. Walberg, for five minutes.

*Mr. Walberg. Thank you, Mr. Chairman, and thank you, Mr. Goff and Mr. Dorman, for being here.

Nuclear energy provides the clean, reliable, affordable power this country needs. I know the importance of our nuclear sector firsthand, with nuclear plants on both Lake Michigan and Lake Erie shores in my district. But the current licensing and regulatory processes for new projects, upgrading current reactors, and maintaining and operating our existing fleet is just too onerous. We must update the government's processes.

Mr. Dorman, my draft legislation, the Nuclear Advisory Committee Reform Act, aims to speed up the licensing processes through reforms to the Advisory Committee on Reactor Safeguards. What is the role, first, of the Advisory Committee on Reactor Safeguards?

And second, what kind of licensing actions do they participate in, and how often do they participate?

*Mr. Dorman. Congressman, the Advisory Committee on

Reactor Safeguards is a group of independent experts hired by the Commission who report to the Commission, and they provide an independent review of the work that the staff does in its licensing. They generally participate in any new license, renewed license, and other significant licensing actions.

*Mr. Walberg. Significant work that they have to do, and needs to be done as well, but as efficiently as possible.

As I mentioned before, the nuclear community has suggested that the NRC implement a more efficient process for reviewing the power uprate license amendment applications consistent with NRC practice as recently as a decade ago.

Additionally, where nuclear operators are interested in pursuing multiple levels of uprate, the NRC should consider approaches to streamline the license amendment applications so that an operator can submit the necessary technical reviews once, instead of having to prepare redundant applications and costs.

So, Mr. Dorman, with over two gigawatts of new clean energy capacity available from potential uprates, what is the NRC doing to reverse the trend of longer and more costly uprate reviews?

*Mr. Dorman. Congressman, we have not had uprate reviews for a number of years. And so we know that, from the incentives in the Inflation Reduction Act, that the industry is actively looking at power uprate applications that we are expecting, based on the feedback we are getting, in late 2025 into 2026. So we are looking at our uprate processes, and looking at how we can gain efficiencies in those reviews as the --

*Mr. Walberg. Ways to streamline and --

*Mr. Dorman. Yes, sir.

*Mr. Walberg. Dr. Goff, a recent study by the University of Michigan found that the premature closure of the Palisades Nuclear Power Plant just north of my district will have an adverse economic impact on the region of more than $250 million annually. As I said before, it will also address the critical needs for baseload generation in our state.

Republicans and Democrats came together in Michigan to fund reopening of the plant. And now to the decision lies with the DoE. Do you have any updates on those efforts?

This is a cone of silence in the room, as well, so be

frank.

[Laughter.]

*Dr. Goff. Well, first, I commend those efforts. We want to keep plants up and operational, online. This would be the first time we would, you know, restart a license on that. But those -- we commend the actions that have been taken by -- in Michigan on trying to move forward on that, and we are still assessing, I guess, what can be done as far as the different options out there.

*Mr. Walberg. Well, assess well, assess efficiently, and don't waste any time.

*Dr. Goff. Yes.

*Mr. Walberg. Energy is needed. And right now I think there is a bipartisan support level that we haven't seen before on nuclear power for all sorts of reasons, including climate, environmental concerns, et cetera. So thank you. We will keep watch.

I yield back, Mr. Chairman.

*Mr. Duncan. The gentleman yields back. I now go to Ms. Schrier for five minutes.

*Ms. Schrier. Thank you, Mr. Chairman. Thank you,

Ranking Member DeGette. And thank you, Dr. Goff and Mr. Dorman, for being here today.

Uranium, obviously, is a critical fuel source for the United States, with nuclear power providing nearly 20 percent of our electricity and half of our carbon-free power. We also must eliminate our reliance on Russia for nuclear fuel, and prevent U.S. dollars from flowing into the hands of Russian interests.

This committee in May passed legislation to prohibit imports of uranium from the Russian Federation with safeguards to ensure that our nuclear fleet has access to the fuel that it needs to continue operating. This ban will provide the industry with certainty around need and demand, and the price-insensitive Russian uranium supply that in recent years has eroded U.S. capabilities.

Today we are considering the Nuclear Fuel Security Act of 2023, which is intended to expand our domestic capability to produce, convert, and enrich uranium, both for the existing fleet and for advanced nuclear reactors under development right now. I was wondering, Dr. Goff, how would this legislation, including an expanded strategic uranium

reserve, work in tandem with uranium -- with the Russian uranium import ban to restore domestic fuel cycle capabilities in the U.S. and give us national security?

*Dr. Goff. You know, we are very supportive of any activities, again, to be moving forward to incentivize being able to build out additional uranium enrichment and conversion-type activities in the United States.

That, with the -- and the American assured fuel supply, as far as authorizing that, I think that is something that is potentially very good, as well. That is a critical component of us being able to address shortfalls of uranium, enriched uranium. So the ability to be able to enlarge that, you know, fuel supply there provides us more of a buffer if there is some type of interruption in the future.

But again, you know, we very much support trying to see how we can work together to incentivize new capacity for enrichment in the United States to be able to work ourselves off -- long-term, off the Russian supply of material.

*Ms. Schrier. Thank you. And I appreciate your working with this committee, too, because we want to do whatever you need, within reason, to be able to hasten that. I anticipate

you will face many barriers along the way, and we want to work with you because of this need to convert to non-emitting sources.

I was also wondering, because there were provisions in the bill that we passed, where else can we source uranium, say, from friendlier countries?

*Dr. Goff. Right now we do -- you know, we use about 15 million SWU. The unit for enrichment is this Separative Work Unit. The commercial fleet every year uses about 15 million of those things. In the United States right now we only have about 4.5 million SWUs. So we are buying right now a lot of our material already from Europe, primarily, that -- there are, yes, various enrichment capacities in Europe.

And then, like I say, right now we have around 24 percent of our material comes from Russia. So we are working with our allies and partners for that material.

*Ms. Schrier. Where does Canada fit in that mix? My understanding is that we could significantly source from Canada.

*Dr. Goff. They do -- they provide raw uranium material and conversion. They don't do enrichment. Their reactors

don't require, in general, don't necessarily have to have a lot of enrichment. But they are a valuable partner for providing uranium and uranium conversion services that will feed into an enrichment process.

*Ms. Schrier. Thank you for that clarification.

And I yield back.

*Mr. Duncan. The gentlelady yields back. I now go to Kentucky, to Mr. Guthrie. Five minutes.

*Mr. Guthrie. Thank you. Welcome to Kentucky, the great Commonwealth.

So the Commonwealth is a known energy-producing state, and we are trying to maintain our position as an energy-producing state. Our state and community leaders are looking at converting brownfield sites, and particularly where there were coal-fired plants that are no longer operating, into nuclear sites.

And so, Dr. Goff -- a question for both of you, but start with Dr. Goff -- are siting and licensing decisions faster at brownfield sites, and particularly when there is already some critical infrastructure in place?

And what is the Department of Energy doing to

coordinate?

So is that -- can it be quicker, and then what are you guys doing to coordinate that?

*Dr. Goff. It has the potential to be quicker, as Mr. Dorman mentioned earlier, that you --

*Mr. Guthrie. I was in another hearing, I am sorry --

*Dr. Goff. No, no --

*Mr. Guthrie. -- I apologize.

*Dr. Goff. There is a lot of characterization already for those existing sites. So you could rely on those to help support, you know, the environmental reviews on that, as well.

I mean, the Department is supportive of those type of activities. We did issue a report last year that really did a detailed look at trying to identify brownfield sites around the country, and look at, you know, what are -- which ones are very potentially viable.

The other real benefit that they have, though, is also -- is you have an educated workforce in the energy sector, as well. So you have a workforce that can transition from a coal-fired plant to a nuclear plant. It actually looked at,

again, how many of those jobs can transition over, which is, again, a very large fraction. So, yes, there is a lot of opportunity in trying to do that.

And I will note one of our demonstrations that we are doing, the TerraPower demonstration in Wyoming, is going at a retiring coal-fired plant. So we will be learning a lot from that process and how much that can streamline the process.

*Mr. Guthrie. Thank you.

And so then, Mr. Dorman, what is the NRC doing in that respect for guidance for those sites, particularly? Just kind of comment on that.

*Mr. Dorman. Yes, I agree with Dr. Goff that there are opportunities here. I think how recent and the data and methods are that characterize this site will impact how much benefit we get from streamlining the review in that regard.

There is also unique issues at a coal site potentially, that the coal ash contains naturally occurring radioactive material that has been concentrated that needs to be characterized and considered in planning for a nuclear facility there, and ultimately for the closure of that facility and the cleanup of it. So there may be unique

issues there.

We have -- you mentioned the TerraPower in Wyoming. We also have recently completed the staff safety evaluation for a demonstration reactor in Tennessee, which is on a former nuclear site, DoE. So again, we were able to take some of the insights there from the already-characterized site to help streamline our review.

*Mr. Guthrie. Okay, thank you. Well, that concludes my question for this panel if anybody needs time.

Or Mr. Chair, if not, I will yield back.

*Mr. Duncan. The gentleman yields back. I will now go to Florida to Ms. Castor, I believe, for five minutes.

*Ms. Castor. Well, thank you, Chairman Duncan and Ranking Member DeGette, for organizing this important hearing on how we update our nuclear policies here in America. It is a good time to do that, because over the past couple of years Democrats and President Biden have made tremendous investments in the nuclear power industry. And it is critical for all of us to work together to build on that process.

The Bipartisan Infrastructure Law provided $6 billion

for the Civil Nuclear Credit Program, funds that will ensure our already-existing fleet of nuclear reactors stays safe and competitive. We have 93 reactors at 55 plants. They provide 46 percent carbon -- or they provide 20 percent of our electricity generation and 46 percent of our carbon-free power.

Then add on the Inflation Reduction Act, Democrats created a tax credit of up to 1.8 cents per kilowatt hour for zero-emission nuclear energy, and provided DoE with 700 million to invest in increasing the availability of next-generation nuclear fuel for advanced reactors. So like I said, this is a very good time to do this.

Mr. Dorman, what is the oldest reactor in the U.S. that is operating currently?

*Mr. Dorman. I used to know that, but it closed. I think it is Dresden in Illinois --

*Ms. Castor. So how old?

*Mr. Dorman. -- at this point.

*Ms. Castor. -- As we extend the -- we go through the safety review on extension of licenses, what is our oldest reactor? What do we need to be considering?

*Mr. Dorman. If I remember right, I think Dresden was licensed around the 1970 timeframe, so it would be 53 years-ish.

*Ms. Castor. As we go through this process of trying to safely extend the life of nuclear power plants, I am concerned with extreme events right now. And there is one plant in Florida, Turkey Creek, where it was built right there between Biscayne Bay and the Everglades. They had extended the life of that plant a few years ago, and then did a safety review, and they rolled it back.

So I am curious, as we update our policies on review of the existing plants, do you have the authority to really look at the impacts of climate change, whether it is extreme heat, or flash floods, hurricanes, you know -- earthquakes are a different, or a little different. But I just -- as we talk about streamlining and environmental reviews, I don't want us to lose sight of the increasingly unpredictable extreme events caused by climate change.

*Mr. Dorman. Yes. Thank you, Congresswoman.

Following the Fukushima accident we did a complete review of flooding and seismic issues for all the operating

plants in the United States, and we also established what we call a process for ongoing assessment of natural hazards information. So that is a process where the staff is constantly looking to USGS for seismic, looking to NOAA for weather information, looking to the Corps of Engineers for dam reliability issues that could impact nuclear power plants.

Where we have -- where we would see any gap in the licensing basis of an existing plant based on new information we have the authority we need to engage that licensee and bring about change to address that, such a gap, if it were to occur.

*Ms. Castor. Dr. Goff, do we need to -- as we update policies, do we need to keep anything in mind in particular for extension of useful life, or the new sites for the small modular reactors when it comes to these -- the shifting extreme events?

*Dr. Goff. Yes, we do need to take into account the climate, and the river, the water usage.

And I will note a lot of these plants, though, some of the advanced ones, can actually do more dry cooling, too. So

they have less water needs, which could be very important going forward --

*Ms. Castor. Because wasn't there recently an incident in France, where the water temperature to cool the reactor was at issue?

*Dr. Goff. You can at times downrate plants because of the -- whatever their cooling water is. If it gets too high, they have to back off on the power level. That happens lots of times during the summer at a lot of different areas, and all is --

*Ms. Castor. So do you need -- do the agencies need additional authorities, or do you have the authorities that exist now to conduct all of the necessary reviews?

*Dr. Goff. I believe we have the authorities right now to do those necessary reviews to assess --

*Ms. Castor. And would any of the legislation here counteract that, take authorities away that you need in this unpredictable world right now?

*Dr. Goff. Not that I am aware of, no.

*Mr. Dorman. Not that I am aware of.

*Ms. Castor. All right. Thank you very much. And --

*Mr. Duncan. The gentlelady yields back, and I will now go to Alabama.

Mr. Palmer, five minutes.

*Mr. Palmer. Thank you, Mr. Chairman. I appreciate the witnesses being here. I want to get a little more specific about what we could do going forward in terms of utilizing nuclear technology for generating power, but before I do that I want to get back to this issue about fuel. And long term, if we transition to advanced reactors that can recycle spent fuel rods, that could virtually eliminate reliance on any foreign supply chain for enriched uranium.

Dr. Goff, I think you were talking about our reliance on Russia for uranium. We had the director of the National Nuclear Laboratory in here from Idaho, and he made the point that if we went to the advanced reactors and started recycling the spent fuel rods, that we could operate our nuclear facilities for about 100 years. So I think that would address that issue. Not totally, but it would address it in a very significant way.

Mr. Dorman, you served on nuclear submarines. And one of the things that interests me is the safety and the power

generation capacity of a nuclear submarine. It is about 150 to 200 megawatts. Is that about right?

*Mr. Dorman. That sounds like the right ballpark. It has been about 30 years for me, but that sounds about right.

*Mr. Palmer. Yes. But the thing that interests me most about this is that they are a standard design. They are modular. They can be assembled somewhere else, and then be installed in a submarine. I don't know that we have ever had to replace one. We may have, but they are designed such that they can fit pretty much any submarine that we operate.

And if we were to go to the small modular reactors, I think, by definition, they can -- a small modular reactor can produce up to 300 megawatts of power. Is that your understanding?

*Mr. Dorman. That is the range we are looking at for most of the applications we are anticipating. Yes, sir.

*Mr. Palmer. And one of the points I think that you raised was the problem with fitting things into the grid. It is a huge problem for renewables. That is one of the reasons why there is so much interest across the aisle for building out a new grid.

But with a small modular reactor, an SMR, you could fit that in pretty much anywhere. That is one of the advantages of a small -- of an SMR, is that it can be located in places where a larger nuclear reactor or renewables could not to meet the power needs of different communities. Is that a fair statement?

*Mr. Dorman. Yes. So we are focused on the safety and less on the grid compatibility piece, except for the reliable power back to the plant. But it sounds reasonable.

*Mr. Palmer. Well, that is -- the safety factor is one of the real assets of the SMRs, is because they are standard design, they are modular, and you even have micro reactors that the military is looking at using to power military bases, but could also be used in -- to meet power needs in emergency situations, whether it is post-disaster -- is that a fair point, as well?

*Mr. Dorman. Yes.

*Mr. Palmer. Well, here is part of what I think we need to be thinking about, Mr. Chairman, is that we have this emerging technology. We have got some that have been approved by the NRC. I think there is projects different

places around the country, one I know in Utah. And this might be the way to go, because these can be manufactured and assembled, delivered on site in locations where we can't get turbine farms, solar farms, can't get a large nuclear reactor. And the permitting on this ought to be a considerably shorter duration than any of these other facilities that we are talking about.

Mr. Goff, Mr. Dorman, either one of you, comment on that.

*Mr. Dorman. I think you hit a key principle there, Congressman, of standard design. You know, once we have gone through and approved a design, it should be very straightforward for us to do the safety review for that design in other locations. That has not been the experience in this country. We have 93 very different reactors, so the designs have evolved as it has come along.

So I think getting a very standard design would be very helpful to a streamlined process.

*Mr. Palmer. I really appreciate the opportunity to raise these points. This is what France does with their nuclear reactors with standard design. I think it is a good

direction for the United States.

I yield back.

*Mr. Duncan. The gentleman yields back, and I will go to Maryland, Mr. Sarbanes.

*Mr. Sarbanes. Mr. Chairman, thanks very much, and thanks to you all.

Obviously, based on the hearing today and some of the bills that we have been speaking of, we know that while nuclear energy is already a very significant force in our domestic energy production portfolio, there is opportunities to work in a bipartisan way to try to bring its constant reliable and carbon-free power to even more Americans. So it is a very exciting topic, actually, in the broad context of all the challenges we are facing on the energy front.

So we know this will require licensing and deploying nuclear reactors, but another critical part of the domestic expansion of nuclear energy is going to be building and maintaining a robust Federal workforce -- we have acknowledged that, I know others here have spoken to it -- a workforce that we can count on every day to ensure safe and secure nuclear operations, as well as enable technological

advancements.

This is very important to the broad public, too. If the full promise of this resource is going to be realized, we know, looking historically, that the public needs to have confidence. That derives not just from the technology, but it derives from the experts that are administering and managing the technology. So I want to learn a little bit more about the current workforce at the NRC and the Department of Energy's Office of Nuclear Energy.

Mr. Dorman, can you talk about the importance to the NRC of retaining current staff, people you have that are good and that we can rely on, while also obviously trying to recruit new staff both at early and mid-career levels? Because I imagine being able to pull people in who have got experience over years is an important part of the resource picture that you want to build.

And then give me the flip side. If we can't adequately staff the NRC, what are the consequences that you can foresee there?

*Mr. Dorman. Thank you, Congressman.

I think, as was touched on earlier in the conversation,

we have -- about a third of our workforce is currently eligible to retire. And so one of the blessings we have is that our workforce works well past their eligibility to retire, and that average number has actually been increasing in recent years. We have a very dedicated and committed workforce.

But they are not going to be there forever, and so we are working hard to replenish the staff. We hired over 200 people last year, and we are on track to hire probably 250 to 300 people this year, which means that about 15 to 20 percent of our workforce will be less than 2 years. So we are very focused on staff development, training, and qualification, getting those people up to speed in the work that we do so that they can continue to pick up that load.

You mentioned the distribution. We have, over the last three or four years, re-instituted our entry-level hiring program -- we call it an apprenticeship network -- to bring in people at the start of their career. But we are also very reliant on a significant portion of our external hiring being experienced people that we bring in with the knowledge and skills, and we just work with them on developing the

regulatory tradecraft.

*Mr. Sarbanes. And Mr. Goff, could you talk about this in the context of the Department of Energy's Office of Nuclear Energy, and the recruiting and retaining strategies you are using there?

*Dr. Goff. I think we have the similar challenges that were noted by the Nuclear Regulatory Commission. We have -- a number of our staff could retire. In fact, over the last few years we have experienced a lot of attrition through the retirement.

As far as on the Federal staff, we are much smaller than the Nuclear Regulatory Commission, but we are responsible for the laboratories, which does a lot of our work. And we are seeing significant hiring increases in the laboratories, especially, I would say, at Idaho National Lab, the Office of Nuclear Energy's lab. We are, you know, seeing a 10 to 20 percent increase in hiring.

But you are getting a lot of turnover, as well. There is a lot of competition with all these new vendors. So people are leaving, which -- I support that, I want the vendors and all to be successful. But there is more turnover

now within the industry --

*Mr. Sarbanes. Yes --

*Dr. Goff. -- and more growth.

*Mr. Sarbanes. Let me follow on that in the time I have left. And I do just want to acknowledge, as I know has been done already, but Ranking Member DeGette has H.R. 4528, which is -- would help significantly in terms of this recruitment and retention challenge.

But talk about the competition with the vendors, because everybody's efforts to recruit and retain is derivative of a broader ecosystem in which we are seeing shortages, and every player that is looking for these people is competing. So what does that look like?

Because it is sort of -- every -- you know, poaching, stealing, borrowing, whatever you want to call it, talk to that dynamic in 15 seconds, if you can.

*Mr. Duncan. The gentleman yields back. I will now go to the --

*Mr. Sarbanes. Okay.

*Mr. Duncan. -- crossroads of America, Mr. Bucshon, for five minutes.

*Mr. Sarbanes. Zero --

*Mr. Bucshon. Thank you, Mr. Chairman. We have two hearings going at the same time, Health and this, so I apologize.

I want to thank the witnesses, of course, for joining us today.

America can and should be a leader in the advanced nuclear energy space. I was with Chairman Rodgers on the trip over to Europe, to Poland and Czech Republic, and we heard a lot about what they are doing over there, and we want to be leaders here.

It is a valuable component to an all-of-the-above energy strategy. It helps with the goal of lower emissions, and it contributes immensely to a diverse and secure energy mix in the United States. I am interested in boosting the development and deployment of advanced nuclear energy technologies here in the United States, and there are a number of hurdles that companies may face when seeking to license advanced nuclear reactor technologies.

Mr. Dorman, could you just -- and I know you may have done some of this -- could you just describe briefly the

interactions a new application has with NRC, from pre-application meeting and planning to the acceptance review and through the actual licensing process? What are the steps?

*Mr. Dorman. Thank you, Congressman.

So the pre-application is an entirely voluntary process, but we strongly encourage it, particularly with new and innovative technologies, because it gives the opportunity for the staff to learn the technology and be better prepared for the application, and for the applicant to understand what the agency is going to be looking for in a complete application. So it is -- it can take several years, depending on what point in the development of the design the applicant engages.

The license review, once the application comes in, will take about 60 days to look at the application against the regulatory requirements and determine that the application is complete. And then we will docket it for the staff's review, and establish a schedule for that review based on the issues that arise in that licensing application.

*Mr. Bucshon. So do you know roughly how many hours of work would typically be charged?

Because I have -- one of the pieces of legislation we are talking about is the Advanced Reactor Fee Reduction Act, trying to reduce the cost of this process. Do you know roughly how many hours of work would typically be charged in fees for the process?

*Mr. Dorman. It is going to vary, depending on the innovations and the complexities in the design.

*Mr. Bucshon. Right, yes.

*Mr. Dorman. -- fixed number, but generally, I would say, on the order of the ten to tens of thousands of staff hours.

*Mr. Bucshon. Yes, so a very costly process.

*Mr. Dorman. Yes.

*Mr. Bucshon. Do you know roughly what portion of these initial fees are mission-direct costs and what portion are indirect or administrative costs?

*Mr. Dorman. Roughly, I would say half. There is one hourly rate that the current --

*Mr. Bucshon. Right.

*Mr. Dorman. -- that we currently calculate, and I think it is in the ballpark of half.

*Mr. Bucshon. Yes, $300 an hour, I think, final hour rate.

*Mr. Dorman. Right.

*Mr. Bucshon. Something along those lines.

*Mr. Dorman. Yes, sir.

*Mr. Bucshon. Okay. In your opinion, would eliminating some of the costs for pre-licensing activities encourage more applications and designs from smaller companies?

Do you think that is a rate-limiting step?

*Mr. Dorman. I think it could. That is kind of out of my wheelhouse.

*Mr. Bucshon. Yes.

*Mr. Dorman. I think the predominant cost for the applicant is the development of their design, and the research that they need to do to provide the technical basis to support it. But I am sure that reducing the cost of our review would be --

*Mr. Bucshon. Yes.

*Mr. Dorman. -- appealing.

*Mr. Bucshon. So -- and this is for either. I have some time left, so either one of you all. If there were

three key things that we could do that would make this process move along more quickly and keep America out front, what would it be, just broadly?

And that can be, you know, regulatory reform. I mean, just in your experience, what are the rate-limiting steps?

I mean, what is really holding us --

*Mr. Dorman. I think Dr. Goff touched on it earlier in the context of financing. You know, I think ultimately getting these products to market is a question of the financing.

I think regulatory reform is an area that we are focused on, and that is our area, and we welcome the committee's thoughts on that.

*Mr. Bucshon. Yes, I mean, the longer it takes, right, the more costly it is. So it is kind of a vicious cycle, right? If it takes longer to review, it becomes -- continues to be more costly. And we are seeing that now, right, in Georgia and other places. You know, we have seen it in the past.

Also, I just want to make it clear we -- the number-one focus is on safety, right, and doing this properly.

*Dr. Goff. Yes.

*Mr. Bucshon. Do you have a comment?

*Dr. Goff. Well, I will agree with that, yes. The number-one focus still is on safety.

But yes, going back to your earlier question, I would agree, as well. I mean, one of the key issues is financing, you know, is --

*Mr. Bucshon. Yes, because we are going to have these small modular nuclear reactors probably in the next 5 to 10 years, maybe sooner.

And, you know, every time we deploy one of these things, you know, we basically roll it up in a truck and connect it. We can't have a multi-multi-year-long -- we have to figure that out, I think, right, that we can't take 10 years when we have a product that -- everybody knows the product, it is just a matter of, okay, now we are deploying it to here, and we are going to replace an old coal-fired power plant, literally just plug it in there. We can't take 10 years to do that, right? So we have got to figure that out.

I yield back.

*Mr. Duncan. Good points. The gentleman yields back.

I now go to California, Mr. Cardenas. Five minutes.

*Mr. Cardenas. Thank you very much, Mr. Chairman. I appreciate the leadership putting this hearing together.

Over the last few months this subcommittee has had the privilege of having the Nuclear Regulatory Commission testify before us multiple times. Throughout these conversations the NRC -- I have been vocal about my concerns relating to the life cycle of spent nuclear fuel. And during our last hearing with the Commission, Chairman Hanson identified that spent fuel storage and ultimate disposal remained key policy issues that we are still having to figure out how to contend with properly.

I continue to believe that addressing the legacy of toxic waste associated with nuclear energy should be at the forefront of our conversations. Our biggest priority should be to protect public health and safety. And as such, it is also our shared responsibility to ensure that current and future nuclear fleets are licensed and operated safely. Luckily, data has indicated that the production of nuclear power in the United States is safe, largely due to the current processes and regulations in place.

Of the 15 bills included in today's hearing, several reduce mandatory hearing and public notice requirements and change the environmental review process. Mr. Dorman, can you please explain what the current public notice and hearing processes look like?

*Mr. Dorman. Yes, sir. When a license application comes in, and the staff has determined that it is complete and dockets it, the staff issues a notice in the Federal Register of an opportunity to comment and an opportunity for public hearing on that action.

In addition, on the environmental review, we go out into the community and conduct what we call a scoping meeting, where we get the community's insights on the scope of issues at play in the environmental report for the site, and then for -- the draft environmental impact statement is noticed for comment. And then there is comment resolution in the staff reaching to a final environmental impact statement.

*Mr. Cardenas. Okay. Can you please explain or discuss why the process was established the way it is, and the importance of this process?

*Mr. Dorman. Well, I think part of it is governed by

the Procedures Act. So there are legal requirements that we need to meet, as well as under NEPA. But I think, in the context of the Commission's strategic goals of strategic -- building stakeholder confidence in the work that we do, we are very much engaged in the communities that may be impacted by our licensing decisions, and making sure that they have the opportunity to hear and understand what we are doing to ensure that they are safe.

*Mr. Cardenas. I think at the root of that, that you just described, the real purpose is because we live in the United States of America, where every human being who lives here has the right to know what is going on to the left of them, to the right of them, what is going on in their community, whether or not it is going to be safe or endanger them, et cetera.

I have been legislating for 27 years now, and I heard one of my colleagues give a ridiculous comment that in China, for example, they can build a dam darn near overnight. That is a silly comparison, because in China I don't think the people have the rights that we do in this country. And thank God we have the rights that we do in this country. And with

that comes, unfortunately, processes that may cause complaint by those involved in the process.

But at the end of the day, as was mentioned by Dr. Goff and you, Mr. Dorman, you agreed with one of my colleagues that public safety, safety, is at the root of everything that we should be concerned with and involved with in every step and every action that we take when it comes to nuclear facilities. Isn't that correct?

*Mr. Dorman. Yes, sir. Safety is our focus.

*Mr. Cardenas. Okay. Safety for people, right?

*Mr. Dorman. Yes.

*Mr. Cardenas. Thank you. Can you similarly expand on what the current environmental review process looks like, its history, and the importance of each aspect of the process?

*Mr. Dorman. Well, I briefly touched on the sequence of events --

*Mr. Cardenas. Yes.

*Mr. Dorman. -- of the scoping and drafting, but there is -- it actually starts with the applicant doing site characterization, and characterizing the environment of the site that they plan to work on, and what they propose to do

at that site, and exploration of alternatives. It includes an assessment of severe accident management alternatives, ways that, if something adverse did happen, it could be mitigated.

So there is a very detailed process looking at the site, the potential impacts to the site, alternatives, and mitigations.

*Mr. Cardenas. And there are various levels of governments in the process, local governments, state governments, Federal Government, all these different processes.

*Mr. Dorman. Yes.

*Mr. Cardenas. Do you think there is a possibility that we could actually be more efficient by having more parallel tracks when and if -- without compromising safety, without compromising informing the public -- perhaps more parallel tracks?

*Mr. Dorman. Parallel tracks and, really, a thorough understanding of the stakeholder community so that we engage them very early in the process so that all the issues get raised early so that they can be addressed efficiently.

*Mr. Cardenas. Excellent. Thank you very much, Mr. Chairman. I apologize, my time expired. I yield back.

*Mr. Duncan. The gentleman's time has expired. I will now go to the vice chair of the committee, Mr. Curtis, for five minutes.

*Mr. Curtis. Thank you, Mr. Chairman. I really appreciate this hearing. This has been very interesting. I think it should be very encouraging to the American people to hear the vast amount of bipartisan enthusiasm for this.

I think we have heard today about a world where we see hundreds of nuclear plants in -- by the year 2050 and perhaps even beyond that. And yet I have watched the struggle to -- in Utah we have a project by UAMPS, a -- power cities. There is also one that you two have referred to as TerraPower. I prefer to refer to it as Pacificorp, because that brings it back to Utah, even though the plant will actually go in Wyoming. But strong Utah ties there.

And in the case of Pacificorp, I think you see incredibly strong resources coming together to take every advantage of moving forward with permitting in a pretty powerful way. Yet in the example of UAMPS, you have a number

of cities, some of which are in the tens of thousands of residents, not hundreds of thousands, very limited resources. And I have watched from the beginning of their project seeming -- impossible to cross this hurdle. So in my few minutes today I would like to talk about that barrier, and how we lower that barrier to get to the hundreds of plants that we foresee.

I have a bill. It is called the Advanced Nuclear Reactor Prize Act. It provides assistance to innovators that successfully license and deploy advanced reactors. Currently, first mover advanced reactors will have to expend significant financial resources. You both kind of called out finances as one of our most difficult barriers. My bill authorizes the Secretary of Energy to make targeted awards to cover regulatory costs to first technologies that are licensed and made operational in certain categories. The incentive of the award will help first movers to submit quality applications that allow the public to benefit from safe, reliable nuclear technology.

Could you both briefly talk about this attempt to lower the barrier if you see value in this?

And then I would like to kind of probe other opportunities, as well.

Mr. Dorman, would you start first?

*Mr. Dorman. Yes, thank you, Congressman. The proposal that you mentioned, as I understand it, would provide the award after the completion of the regulatory review. And I think that that is important to us.

And you mentioned the quality applications. Quality applications are going to be critical to our being able to do efficient reviews. So I think having an incentive that supports that outcome is consistent with what we need to get our job done the best possible way.

*Mr. Curtis. Thank you.

Doctor?

*Dr. Goff. I agree strongly that, yes, helping to finance the licensing of those early movers is a very important incentive. We have already -- we are doing that some already like, say, through the UAMPS project. You know, we helped -- you know, the -- cost-shared. The burden of doing the design certification for the U.S. was public-private partnership.

Similarly with the Pacificorp reactor, as we will say there, similarly with that we are cost sharing as they are going through the licensing process. So I think that cost sharing is important as far as moving forward.

I will even note that is what we did for the AP-1000 that was built in Georgia. That was a public-private partnership during the licensing process and the design certification. So I think having some public-private partnership to take care of some of that design certification cost is an important incentive.

*Mr. Curtis. You know, for reference, I was chair of UMPA, which is a sister agency to UAMPS, and so that is why I have watched them go through this process for a number of years. And I am amazed that they have been able to make it as far as they have. And I agree without the help that is being provided, there is no way that they are able to plow through this.

I have also seen, in my current role -- earlier we talked with another representative about the brownfield sites and this Pacificorp project. And I can tell you firsthand, as somebody who has a county called Carbon County in their

district, how much enthusiasm and excitement there would be for this, and how many more goals we would actually accomplish in addition to clean, reliable power, helping these communities that have been so devastated by a lot of this transition. So thank you for those efforts, and thank you for all you are doing.

Maybe with 30 seconds left, let me just shout out you -- the other thing that you mentioned was regulatory reform. Somehow, when the word "regulatory reform'' is mentioned, all of us think of different things. I know some think of transmission, some are thinking of pipelines, right? And we don't have time to explore that, but I would just like to put out there that that is a place where we do need to come together as Congress, and get broad consensus and move forward if we are going to lower this barrier.

Thank you, gentlemen, for your time, and I yield.

*Mr. Duncan. It is now my pleasure to recognize, since I am an honorary Texan, the gentlelady from Texas, Mrs. Fletcher, five minutes.

*Mrs. Fletcher. Well, thank you so much, Mr. Chairman. I appreciate you holding this hearing today. And I really

want to thank our witnesses, too. This has been a really useful hearing, I think, for all of us. I appreciate your thoughts and insights. And as we are getting toward the end here, we have covered a lot of the topics that I had hoped to hear from you about, and I appreciate your insights and your answers.

As we have discussed throughout the day, nuclear energy plays just an essential role in generating reliable, carbon-free baseload power. That is certainly something that we see in Texas, where I have visited our south Texas nuclear power plant. But we also know -- and our work on sort of the next generation of nuclear technologies -- and that is really important in sort of our path forward.

So one of the things we have touched on a little bit today are the small modular nuclear reactors. And obviously, that offers a lot of potential advancements that are going to improve cost and efficiency and versatility for the grid, as well as addressing some of the concerns that people have raised over the years.

And we know, and we talked a little bit about, you know, the process at NRC to review these advanced nuclear reactors.

And I know that along the Texas Gulf Coast there are some active partnerships trying to bring this technology to light, and so I wanted to ask you, Mr. Dorman, because you touched on it a little bit in your opening, the work that the NRC is doing to address the bipartisan NEMA requirements.

And I think that this is an area where I have heard a lot of concerns from folks that the draft rule that has been put together really just doesn't meet the requirements that Congress laid out, but also -- and it is something we hear, unfortunately, a lot in this context -- isn't workable. And so that is the big challenge, I think, in front of us.

And so can you talk just a little bit more with the time that I have about what the NRC is doing to try to ensure that the part 53 rule will meet the requirements of NEMA, and specifically the new licensing framework that -- to be both risk-informed and performance-based?

I think that that is some of the tension. And if you could, just talk a little bit more about what you are doing.

And I know you anticipated movement on the rule quickly. I know you said you are ahead of schedule, but those seem to be the concerns. And so I want to know how you are seeing

them play out now, and how you are addressing them as we move toward a final rule.

*Mr. Dorman. Thank you, Congresswoman. So I will speak to what the staff has done, because the rule is currently with the Commission.

The staff had an extensive process over two years of iterative language development with significant stakeholder engagement. We did have areas where we took stakeholder feedback. We have, as you know, a two-framework rule before the Commission. The second framework was developed by the staff in response to stakeholder inputs. But there are a number of areas that we had stakeholder inputs that was contrary to where the staff was coming out.

In presenting the rule to the Commission, the staff teed up four specific issues like that with what the basis for the staff's recommendation was, as well as other considerations that the Commission could evaluate. So that -- the staff brought those issues to the Commission, and we are awaiting the Commission direction on that.

As you noted, we are two years ahead of the NEMA schedule on that, so we have some leeway to take that

direction and whatever direction we get from the Commission, and work it forward.

*Mrs. Fletcher. Well, thanks. I appreciate that, because I do think there is still some outstanding concerns, and that is what I am, you know, continuing to hear.

*Mr. Dorman. Yes.

*Mrs. Fletcher. And I think the other concern that I just want to touch on -- I have a little over a minute left, and this is again, something you mentioned in your opening -- but can you talk a little about what the NRC is doing to ensure that the licensing frameworks make sense for all reactors, and not just the traditional light-water reactors that are part of our existing fleet, but sort of all reactors going forward?

You have got about a minute for that.

*Mr. Dorman. Yes, thank you, Congresswoman.

So the part 53 would be what we are trying to do that would be technology inclusive. The existing rules in part 50 and 52 were designed for large, light-water reactors. We anticipate two applications for non-light-water reactors in the next year under part 50 and 52. And so part of the

pre-application engagement with those applicants is looking at those rules, applicability considerations of those rules, and any areas that are not applicable or may need exemptions from those requirements.

So we are working with those applicants to work through and get through a coherent licensing process and sound conclusions under the existing framework.

*Mrs. Fletcher. Great. Well, thank you so much, Mr. Dorman, and thanks to both of you for your time and testimony today.

With that, Mr. Chairman, I will yield back.

*Mr. Duncan. The gentlelady yields back. I now go to the gentlelady that knows about the Palo Verde Nuclear Power Plant, Mrs. Lesko, for five minutes.

*Mrs. Lesko. Thank you, Mr. Chairman. Thank you for being here to both of you.

Mr. Dorman, I was told, I don't know, probably about a year ago or so, that the NRC sends out additional inspectors to nuclear plants in addition to the onsite inspectors that are already at the plants. I was told that some of these additional inspectors sometimes do what they believe is

outdated inspections, maybe duplicative inspections, and that the thought was that maybe the extra cost of this additional inspector doesn't always outweigh the benefits.

And so, because of those concerns, I have introduced this one bill to try to come up with ideas or a report from the NRC. And my bill requires the NRC to produce three reports for this committee detailing how to improve regulatory oversight: the report one would discuss lessons learned from technologies used during the COVID crisis to see if they can be applied on a permanent basis, because I was told there was some that worked well; our report two would access specific elements of oversight and inspections that can be modified using technology, improved planning, and continually-updated risk-informed performance-based assessment; and report three would review office and facility space requirements.

Mr. Dorman, have you heard of any of the inspection concerns that I just talked about?

*Mr. Dorman. I think not in those terms. We have our resident inspectors, whose full-time duty station is at the nuclear power plant. And they are focused primarily on

operations and maintenance issues and response to incidents that occur at the site.

The staff in our respective regional offices are deployed as part of our baseline inspection program to do more focused inspections in areas like engineering, security, and emergency preparedness. So they are specialists, and they are focused in different areas of our baseline inspection program than what the -- is done day to day by the resident inspectors. So that is what I am hearing that you describe.

I think we are always open to improvements in our inspection program. The process that we have in place now was established a little over 20 years ago, and it establishes a baseline inspection program combined with objective performance indicators that are -- that, combined, provide a minimum level of oversight to assure safety of the facility on an ongoing basis. And then there is a structured process if there is degradations in performance to -- for escalation of additional inspection to ensure that causes are understood and fixed.

But I think, in terms of your proposals, we are happy to

work with the committee on those report areas. There are technology enhancements that occurred during the pandemic to support our mission effectiveness during the pandemic, and I think there are ways that we can apply some of those.

We also have been working to put better tools in our inspectors' hands to make them more efficient in the field, in terms of technology. So I think there is definitely areas we can work with you on.

*Mrs. Lesko. Good. I would appreciate it. Mr. Dorman, it is also my understanding that the NRC staff -- maybe about -- I don't know how recently, I think within the last year -- originally recommended conducting that -- inspections every three years, instead -- wait, let me back up -- the problem identification and resolution program is part of the reactor oversight process, which follows up on how plants identify and resolve issues. As part of the overall efforts to enhance the reactor oversight process, this program was reviewed. One of the program's many inspection activities involves a large team inspection which is conducted every two years.

Mr. Dorman, it is my understanding that the NRC staff

originally recommended conducting that inspection every three years, instead of every two years, but that recommendation was withdrawn. Can you tell me more about this, and why the recommendation was withdrawn?

*Mr. Dorman. The recommendation that went to the Commission originally went with a view expressed in the paper that the leadership in our regional offices who implement the program hadn't had a chance to fully digest this recommendation, and were not on board with the recommendation.

So the reason we withdrew the recommendation was to go back and further develop our -- look at the whole problem identification resolution component, which consists of that two-year inspection into the licensees program effectiveness, as well as individual samples of discrete actions that the licensee identifies and resolves over the course of time.

And having done that review, the staff did not see a net benefit in the change in the -- went back to the Commission and reported out that we did not intend to change that from two years.

*Mrs. Lesko. Thank you.

And Mr. Chair, I may submit more questions because I have more questions with examples of -- there is kind of an egregious example in 2017 how just changing two words of a corporate name was going to cost this nuclear plant -- not the one that I am familiar with, but a nuclear plant -- like, tons of money. And so I will submit it to you so you know what I am talking about.

[The information follows:]

**********COMMITTEE INSERT**********

*Mr. Dorman. Okay, thank you.

*Mrs. Lesko. Thank you very much.

*Mr. Duncan. The gentlelady will submit questions, and her time is up. I now go to Ms. Matsui for five minutes.

*Ms. Matsui. Thank you very much, Mr. Chairman.

Nuclear energy has the potential to provide a reliable, carbon-free source of baseload energy. However, we cannot hold a hearing on the future of nuclear energy without addressing the 88,000-ton elephant in the room: nuclear waste. Before we build a new generation of reactors, we need to have a clear plan for how to dispose of spent fuel. The Rancho Seco Nuclear Power Plant in my district was shuttered over 30 years ago, and yet we are still dealing with the spent fuel.

I am pleased to see the Department of Energy take this problem seriously with a consent-based siting approach. I have led efforts to support annual funding for this program at DoE, and I also lead the Store Nuclear Fuel Act, which would authorize an interim storage program at DoE.

Dr. Goff, I was encouraged to see DoE's funding announcement in June to advance the conversation around

consent-based siting for spent nuclear fuel. Dr. Goff, how will these 13 grants translate into the next stage of eventually siting a spent fuel storage facility?

*Dr. Goff. Thank you for the question, and thank you for the support in this activity. We are excited to be able to move forward on this consent-based siting for, potentially, a Federal interim storage facility. We are looking at this as being a three-phase process: this first phase that we are in right now with the consortium, the 13 different consortiums that were awarded, is really focused on planning and capacity building; you know, the next phase will be focused more on screening and assessments of siting; and then the final phase will be more toward negotiation and implementation.

But right now, these 13 teams will be helping us be able to, you know, have capacity building within the different communities and within the different stakeholders. So those entities that are spread out across the country will be able to interface with different communities and stakeholders that want to learn and understand more about potentially siting one of these facilities. So they will be able to make awards

from those consortium to, again, help them understand and be able to know how they want to move forward into the next process, and help inform us, as well, on how we need to take this into the next stage, as well, within the Department.

*Ms. Matsui. Okay. In DoE's April report on the consent-based siting process, you state that, while DoE is focused on consolidated interim storage facilities, you are also pursuing a comprehensive integrated strategy for spent nuclear fuel, and you expect the siting of interim storage could inform the siting of permanent disposal.

Dr. Goff, can you provide an update on where DoE is with developing a comprehensive strategy for siting long-term disposal of spent fuel?

*Dr. Goff. Yes, we do recognize that we need to go beyond interim storage, so we do need to have, again, kind of a three-phased approach. We need to have an integrated storage process, transportation process, and eventually geological disposal, as well.

We have talked about what we are doing in the integrated storage. We are continuing to do, you know, research and development-type activities to help us be able to move

forward on both the transportation and the geological disposal, as well. That will support whatever type activity and whatever type repository you go into. So the work we are doing on geological repository, we are doing R&D to assess a number of different type of geologies. On transportation we are working and have worked toward licensing a railcar to be able to transport this fuel as it leaves retired sites --

*Ms. Matsui. Right.

*Dr. Goff. -- and all, as well. So we are doing a lot of activities to make sure that we are ready to implement as -- implement those next stages, as well --

*Ms. Matsui. Sure.

*Dr. Goff. -- process.

*Ms. Matsui. Now, there are several international examples of countries successfully navigating the consent-based siting process for long-term geologic storage. Finland now hosts the world's first permanent site for high-level nuclear waste, and France and Switzerland have also proposed sites for long-term storage.

How is DoE incorporating the lessons from other countries in how we approach long-term disposal?

*Dr. Goff. We are making sure that we are collaborating with all of those other countries, as well, either bilaterally -- we are working with Finland and Canada, a number of different countries like that -- to take their lessons learned -- like I say, especially the Finns -- on how they were able to site repository.

But we are also working through multilateral organizations like the Nuclear Energy Alliance, as well, to, again, look at what the lessons learned around the world are so we can take those and apply them to our system and hopefully, also, then be ones in the future to talk about our lessons learned and how other countries can apply them, as well.

*Ms. Matsui. Okay, thank you. I know all of us really believe that that aspect of nuclear waste is really critical to moving forward.

So thank you very much, and I yield back.

*Mr. Duncan. The gentlelady yields back. I now go to Mr. Balderson for five minutes.

*Mr. Balderson. Thank you, Mr. Chairman, and thank you both for being here today.

Mr. Dorman, in your testimony you note that the industry is looking at using brownfield -- and we talked a little bit about that today -- sites such as former coal plants to use existing infrastructure and workforce. Have you received applications for new nuclear plants at these types of sites?

*Mr. Dorman. We have not to date. We are anticipating one in the next year.

*Mr. Balderson. Can you expand on how the NRC would leverage existing data about the sites to speed up any environmental reviews?

*Mr. Dorman. So the use of existing data is going to depend a little bit on the currency of the data and the methods used. But we would use any information that the licensee or the applicant provided from the historic characterization to gain efficiencies in our review.

*Mr. Balderson. Okay, thank you. That is what we like to hear.

In 2021 -- Mr. Dorman, again, I am sorry, sir -- NRC ceased rulemaking efforts related to commercial reprocessing, citing a lack of interest from the industry. However, since that decision there have been a number of private-sector

entities that have emerged with plans to pursue commercial reprocessing at various scales. Some of these companies have received substantial funding from DoE programs for R&D.

Mr. Dorman, can you discuss what the NRC is doing to prepare for reviewing applications from such entities?

*Mr. Dorman. So, to my knowledge, we have one license plan for a company called Oklo to apply for a reprocessing facility. So we have begun what we call pre-application engagements with that licensee.

We also, going back 15 years, we had 3 letters of intent for reprocessing facilities that -- the applications never materialized, but we did considerable work at that time to prepare for those. So we are refreshing on that as we get ready to potentially get another application for reprocessing.

*Mr. Balderson. Okay, thank you. Mr. Dorman, again -- sorry, Dr. Goff -- I would like to follow up on an issue that Chair Rodgers raised earlier during last month's hearing with the NRC commissioners.

Commissioner Caputo noted the need for enhanced performance indicators so the Commission and the public can

track the duration and status for licensing reviews. On a slightly separate note, Mr. Dorman, I am curious how NRC measures staff performance today. And can you describe your performance indicators?

*Mr. Dorman. Yes, sir. I talked a little bit about it earlier. When the staff gets a license application in, when we have determined that it is appropriate for docketing, we look at the issues raised in the application, establish a review schedule and a level of staff effort associated with that review. And so we -- I believe we communicate those to the applicant, and we track those internally to make sure we are meeting those.

So I think one of the concerns that Commissioner Caputo raised is that may not be broadly visible to the public. I think we report out on those macroscopically, a roll-up of how we are meeting those, in some of our reports to Congress. So there are -- I think part of the concern that I hear there is we could do better in public-facing indicators of performance in that regard.

*Mr. Balderson. Okay, thank you very much.

Mr. Chairman, I yield back.

*Mr. Duncan. The gentleman yields back. I now go to Mr. Pfluger for five minutes.

*Mr. Pfluger. Thank you, Mr. Chairman, and I appreciate you holding this important hearing. Thank you to the witnesses for being here.

I am concerned just overall about where the Administration is going when it comes to the production of electricity in this country and, you know, the different sources.

I think nuclear is exactly where we should be putting our resources, our innovation, and our time to enhance that. You know, recently leading a trip to South America, you see where the CCP and their influence is everywhere. It is in Africa. You know, I think my first question -- I am just going to start with Mr. Dorman -- how far behind are we when it comes to exporting our technology, getting nuclear technology to other countries? How far behind the CCP are we?

*Mr. Dorman. I am not sure I have a good measure for that. I think they clearly have an agenda to get into all parts of the world and have an influence.

We have recently had the agreements in Poland, and they are planning to build U.S. technology. I think the -- we are seeing from our regulatory counterparts a high degree of interest in U.S. technology and support from the NRC to enable them to be ready to license those.

*Mr. Pfluger. One of the issues -- we recently passed legislation about the NEPA process. Can you tell me how the NRC is going to implement --

*Mr. Dorman. So --

*Mr. Pfluger. -- those changes to reduce the timelines, and to get to a realistic timeline for impact statements or analyses?

*Mr. Dorman. Yes, thank you, Congressman. So we are digesting that legislation, but we have a number of similar initiatives ongoing to reduce the magnitude of the documentation that we produce in our NEPA process to reduce our costs and time in producing the sound decisions consistent with NEPA.

There are a number of other areas that we are focused on. You know, I think that is probably -- if we can get standard reactors, I think that NEPA process is going to be

the area that will be most important for gaining efficiencies. But in terms of your specific legislation, we are still analyzing that.

*Mr. Pfluger. I use the term "moving at the speed of relevancy,'' and we need the Nuclear Regulatory Commission to move at the speed of relevancy in order to not just get to an export -- that was my first question -- but also to domestically produce. And can either of you tell me how much, percentage-wise, how much electricity is produced annually from nuclear power?

*Mr. Dorman. In the U.S. about 20 percent of the electricity is from nuclear.

*Mr. Pfluger. Wow, you guys are the first ones that have had a clue about electricity source generation.

And Dr. Goff, you mentioned something about a carbon-free electrical grid. I am interested to know what that looks like. I mean, what do you think the demand in U.S. electricity is going to be if the Administration gets to just an EV mandate that they are pushing for by about 2032?

I mean, where are we going in the country, and how is nuclear going to play a role in that? What would that 20

percent have to look like in order to service the demand?

*Dr. Goff. I think that 20 percent will have to go up. But I think -- well, we put out a report looking -- the technology liftoff report, commercialization liftoff report from the Department of Energy. In that we are projecting that we need on the order of 200 gigawatts of nuclear capacity between now and 2050, you know, where we have roughly 100 gigawatts, so roughly three times the build-out of what we have. And that is assuming what we have continues operating.

So it is a significant amount of new nuclear, but it is also a significant amount of renewables and, you know, fossil with sequestration. There is a lot of new capacity that needs to be out there as you go to that decarbonization, and nuclear has to play a major role in that.

*Mr. Pfluger. And it has to play a major role. And, as you guys know, renewables are not baseload providers. So when we are talking about baseload capacity -- and thank you for doing the math on it -- I would encourage you to please share this with Department of Energy, because they have not done the math. They have sat right here, and the Secretary

of Energy does not know how much electricity the United States uses annually. That is shocking.

And so my last question, Dr. Goff, can we source all of the uranium and other materials from the United States of America? If we were to be able to permit appropriately, can we source what we need from this country?

*Dr. Goff. Right now we are not providing a lot of the uranium resources, the ore. We are not mining a lot. We do have resources in the country, but we also have resources in Canada and other trusted allies, as well, Canada, Australia. So there is -- we can trust -- we can provide it from trusted allies. And we do have, like I say, reasonable reserves here, as well, so --

*Mr. Pfluger. Thank you. My time is expired. I yield back.

*Mr. Duncan. The gentleman yields back. I will now go to Mr. Armstrong from North Dakota.

*Mr. Armstrong. Thank you, Mr. Chairman.

Mr. Dorman, the NRC has more than 50 years of experience in the licensing and regulatory space. Given the time, process, and subject matter expertise, it would normally be

safe to assume that nuclear review time should shrink, and costs should decrease as agency efficiencies increase. But despite decades of working in this space review cost and time have both increased. What actions is the NRC taking to increase efficiencies during the review process?

*Mr. Dorman. Thank you, Congressman. Several things I mentioned earlier, specifically on subsequent license renewal.

We recognize that the costs have gone up, and we are taking a look at how we can better use risk insights to focus our review. I think, in general, in our licensing reviews we are looking to apply risk insights at the outset of our process to make sure we are focused on the right things. And as I mentioned earlier, we are laying out the cost and time estimates at the outset of a review, and holding ourselves accountable to those estimates as we go through reviews.

So we are trying to be more focused on the most significant issues and effectively -- more effectively managing our processes.

*Mr. Armstrong. Under its current framework, is the NRC capable of managing new workload in the advanced reactor

space?

*Mr. Dorman. Within the framework we are capable of managing the workload we have in the next couple of years. I think if we get through several demonstrations and start to see that workload significantly increase, I think we will need to adjust our resources concomitantly.

I think, as I have mentioned earlier in this hearing, if we get standard designs where we truly are getting nth of a kind of the same thing that we have already reviewed, we should be able to get very substantial efficiencies in the process.

*Mr. Armstrong. So you said the NRC is streamlining the licensing review process, and that includes, like, pre-application interactions, enhancing communication with applicants and licensees, and early engagement with the NRC advisory committee. Does this include environmental reviews?

*Mr. Dorman. It does include the environmental reviews, yes.

*Mr. Armstrong. Okay. And earlier in the hearing you mentioned that there is a substantial amount of information available to the public today that was not available in, say,

like, the 1950s, particularly the public participation in contested hearings. Can you just further explain how the public engagement process works, and why the public should have confidence in the existing structure without an additional office of public participation?

*Mr. Dorman. So the -- if I go back just 30 years, for the public to get information on what the NRC was doing, they had to get into a local library, navigate a microfiche system to find documents. Today those documents are all available on the Internet. They have Google-type search engines to have ready access to all of our record activities.

In all of our licensing processes there are notice and comment. We go out into the community, engage. We engage through their state and local governments. So there are a number of ways that we very intentionally engage people in the process to make sure that they are aware that an action has been proposed in their community, that they have the opportunity to hear from us of how we are going to make sure that it is done safely, and to ask us questions.

*Mr. Armstrong. And I don't mean to trivialize this in any way, because we have to have 100 percent on safety. It

is nuclear, we all understand that, both for the danger, the -- like, minor, minor chances, but extreme problems it raises, but also for public confidence in the energy source. But I make a joke with my staff quite a bit that we have way too many meetings that could have been an email, and I think an uncontested hearing is -- kind of fits into that mold, particularly when you are talking about the advancements in how we communicate the information available.

So I appreciate your guys's attempts in trying to do this, and we have to figure out how to speed it up. We are coming to a crisis point on grid resiliency and reliability, and we need more molecules on the grid, not less. And nuclear is going to be a big part of that, moving forward. So I appreciate your time here today.

And with that, I yield back, Mr. Chairman.

*Mr. Duncan. The gentleman yields back, and I will now go to Mr. Carter from Georgia.

*Mr. Carter. Thank you, Mr. Chairman. I appreciate you giving me an opportunity to waive on this. This is extremely important. As you know, we have two reactors that are under construction now and -- well, one of them we thought was up,

but got delayed a little bit. But still, we are very committed to nuclear power in the State of Georgia, and very proud of that.

Today what we are doing is, of course, looking at bills that will support the U.S. nuclear industry. But it is important that we understand -- and I am sure you would agree that we need to be looking at other nations, as well, and what they are doing, particularly our adversaries, Russia and China.

We understand that together they account for nearly 70 percent of the reactors that are either under construction or being planned right now. In fact, Russia, I think, has the most, with 19, and has a strong, very strong influence in global nuclear power. Russia is building plants in Turkey, Egypt, and I think they are discussing one in Hungary, as well.

And then China, we know what they are doing. They are pursuing Pakistan, Argentina, and talks with Saudi Arabia and other countries, as well. In fact, this is a big part of China's Belt and Road Initiative. And that, you know, that alone should be enough to get our attention, much less the

fact that we need reliable baseload power here in America, and we all understand how important that is.

But that is why I have got a bill that I -- if you can imagine that, that is why I am here -- I have got a bill that I want to talk about. It is the Global Nuclear Energy Assessment and Cooperation Act. And what it does is to take a multi-pronged approach to promoting nuclear energy around the world.

First of all, it will prohibit us here in the United States from importing nuclear fuel assemblies from hostile foreign nations like Russia and China. That will encourage energy independence, and that is important, as well.

Secondly, it will introduce a program, the International Nuclear Reactor Export and Innovation Branch at the NRC, that will focus our international nuclear efforts, including training and sharing our expertise with allies.

Dr. Goff, you just made a comment a few minutes ago about how we have got natural resources here and in Canada and our allies, and that is very important. We need to really foster those relationships, and share with our allies, and work together with them. That is extremely important.

I want to ask you -- I will start with you, Mr. Goff -- what are your concerns with Russia and Chinese dominance in the nuclear energy space, globally?

*Dr. Goff. Well, like I say, Russia's invasion of Ukraine has demonstrated that they are not a reliable energy partner. So, you know, we can't rely on them for fuel, and I don't think other of our allies should be relying on them for new builds, as well. We need to be looking at instead providing us -- our allied resources there.

I would say similar things about China, as well, that we would rather have us or our allies doing those builds and all. So we do need to take this opportunity to focus on how can we replace those builds, and how can we turn around more U.S. builds. You know, we have had some success now in Central Europe, and we need to, you know, continue our efforts to focus on how we can export U.S. technology --

*Mr. Carter. Right.

*Dr. Goff. -- because we want to make sure the U.S. is setting the standards for safety, security, and non-proliferation around the world. And the way we do that is to have the U.S. technology --

*Mr. Carter. And China is an open book. I mean, they have said through their Belt and Road Initiative what their intentions are. So they are just following through on their intentions. It is pretty obvious what they are doing.

Mr. Dorman, let me ask you, do you agree? Do you think it is important for the U.S. to be a leader in setting standards globally and sharing our best practices with our allies?

*Mr. Dorman. Yes, Congressman, and we have a longstanding role at the NRC working with other regulators to ensure they have the capacity to take on these responsibilities, particularly these countries that are looking to embark on nuclear power programs.

*Mr. Carter. Good. Well, I hope you will look at this bill, because it is a bipartisan bill. Scott Peters is the Democrat who -- on this committee -- who is the other cosponsor of it. But it is, I think, a good approach at how we should be looking at nuclear power and positioning ourselves in the United States, along with our allies, to make sure we are a leader in nuclear power.

Again, Mr. Chairman, I want to thank you for giving me

the opportunity to waive on and to get a plug in for what I think is a very, very productive bill. And I will yield back.

*Mr. Duncan. The gentleman yields back, and this concludes the question-and-answer portion of this panel. So I want to thank the witnesses for being here.

I thought it was excellent testimony and answers to the questions, a lot of information was provided. So thank you once again.

And we are going to go ahead and change over and seat the next panel in the essence of time, because votes are going to be called. We are going to try to get through at least the testimony beforehand.

But thank you, Dr. Goff and Mr. Dorman, very much.

[Pause.]

*Mr. Duncan. All right. While you are being seated, I want to go ahead and thank you for being here today and taking time to testify before the subcommittee.

Each witness will have an opportunity to give an opening statement, followed by a round of questions from members.

The second panel consists of Mr. Ted Nordhaus, founder

and executive director of Breakthrough Institute; Ms. Maria Korsnick, president and CEO of Nuclear Energy Institute; Ms. Jackie Toth -- did I pronounce that right, Toth? Toth, okay -- deputy director of the Good Energy Collective; and the honorable Jeffrey Merrifield, chairman of the Advanced Nuclear Working Group at the U.S. Nuclear Industry Council, former NRC commissioner.

So we appreciate you being here. I will now recognize Mr. Nordhaus for five minutes to give an opening statement.

STATEMENT OF TED NORDHAUS, FOUNDER AND EXECUTIVE DIRECTOR, THE BREAKTHROUGH INSTITUTE; MARIA KORSNICK, PRESIDENT AND CEO, NUCLEAR ENERGY INSTITUTE; JACKIE TOTH, DEPUTY DIRECTOR, GOOD ENERGY COLLECTIVE; AND JEFFREY S. MERRIFIELD, CHAIRMAN, ADVANCED NUCLEAR WORKING GROUP, U.S. NUCLEAR INDUSTRY COUNCIL

STATEMENT OF TED NORDHAUS

*Mr. Nordhaus. Thank you for inviting me to testify. My name is Ted Nordhaus. I am the founder and executive director of the Breakthrough Institute. We are an independent global research center based in Berkeley, California that identifies and promotes technological solutions to environmental and human development challenges.

It is a particular honor to me to testify before this committee because my father, Bob Nordhaus, served as general counsel to the Commerce Committee in the early 1970s, and played a major role in drafting much of the foundational Federal energy and environmental law enacted by this committee during that era, most notably, for purposes of this hearing, the Energy Reorganization Act of 1974, which created

the Nuclear Regulatory Commission.

Today the United States faces far different environmental and energy security challenges from the ones that these laws were enacted to address in the early 1970s. In no area is that more clearly the case than America's profoundly outdated approach to the regulation of nuclear energy.

Over the 70-year history of commercial operation, nuclear energy has proven to be a remarkably safe and reliable energy technology. Accidents are exceedingly rare, public exposure to radiation vanishingly small, and public health consequences nonexistent. Yet the NRC continues to regulate nuclear energy as if it represented an exceptional threat to America's public health.

Moreover, despite a clear mandate from Congress, the NRC appears unprepared to efficiently license a new generation of small advanced reactors appropriate for reactor technologies that are typically smaller, simpler, and safer than today's extremely safe light-water reactors.

If there is one critical point that I hope that this committee will take away from my testimony today, it is that

we are not going to develop an innovative, advanced nuclear sector capable of meeting our energy security and climate objectives if we don't fix the Nuclear Regulatory Commission.

There are other critical challenges that the sector faces, but the development of a rational and efficient framework for regulating advanced reactors grounded in up-to-date public health data and science is a precondition for solving any of those further challenges. Critically, I would urge this committee to consider the following steps.

First, clarify the mission of the NRC. In both the Atomic Energy Act and the Energy Reorganization Act of 1974, Congress clearly recognized the importance of nuclear energy to the nation's general welfare and common defense and security. Nonetheless, the NRC has interpreted its mission far more narrowly, limiting its regulatory activities to consideration of potential negative public health impacts of using nuclear energy.

To assure that NRC is prepared to license and regulate advanced reactors consistent with the national interest, Congress should amend section 201 of the Energy Reorganization Act to make clear that the NRC's legal mandate

is consistent with the overall objective of the Act, and amend that mandate to clearly include the goals of reducing the overall public health burden of the electrical system and its carbon intensity.

Second, ground NRC public health standards in epidemiologically observable metrics, and harmonize them with EPA air toxics standards. The NRC has long enforced radiological health standards that are so low as to be entirely theoretical, and are far stricter than those enforced for pollutants associated with similar energy production and industrial activities by the Environmental Protection Agency. The failure to harmonize environmental health standards across highly substitutable energy sources has resulted in significant excess mortality and illness over recent decades.

Third, clarify congressional intent with regard to NEMA implementation. A bipartisan letter sent yesterday from over 60 members of the House and Senate, including a majority of this committee, makes it clear that the intent of Congress in NEMA was to establish an efficient, technologically inclusive, and risk-informed framework for licensing advanced

reactors.

In my written testimony I suggest a number of other further steps that this committee might take. So hopefully, we can get into some of that in the conversation.

But thank you very much for considering my testimony today.

[The prepared statement of Mr. Nordhaus follows:]

**********COMMITTEE INSERT**********

*Mr. Duncan. Mr. Nordhaus, thank you so much.

I will now recognize Ms. Korsnick.

STATEMENT OF MARIA KORSNICK

*Ms. Korsnick. Well, thank you and good afternoon. I am president and CEO of the Nuclear Energy Institute, representing more than 340 organizations in an industry that directly employs nearly 100,000 people throughout the United States.

I really appreciate the opportunity to testify, and I thank Chairman Duncan, Ranking Member DeGette, and the subcommittee, as well as Chair Rodgers and Ranking Member Pallone, for continuing to recognize the critical need for nuclear energy for our nation's energy security and decarbonization goals.

Congress has passed historic legislation that will preserve our existing nuclear generation and accelerate future deployment. I thank Congress for these important actions, and urge you to protect the tax credits and other provisions that will enable continued U.S. leadership in nuclear technology. Federal support is a catalyst for action we are seeing in state capitals, private investment portfolios, and public utility partnerships in places with

retired coal plants and new hydrogen facilities.

Demand for nuclear defines the current moment. Our member utilities expect to add enough new nuclear to double current output by the 2050s. And because nuclear is not only necessary for decarbonizing the electric sector, but the entire economy, the Department of Energy predicts U.S. nuclear capacity has the potential to triple by 2050.

My written testimony outlines several policy proposals and will help us meet this demand, but I want to highlight three crucial points.

First, we must modernize the regulatory process. If we are serious about decarbonizing and meeting our climate and energy security goals, the NRC must get serious about modernizing its processes to be much faster without sacrificing safety. And let me be clear: those two things can coexist. Without NRC modernization, regulatory inefficiency leads to excessive cost and lack of predictability, which will hinder deployment.

Our analysis of the NRC's own data demonstrates that, instead of the agency's reviews becoming faster and more efficient, they are taking longer and requiring more

resources. For example, the staff resources applied to second license renewal review for plants that have safely operated for more than 5 decades -- so you would assume it would be faster -- are now 50 percent greater than the first license renewal.

DoE has projected that we will need to begin the ramp-up of advanced nuclear deployments in the next decade, which means the NRC will be asked to process a significant number of permit applications. So now is the time to take meaningful steps to ensure that the regulatory approvals do not slow progress.

Second, we need a competitive domestic nuclear fuel supply. Russia provides roughly half of the world's commercial enrichment capacity, and is the only commercial supplier of the high-assay, low-enriched uranium needed by most advanced reactor designs. The U.S. commercial nuclear industry is committed to eliminating the import of uranium and related conversion and enrichment services from Russia. However, Federal support is essential to establishing a secure supply in the U.S., so that we can move away from Russia fuel imports just as soon as possible. Accelerating

investments aimed at competitive enrichment and conversion in the U.S. will support both near-term and long-term national security interests.

And finally, we need to deploy new technology at home now to support U.S. technology exports abroad. Governments around the world recognize that by making nuclear the centerpiece of their energy systems, they can decarbonize their electric grid and strengthen their energy independence because energy security is national security. Countries in Asia, South America, Central Europe, and Africa are committing to new nuclear, large and small. Although some countries have already made commitments to import U.S. technologies, it is a very competitive marketplace.

If we cannot be competitive in the global market, countries can turn to Russia and Chinese state-owned enterprises and they, not us, will build 100-year relationships throughout the globe. It is already happening today. And despite our superior technology, their nuclear programs are positioning themselves as very attractive options.

The U.S. must assign strategic value to Nuclear Energy

Exports Act to open markets to our industry and back U.S. companies with the tools needed to compete.

The industry I represent looks forward to working with you to ensure our nation can take full advantage of all that nuclear energy has to offer. Thank you.

[The prepared statement of Ms. Korsnick follows:]

**********COMMITTEE INSERT**********

*Mr. Duncan. Thank you, Ms. Korsnick.

Ms. Toth is recognized for five minutes.

STATEMENT OF JACKIE TOTH

*Ms. Toth. Chairman Duncan, Ranking Member DeGette, honorable members of the subcommittee. My name is Jackie Toth, deputy director of Good Energy Collective. Thank you for the opportunity to testify today on behalf of my organization, a progressive nuclear energy policy non-profit that develops community-centered, social-science-informed policies to enable the adoption of advanced nuclear energy and promote equitable energy outcomes in a climate-constrained world.

As an energy journalist covering Capitol Hill from 2016 to 2020, I observed regular bipartisan collaboration on laws that have jump-started domestic nuclear energy innovation and reinvigorated U.S. global nuclear leadership.

I want to thank congressional Democrats, including ones on this subcommittee, for the key role you continue to play in supporting our nation's largest source of carbon-free electricity.

Among these bipartisan statutes was the Nuclear Energy Innovation and Modernization Act, or NEMA, which the House

passed under suspension of the rules in 2018 on an overwhelmingly favorable vote of 361 to 10. NEMA directed the U.S. Nuclear Regulatory Commission to develop the licensing frameworks and evaluation strategies to enable predictable, efficient, and timely approvals for the use of advanced reactors.

These regulatory activities reflect a dual imperative to provide communities with reliable, emission-free power, and the urgency to address climate change. It is in these contexts, the need to uplift communities and to meet the climate challenge, that Good Energy Collective is interested in ensuring that Congress build upon NEMA and equip the NRC with the necessary direction and resources to facilitate the successful adoption of advanced nuclear, while preserving the public's ability to learn about and participate in the NRC's work.

Several bill texts before the subcommittee today advanced that goal. H.R. 4530, the NRC Office of Public Engagement and Participation Act introduced by Representative Levin, would ensure that, as the NRC's workload grows, the agency can undertake more proactive and effective engagements

with the public to share information about NRC activities and provide technical assistance.

Another of our independent energy regulators, the Federal Energy Regulatory Commission, established in 2021 its own office of public participation, which is now stakeholders' one-stop-shop for receiving support in navigating matters before FERC. Establishing a similar office at the NRC would not only streamline engagement opportunities and address public hesitations about the use of nuclear, but also support licensing efficiency by bringing communities into the siting and licensing process early on, and supplementing industry's own engagement efforts. Developing these capacities aligns with reactor developers' growing recognition that to ensure the timely success of their projects they will need to increase early-stage public engagement.

We can build new energy infrastructure both quickly and justly. In fact, we must.

The NRC demonstrably struggles with employee satisfaction and retention. H.R. 4528, the Strengthening the NRC Workforce Act from Representative DeGette, would begin to

address NRC staff hiring and attrition issues by ensuring the agency can attract and reward skilled employees.

Good Energy Collective further approves of policies supporting our international allies with nuclear energy and fuels, and with the development of strong safety regimes. H.R. 995, the Global Nuclear Energy Assessment and Cooperation Act from Representatives Carter and Peters, and the discussion draft of the Strengthening American Nuclear Competitiveness Act include useful measures to bolster U.S. climate leadership through nuclear energy exports.

I maintain reservations regarding some of the other draft legislation under discussion today. Any proposal to alter the mission of the NRC such as in the NRC Mission Alignment Act must be weighed against the risk of frightening the public that its trusted nuclear regulator is operating with a new purpose at the very moment that the Commission undertakes an historic scaling of certification reviews and licensing activities.

The cultural changes at the Commission that may be necessary to meet this moment and increase the timeliness and efficiency of its activities will depend more on the

resonance and strength of Commission leadership and the availability of resources for staff than on a change in mission. Likewise, proposals before the subcommittee to reduce mandatory hearing requirements and public notice regardless of the novelty of reactor design, or to streamline environmental reviews without providing additional resources for public engagement and outreach may weaken the NRC's responsiveness to the public that it serves, first and foremost.

Thank you. I look forward to your questions.

[The prepared statement of Ms. Toth follows:]

**********COMMITTEE INSERT**********

*Mr. Johnson. [Presiding] The gentlelady yields back.

The chair now goes to Honorable Merrifield for your five minutes.

STATEMENT OF JEFFREY S. MERRIFIELD

*Mr. Merrifield. Chair, Ranking Member DeGette, and members of the subcommittee, it is an honor to testify before you today on the role that nuclear power can play in securing the clean, reliable, and resilient energy that we need to power our nation's electric grid and decarbonize critical industrial capabilities.

I am here today in my role as the chairman of the Advanced Nuclear Working Group of the U.S. Nuclear Industry Council, although my full-time occupation is as a partner in the nuclear energy practice at Pillsbury Law Firm. I served as an NRC commissioner from 1998 to 2000, and in the time I spent at the agency it remains one of the most satisfying periods of my career. To this day I embrace the motto of the agency, "Protecting people and the environment,'' a tagline I helped craft.

I believe the agency is staffed and led by talented, bright, well-meaning, and dedicated civil servants, and I firmly believe in the mission of the agency and the value of its independence. With that preface, I believe the agency

has lost sight of its role. I fervently hope that the NRC can become a more efficient, effective, risk-informed, timely, and technically adept regulator.

Title 1, chapter 1, section 1 of the Atomic Energy Act of 1954 outlines the vision of Congress that it is the policy of the United States that atomic energy shall be deployed to "promote world peace, improve the general welfare, increase the standard of living, and strengthen free competition in private enterprise.'' While those words were passed into law in 1954, they ring true and remain the law of the land.

In a time when global climate change is real and present -- is a real and present threat to our common defense and security, and given that nuclear energy is the only major low-carbon proven energy system that can reliably dispatch 24/7 energy, enabling nuclear energy safe usage is an obligation of the NRC under the Atomic Energy Act and the Energy Reorganization Act.

In my opinion, the NRC of 2023 fails to fully recognize the positive encouragement of nuclear energy that the Atomic Energy Act put into place that frames its licensing and oversight activities for the safe use of nuclear energy in

our country. Instead, it is overly conservative, and does not consistently apply common-sense principles in regulating the technologies it oversees. The current impasse on creating a new regulatory framework for advanced reactors under part 53 is the most recent example of this gap.

There are a variety of reasons that underline the behavior of the agency which are outlined in a speech I gave at the American Nuclear Society annual meeting on June 13 of this year, and I would ask these remarks be included in the record of this hearing.

I have heard from many licensees that the NRC staff states that it is limited in what it can say to applicants seeking clarification of agency rules and guidance, as the NRC cannot "promote'' nuclear energy or act as a "consultant,'' due to its independent safety mission. I believe this is an incorrect reading of the agency's legal mission, and I believe the agency can and should do more to enable the deployment of advanced nuclear technologies, while maintaining its ability to independently assess the safety of the same.

There is absolutely nothing wrong with the agency

providing clarifications and assistance to licensees who are attempting to understand and meet the complex, difficult, and sometimes inscrutable guidance and rules of the NRC. Responding to questions and engaging with licensed entities and the public with direct and fulsome responses is the responsibility of the agency, and the NRC should not hide behind its role as an independent safety regulator.

I believe Congress needs to address the ability of the NRC to have the resources to attract capable and experienced staff, and I believe the NRC needs to be provided flexibility such has been provided to agencies like the Securities and Exchange Commission and FDIC to pay above the standard government pay structure.

Recently, Pillsbury partnered with the Nuclear Innovation Alliance to assess the current role of the Advisory Committee on Reactor Safeguards, and issued a report with a series of recommendations to modernize the role of ACRS. I respectfully request that a copy of our report and recommendations also be included in the record of today's hearing.

In sum, I believe the Act should be updated to focus the

role of ACRS on reviewing unique and difficult nuclear technologies, and we generally support the ACRS language included in the Nuclear Advisory Committee Reform Act.

U.S. NIC has reviewed the 15 bills that make up this legislative hearing. As a general matter, U.S. NIC is supportive of most of the legislation in its current form, and we have made comments about a handful of the bills in our written remarks. I am prepared to answer any questions you may have about my remarks, the bills under consideration, other matters associated with the NRC.

The advanced nuclear technologies that are under deployment are putting our country in a position to address its future energy demands, while also allowing the U.S. to regain its leading position in nuclear exports. I am thankful for the hard work undertaken by the members and staff of this committee in support of this vital technology.

Thank you for allowing me to testify on behalf of the U.S. Nuclear Industry Council and its 80 members on this important subject.

[The prepared statement of Mr. Merrifield follows:]

3770 **********COMMITTEE INSERT**********

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*Mr. Duncan. [Presiding] I ask unanimous consent to allow the documents Mr. Merrifield referenced be entered into the record.

Without objection, so ordered.

[The information follows:]

**********COMMITTEE INSERT**********

*Mr. Duncan. So now we are going to get the question-and-answer, and we will try to get through at least a few here. Let me raise the same question I raised on the first panel. I recognize myself for five minutes.

As many of us have made clear, a goal of our nuclear policy work is to align and restore agency alignment with the policy goals of the Atomic Energy Act. These policies helped the United States for several decades lead the world in nuclear technology to spread peaceful benefits of nuclear.

So to the panel, beginning with Mr. Nordhaus, would you each speak briefly to the value of making sure NRC's mission is more in line with the mission goals of the Atomic Energy Act?

Mr. Nordhaus.

*Mr. Nordhaus. I am happy to. I think both the Atomic Energy Act and the goals of the Energy Reorganization Act of 1974, which created the NRC, actually very clearly establish that the NRC has a responsibility to account for the benefits that nuclear energy brings, as well as assure public safety from radiological exposure.

And as I kind of make fairly clear in our -- in my

written testimony, the focus on limiting the NRC's public safety focus purely to operations at the plant level actually is propagating public health risk; it is not reducing it. And that is because we don't consistently regulate these risks across different exposures.

So EPA's regulations for similar facilities that combust fossil fuels are an order of magnitude less strict than the NRC's, and that results in actually increased public health risk. It results in increased mortality associated with the operations of the electrical system.

So for that reason we would argue that, you know, not only do we need to get back to the original goals, but that we actually need to add -- further, that the NRC needs to consider the overall consequences in terms of public health and also in terms of carbon intensity of the electrical grid when it is making licensing and regulatory determinations.

*Mr. Duncan. That is good. Ms. Korsnick?

*Ms. Korsnick. Yes, thank you. Yes, I would just maybe state directly what it does say in the Atomic Energy Act of 1954, which states not only does the NRC -- or should this industry be guided and provided adequate protection from

public health and safety, but also to achieve the policy goal of making sure that nuclear energy make the maximum contribution to the general welfare. And so we believe that in the actual reading of the current Act, the NRC needs to embrace that mission.

*Mr. Duncan. Thank you.

Ms. Toth.

*Ms. Toth. Thank you, Chairman. Yes, I want to be clear I don't dispute that the Atomic Energy Act or the Energy Reorganization Act of 1974 don't leave room for the consideration of the public welfare as part of the NRC's activities. But you know, ultimately, the agency mission is as much about optics as it is about setting direction. And setting direction is something that agency leadership can do just as easily.

I would caution the committee that, you know, any effort to alter the mission be weighed against the potential of increasing or welcoming litigation risk by the public. For example, if consideration of the general welfare is added to the mission, one could foresee public concerns and litigation over whether or not they think the Commission had met that

benchmark, whatever that benchmark may be.

And likewise, we heard from the Executive Director Dorman on the previous panel that the NRC is currently performing important functions in supporting our international partners in other countries, and standing up strong safety regimes for their own regulatory infrastructure, and certainly would not want to raise any concerns among our international allies that the gold standard of U.S. nuclear regulatory -- regulation and safety was being changed in any way at this important juncture.

*Mr. Duncan. Thank you, Ms. Toth.

Mr. Merrifield.

*Mr. Merrifield. Yes, the foundation of the Atomic Energy Act remains the same as it was in 1954. It is a determination that we want nuclear power to be deployed in the United States for beneficial purposes.

The agency, the NRC, is to evaluate those technologies. As long as they can determine that they are safe, they have to license them. That is the -- that is built into the legislation. And so the NRC utilizes its authority to determine if reasonable assurance of adequate protection has

been demonstrated by the applicant. And if so, it has to license it. That hasn't changed. That was the way it was when I was a commissioner back in 1999. It is not different today.

I just think the agency needs to be reminded of that to a greater degree, because I think some of the impediments it has put into place, including what I think is an inappropriate framework under part 53, go against that.

*Mr. Duncan. Thank you all for that. I have some additional questions I will submit for the record.

[The information follows:]

**********COMMITTEE INSERT**********

*Mr. Duncan. I now recognize the ranking member, Ms. DeGette, for five minutes.

*Ms. DeGette. Thank you, Mr. Chairman.

So as all of you know, I have got one of the bills in this hearing today about workforce. And I talked to our government witnesses about the workforce issues. They are not just limited to the safety concerns, but also to the NRC's ability to process applications. So I am curious to know what our panelists think about this.

I will start with you, Ms. Toth. In your view, how will the NRC's workforce challenges impact the industry?

*Ms. Toth. Sure. Thank you for the question. Absolutely.

As we heard from the previous panel, there is 100 percent a shortage of -- right now of nuclear engineers across all of the different hiring functions for these roles, from the development community, our national labs, the Energy Department, and the NRC. So certainly, the Strengthening the NRC Workforce Act could go a really long way toward ensuring that the NRC has the capacity to hire top talent, which it is certainly going to need as part of its workforce continues to

retire, and as competition from other nuclear sectors continues to grow.

*Ms. DeGette. Thank you. I guess I would like to ask the rest of the panel, too.

Outside of the regulatory workforce, what steps do you think we need to do to bolster the nuclear workforce that will help us meet anticipated growth in nuclear, and ensure the highest levels of safety?

Mr. Nordhaus, do you have any thoughts on that?

*Mr. Nordhaus. I think that the -- you know, I think there is clearly -- we are seeing these problems across the economy, and not just nuclear, from sort of qualified STEM talent to, you know, electricians who can sort of build the infrastructure, install the infrastructure that we are talking about, particularly in this sort of post-IRA with significant incentives to sort of scale up these technologies. And I think nuclear is sort of, basically --

*Ms. DeGette. So do you think significant incentives is an answer?

*Mr. Nordhaus. Yes, correct.

*Ms. DeGette. Ms. Korsnick?

*Ms. Korsnick. Yes, thank you.

Well, for one, I think we can redeploy some of the talent that we have on the fossil fuel side of the house. We did an analysis -- or an analysis was done on using workforce that are currently at coal plants, and it demonstrated that 75 percent of the folks that work in coal facilities could work at nuclear facilities. And so I think there is a wonderful, synergistic effect as we are closing down some of the fossil fuel plants to redeploy that talent and save a lot of towns that depend on that talent.

Also, we can create partnerships with unions. We have a wonderful relationship with the unions who have fantastic apprenticeship programs. So we don't just need nuclear engineers, we need workers across the board, and I think partnering with the unions is a great opportunity for us, as well.

And it is not just four-year degrees. You know, we need two-year degrees. We can take people right out of high school. So I just want people to appreciate the breadth of attention that we can be using for the whole energy sector.

*Ms. DeGette. That is exactly right.

Chairman Merrifield?

*Mr. Merrifield. Yes, I think the point of your legislation, to provide tools to the NRC, is one that we appreciate and agree with the general intent.

As I mentioned in my testimony, I actually think perhaps having it focused more along the lines of the Securities and Exchange Commission, rather than the FERC legislation, would be -- would probably be my recommendation.

A couple other things in the legislation, it vests the authority solely in the chairman of the NRC to make those determinations. And as a former commissioner, I would say policy decisions of that size and scope really need to be decisions of the Commission as a whole. So that would be an area we would certainly want to talk to the committee about.

*Ms. DeGette. Great.

*Mr. Merrifield. There is a duration of time on which the authority applies. Given the nature of the competition that the NRC faces today for workforce, I think addressing this in a longer term than perhaps five year -- the five-year limitation included in the draft bill would be appropriate.

*Ms. DeGette. Great.

*Mr. Merrifield. But we certainly --

*Ms. DeGette. If you don't mind, I have one more question for Ms. Toth.

*Mr. Merrifield. Absolutely.

*Ms. DeGette. And I have 40 seconds. I wanted to ask you, Ms. Toth, if you could elaborate on the concerns you mentioned with respect to the Efficient Nuclear Licensing Hearings Act and, in particular, whether you think these hearings are a critical tool for ensuring public health and safety.

*Ms. Toth. Certainly. Thank you, Ranking Member. I think it is super important that, as we move forward here with the licensing of new reactor designs, we continue to maintain that level of Commission oversight and the mandatory hearings.

*Ms. DeGette. Thank you.

Thank you very much, Mr. Chairman. I yield back.

*Mr. Duncan. The gentlelady yields back. I will now go to Dr. Burgess for five minutes.

*Mr. Burgess. I thank the chair.

Ms. Korsnick, I really liked your answer to

Representative DeGette's question about helping people who are in the -- in a two-year or four-year degree, and even providing a paid internship perhaps to someone in high school. We really do need to move away from a system where kids amass so much student debt that they are never able to pay it off, and yet at the same time you need workforce. And if there were a way to incorporate a learn-on-the-job trajectory, it just seems like that could be so powerful.

And right now, again, there is no one who comes in here and talks to us in any committee that doesn't identify workforce as a central thesis that they are having to deal with consistently. But if there were a way to make it easier for the workers of tomorrow to begin to integrate into the program -- and again, even during the high school years -- I don't think that is too early.

And to be able to offset the cost of their higher education with loans and grants from industry itself, not from the government -- we do enough. But really, it is on you all to be able to bring that next wave of the workforce into being.

*Ms. Korsnick. Yes, I would just agree with you, and to

say that, you know, the industry is eager. And I can just speak from my past, as a chief nuclear officer and as a site vice president, we created partnerships with local community colleges and, you know, worked on students. Again, maybe they just wanted a two-year degree, and then they could work as chemistry technicians or other technicians in the plant.

Sure, we will take people with full college degrees. They can also be put to work. But we -- as we look ahead, there is a wide spectrum. You know, you need electricians and plumbers and pipefitters. And again, I am just going to give a plug to our union craft. You know, they have a wonderful apprenticeship program, and we are also working with them to figure out how best to lay the groundwork for what we hope to be a very thriving industry over the next 10 to 20 years.

*Mr. Burgess. Well, I think that is wonderful. You don't always need a Federal program to provide for workforce when it can be developed internally.

Let me just ask you a question about, in the NRC, the operating plant budget that is derived by fees. It is up a significant amount, 64 percent since fiscal year 2018. There

does seem to be a growing disparity between fee-for-service collections and overhead.

The most recent NRC fee rule indicates that operating plants will each be required to pay approximately $5.5 million in annual fees, which is a 22 percent increase since fiscal year 2017. But there are less operating plants. Do we need to be concerned about this trend?

*Ms. Korsnick. Yes, right? So I think, across the board, we are looking for a level of efficiency for the regulator. You have heard it from several different ways. The example I gave in my opening remarks was about subsequent license renewal and how it is taking even longer in the subsequent license renewal, even though they have done it more, and they should be getting more efficient in the same way that -- what you are suggesting, we have now fewer plants, plants have shut down, and yet the cost burden is increasing.

And in addition, they carry over from fiscal year to fiscal year. And even with that carryover, still the burden on the operating plants is increasing. And so I do think that we need to take a hard look at that, and just provide

pressure for an internal drive for efficiency. There is no sense in hiring more people to an agency that is already operating inefficiently. You will just create more people working inefficiently. So the drive needs to be to get efficient.

*Mr. Merrifield. Congressman, I completely agree with Maria. When I was a commissioner, we really had a focus on effectiveness, efficiency, and alignment with the staff to achieve that goal. I think Congress needs to hold the Commission's feet to the fire to get there.

*Mr. Burgess. Yes, it does seem like the operating reactors are the cash source for the NRC, when they should be licensing new projects to continue building, rather than just bleeding what is already available.

Thank you, Mr. Chairman. I will yield back. I know there are votes on.

*Mr. Duncan. The gentleman yields back. I am going to try one more. I will go to Bill Johnson for five minutes.

*Mr. Johnson. Well, thank you, Mr. Chairman. I want to continue -- and thanks to our second panel for being with us this afternoon -- I want to build off my questioning that I

began in the first panel.

My legislation, the Strengthening American Nuclear Competitiveness Act, directs the NRC to submit a report on licensing requirements for non-electric applications and advanced manufacturing. Mr. Merrifield, can you please explain why preparing for licensing of advanced nuclear for non-electric applications is a good use of the agency's time?

*Mr. Merrifield. There is going to be a significant wave of non-utilities who are going to seek advanced reactor technologies to decarbonize difficult-to-deal issues such as steelmaking, aluminum, chemical manufacturing. We have seen this with announcements with companies like Nucor and Dow seeking to evaluate advanced reactor technologies. So this is an area I think the agency is going to have to spend some time. I think it can do it effectively, and I think that these types of technologies can be appropriately deployed in support of those efforts.

I would want to make one note about your bill, section 3 -- I am sorry, section 4, regarding removing some of the prohibitions on the Atomic Energy Act regarding foreign ownership. I testified in front of this committee as a

commissioner back in the 2000s in support of that type of change, and certainly would want to reinforce that in what you are trying to do.

*Mr. Johnson. Okay. Well, thank you. And next, my legislation seeks to strengthen U.S. global competitiveness by reviewing our current export capabilities, improving export processes, and encouraging coordination with our allies to increase deployment of new commercial nuclear energy technologies.

So again, Mr. Merrifield and Ms. Korsnick, I would like to hear from both of you on this. Ms. Korsnick, I would let you go first.

How important is it to the global nuclear market that the United States works with its allies?

And also, with countries like China and Russia rushing to deploy civilian nuclear around the globe, giving them a century-long foothold in a given area, why is it important for the U.S. to be able to export its own civilian commercial nuclear technology abroad?

Ms. Korsnick, you go first.

*Ms. Korsnick. Well, it is critical to our national

security, I would argue, that we absolutely want to be supporting countries around the globe and helping and support them with their energy supply.

I think we have all watched Russia cut off gas to Europe, and watched how they manage when they are in control of your energy supply. And I think we should take strong note of that. And it wouldn't be any different if they had built a nuclear plant in some of these countries --

*Mr. Johnson. Right.

*Ms. Korsnick. -- and they would be also able to turn that off. And so I think doing business with the United States, with our allies, is precious. And I think it is very important that we take that leadership role.

I would point out that a Russian reactor just started up in Egypt. I believe one just started up in Pakistan. So when we say that there is this potential, it is not a potential, it is happening.

*Mr. Johnson. Yes, it --

*Ms. Korsnick. And that is why we need the United States to really be very relevant and support our allies.

*Mr. Johnson. I agree. And I think most people don't

understand that when a country like Russia or China gets their foot in the door in another country providing nuclear capability, they are in there for upwards of 100 years. I mean, they got to build a plant, they got to operate it, they got to maintain it, they got to update it, and they are there to stay.

Mr. Merrifield, do you want to comment --

*Mr. Merrifield. Yes, Congressman, you put your finger on it. These are 100-year relationships --

*Mr. Johnson. Yes.

*Mr. Merrifield. -- build, and so it is vital that we be there and have an alternative.

I think the advanced reactor technologies that we are talking about today provide us an opportunity to retake that lead. We have some game-changing technologies that we are going to be deploying, and those are going to really allow us to take that flag abroad.

*Mr. Johnson. Okay.

*Mr. Merrifield. Having said that, I think we also need to talk about our Canadian and UK friends who can be collaborative. This is an international arena. None of the

plants that we build today can be built with entirely U.S. parts. But I think we need to be focused on our allies, and working to try to win more market share.

*Mr. Johnson. And let me move quickly. I have got one more question. I want to address my legislation's extension of Price-Anderson out to 2065.

Again, Ms. Korsnick, I will start with you. Can you explain why Price-Anderson has been important to America's nuclear industry, and why it would be important to extend it 40 more years, especially with advanced reactors and small modular reactors on the way?

*Ms. Korsnick. Absolutely. It is very critical. I would just say, in straightforward terms, it provides a framework within the -- insurance companies can work to allow us to appropriately insure.

The second place is it then requires the rest of the nuclear energy industry to contribute. So it creates an indemnification framework that allows us to manage risk. And without one, you wouldn't have the industry that you have today. And we just need to continue this framework -- you mentioned -- for a length of time. I would love a lifetime

extension. So yes, it is just -- it is absolutely critical.

*Mr. Johnson. It is going to be almost as hard as getting insurance on an electric vehicle, Mr. Chairman.

*Mr. Duncan. Yes, I am seeing that.

*Mr. Johnson. Chairman --

*Mr. Duncan. The gentleman's time is expired, and we are going to have to go vote. So we are going to stand in recess, pending the call of the chair. I ask witnesses just to hang out, use the restroom, whatever you need to do, and we will be back as soon as we can.

[Recess.]

*Mr. Duncan. I am going to call the meeting back to order.

There is a lot of hearings going on today, there is a lot of work going on, so we are back in order, and I will now recognize -- as she gets her computer going -- Mrs. Lesko for five minutes.

We will start the clock when you are ready.

*Mrs. Lesko. Almost there.

*Mr. Duncan. Okay, the gentlelady from Arizona is recognized for five minutes.

*Mrs. Lesko. Thank you very much, Mr. Chairman, and thank you for being here all these hours and testifying. I appreciate it.

Ms. Korsnick, can you explain the use of on-site inspectors versus inspectors that come from off-site to nuclear plants?

And do you believe the benefit from these extra inspectors is worth it?

*Ms. Korsnick. Absolutely. So the on-site inspectors are called resident inspectors, and these are inspectors that are always at the plant, 7/24, if you will, whenever they want to be there or not be there. They have full access to the plant.

And then the extra inspectors that you talk about, there are certain inspections that they will plan and schedule, and they will bring other resources to the plant to conduct those. PI&R inspection, problem identification and resolution, is an example of one where you know it is going to be a pretty extensive amount of time, and they will send extra people to your plant.

So I do think that there is value, because they have

additional background and additional expertise. I think that is helpful. But I would like to add -- perhaps where you are going with this question is -- that during COVID they were also able to conduct a lot of these inspections with a lot fewer inspectors on site. So they used technology. They used other ways to get the information without having to send a bunch of inspectors to the site.

And so what we would like is some of the improvements and some of the synergies that they were able to put in place when they were under more restrictive conditions. They still conducted their inspections very effectively, and I think that can be leveraged.

*Mrs. Lesko. And so then, do you think that my piece of legislation that is being considered or will be voted on soon out of this committee would be beneficial?

Because part of my legislation basically asks the NRC to look at what they did during COVID, and see if some of those practices that were more efficient could be used permanently.

*Ms. Korsnick. Absolutely. Spot on.

*Mrs. Lesko. Thank you. Ms. Korsnick, I would appreciate your perspectives on other areas we should focus

on to improve the effectiveness of NRC's oversight of the operating reactor fleet.

*Ms. Korsnick. Thank you. Yes, I do think there is opportunities for improved oversight, and I know we sent in a letter with some of our suggestions, and I would be happy to work with you to provide some additional examples for improving oversight of the regulator.

But at the heart of it, it goes to, in general, just how can we be more efficient with the oversight of the fleet. And one of the things that we are very passionate about is what we call risk informing.

In other words, whatever it is that you are working on, understand what the ultimate risk to safety is. And if there is very, very low risk, then spend less time on it, and so that it helps you decide where to put your time, energy, and effort. And we think that there is improvements that could be made there on things of very low safety consequence and significance.

*Mrs. Lesko. I am going to another committee hearing upstairs, Oversight Subcommittee. But it is dealing with energy infrastructure, and cybersecurity, and physical

threats.

But one of the things that has come up is, actually, EMPs, electromagnetic pulses. And do the nuclear plants ever talk about that risk, and if they are prepared, protected against any EMP attacks?

*Ms. Korsnick. Yes. And actually, we worked with EPRI, the Electric Power Research Institute, to do testing on EMPs and what parts would be impacted by that, like large transformers, for example. So I do know that quite a bit of work was done relative to EMP to better understand the risk of it.

*Mrs. Lesko. And do you think that there is any way for the plants to protect themselves against EMPs, or is it just like everything just shut down?

*Ms. Korsnick. No, there are -- yes, there are some things, some hardware modifications that can be put in place to make some of the equipment that you are counting on to be more resilient in case of an EMP threat.

*Mrs. Lesko. All right. And are the plants doing those things currently?

*Ms. Korsnick. Yes. I don't know the complete status

of the whole industry. It comes a little bit more from the transmission and distribution side in terms of the grid being resilient, if you will. I think the plants were evaluated to be relatively resilient, but the grid, I believe, was the weak point. And I know that they have looked at specific modifications that could be done to protect the grid. I don't know the status in terms of how far along they are, though.

*Mrs. Lesko. Thank you, and I yield back.

*Mr. Latta. [Presiding] The gentlelady's time has expired and yields back. The chair now recognizes the gentleman from New York for five minutes.

*Mr. Tonko. Thank you, Mr. Chair.

In the past, the Environment Subcommittee has done great bipartisan work to support remediation and redevelopment of our nation's brownfields. EPA's brownfields program has been tremendously successful in reducing pollution, creating jobs, and getting vacant properties back on local governments' tax rolls. So I was very interested to see the Nuclear for Brownfields Site Preparation Act.

Former coal plants and other brownfield sites often have

great characteristics that can be assets in their redevelopment. They may be near existing transmission infrastructure, have access to water and rail infrastructure, and have pre-existing security infrastructure. So the notion of reusing these sites for advanced nuclear or other clean energy projects could provide a great opportunity for local communities to bring back high-quality jobs to their given region.

So Ms. Toth, how can new nuclear projects create jobs and support economic revitalization in former energy communities?

*Ms. Toth. Thank you, Congressman, for the question, and we are very supportive of the Nuclear for Brownfield Site Preparation Act.

Good Energy Collective takes a particular interest in ensuring that we advance enabling policies so that nuclear energy can support communities facing the retirements of their coal generators in the next, you know, 10 years as part of a just energy transition.

Like you mentioned, there are a lot of opportunities to reuse existing infrastructure on site transmission, road and

rail access, water, the heat sink. But more importantly, and what Good Energy Collective has started to analyze, are what are the community-level benefits of these transitions? And there are many to be able to support these communities with good-paying jobs that they are losing when these coal plants close, with the tax revenues for the local community.

So we see this legislation up on the docket today as important and enabling policy on the regulatory side when Congress last year passed the Vision for the Future Act, enabling DoE to support technical assistance for R&D for coal -- the revitalization of coal plant infrastructure with nuclear energy.

*Mr. Tonko. Thank you.

And Ms. Korsnick, what are your thoughts? What are the opportunities to reuse these former power plant sites for new nuclear projects?

*Ms. Korsnick. I think there is a wonderful opportunity. A study was done about the plants that -- coal plant workers, and how they could be transitioned to work at a nuclear plant, and I think the study suggested that 75 percent of the jobs at coal plants could be re-purposed to

nuclear plants. Personally, I think it is probably even larger than that, but that just gives you an early idea of just how much synergy there is.

You know, from being a site vice president and running a previous nuclear plant, I would tell you that we would bring the coal plant and fossil fuel folks down to work our refueling outages. There is a natural synergy. We might boil water differently in nuclear, but after that you need mechanics, and electricians, and I&C techs, and, you know, the same skill set that you are working and using at that coal facility. So I am incredibly optimistic of the synergy.

And I think it is beautiful, as she mentioned, you know, some of these plants -- or the towns are going to be devastated by the closing of a fossil fuel plant, and there is no need for it. We can absolutely re-purpose all of those jobs, and keep that community alive and thriving.

*Mr. Tonko. Thank you. I am supportive of trying to redevelop formerly-used fossil fuel sites for productive, cleaner uses, and that seems to be the intent of this draft.

Mr. Chair, I would like to raise an issue that I hope the committee staff can further investigate before this

proposal moves to a markup. The draft uses the CERCLA definition of brownfield site, which explicitly excludes numerous types of facilities, including facilities that had permits under RCRA, the Clean Water Act, and the Safe Drinking Water Act. So I am worried that many former coal plants may not meet this definition of a brownfield site, and the Commission may not include them in their evaluation.

CERCLA included these statutory exclusions for good reason, so that polluters could not gain access to limited brownfield funds in order to carry out remediation otherwise required by their permits. That is still a good reason to maintain the exclusion within the EPA brownfields program. I am not sure if it should be the litmus test for a brownfield site under this proposal, so I hope the majority and minority staffs can receive technical assistance from the Commission and EPA to ensure that this language does not accidentally exclude some of the intended beneficiaries by taking too narrow of a definition of brownfield site.

And with that I thank you, Mr. Chair, and yield back.

*Mr. Duncan. [Presiding] The gentleman yields back. I now go to Mr. Latta from Ohio for five minutes.

*Mr. Latta. Well, thank you, Mr. Chairman, and thank you for -- our witnesses for appearing today. We appreciate your knowledge, and we also appreciate your feedback on the legislation before us today.

Commissioner Merrifield, many new reactor technologies require access to HALEU to fuel their operations. Russia's invasion of the Ukraine has made the only commercial source of that fuel inaccessible, and has also negatively impacted the LEU market, which is used to fuel our existing fleet.

My bill, the Nuclear Fuel Security Act, aims to reduce our reliance on Russia. And as we heard in the previous testimony of our first panel today, about 24 percent coming from Russia and 2 of the -- Kazakhstan and Uzbekistan, adding up to all over 50 percent, then, that is not good. So we need to increase the United States' global leadership.

Could you expand on the current state of our nuclear fuel security?

*Mr. Merrifield. Yes. We, obviously, have significant dependance on the import of Russian material that makes up at least 20, if not more, percent of the fuel used in the U.S. We do not currently have the capability to produce high-

assay, low-enriched uranium, which we are working toward. DoE has a series of programs -- there was an announcement yesterday -- with Centrus and TerraPower that they are engaging on a program to do some of that.

So I think Congress and the legislation you have are working to try to improve this, both in the supply of uranium, in the supply of low-enriched uranium, and ultimately in the supply of HALEU. So I think these efforts in your legislation are beneficial, and I think U.S. NIC is supportive of them.

One thing in your legislation I would also want to point out, which I think is positive, you do establish in the -- it would establish in the U.S. Treasury a revolving loan fund for the revenues received by the Secretary from the sale and transfer of feed material. We think that is a very logical step, and one that certainly we would support.

*Mr. Latta. You know, what role can NRC play in quickly establishing a robust domestic nuclear fuel supply chain?

*Mr. Merrifield. The NRC does need to take a look at the methods it uses to review and approve new fuel facilities, and I think that is an area that could get some

additional attention.

There will be a series of centrifuge facilities that will need to be built in order to make up for the loss of fuel capabilities from outside of the United States. That is an area I think additional attention by Congress would be very beneficial.

One thing I would also note, I think we need to think about this not just in terms of the United States. We also do need to be thinking about Canada. As mentioned earlier in the hearing, Canada is a critically important source of uranium, but there is no enrichment capability in Canada at all, despite the fact that they will be deploying low-enriched uranium reactors by GE Hitachi. The Ontario power generation is committed to doing that, and there are a series of other advanced reactors that would use highly-enriched -- or high-assay, low-enriched uranium in their production.

So I think there is a great utility in having enhanced U.S.-Canadian cooperation in this area.

*Mr. Latta. Thank you.

Ms. Korsnick, just this week we heard the announcement that the company TerraPower would be entering into a

memorandum of understanding with Centrus Energy Corporation, which operates a HALEU enrichment facility in Piketon, Ohio. This is a sign that private capital is already -- is ready to invest in our -- in the domestic nuclear industry, and DoE needs to step up its support and quickly implement programs to establish -- established in the Energy Act of 2020.

How important is it for the industry to have DoE fully implement the HALEU availability program?

*Ms. Korsnick. Yes, we think it is critical for the DoE to engage on the high-assay LEU program, and that is because the market is not yet established, right? These are advanced reactors that are going to be built, but there is not an established supply right now of the high-assay LEU, and that is where it is very important that our government, through the Department of Energy, help get that sort of moving and going. And significant investment -- they did recently put out a request for proposal that was mentioned earlier today.

Just a point of note, as the industry reviewed that we were very dissatisfied with the request for proposal, and put comments to that effect, which I appreciate the DoE is looking at now.

*Mr. Latta. Well, Mr. Chairman, my time is about to expire, and I appreciate the testimony from our witnesses today because we want to make sure that we are leading in the world, and we have everything we have to have, especially from the uranium and the enriched uranium in this country. So with that, Mr. Chairman, I yield back the balance of my time.

*Mr. Duncan. The gentleman yields back. I will now go to Washington for Ms. Schrier for five minutes.

*Ms. Schrier. Thank you, Mr. Chairman. Thank you, Ranking Member DeGette, and thank you to our witnesses today.

My understanding is that, for every gigawatt of nuclear capacity constructed, some 200,000 job years of employment are created. And as we increase the mix of nuclear energy in the U.S. energy grid, many more very skilled workers will be needed to construct, and operate, and maintain, and also guard these facilities.

We heard from my colleagues and witnesses in the earlier panel about the workforce shortages and our Federal Government, and what we must do to meet -- to manage the workforce to meet the need for nuclear power in the coming

decades. But ensuring that we develop and support workers within the private sector is also important, not just the public sector.

In fact, in Washington State we have a long history of nuclear power with hundreds of companies participating. Terrapower is actually one of them. But universities with Ph.D.s, we have PNNL, which is a powerhouse of research in this area.

I was just a few minutes ago so heartened by your comments, Ms. Korsnick, about how the coal industry jobs can translate so well into nuclear industry jobs, because that is one of the things that we have really worried about, is that we don't want to be pie in the sky about making sure that everybody can transition to a clean energy job. And so what you said meant a lot, I think, to all of us. And I think that facts should weigh heavily in decisions about where to site nuclear power plants, so that we can have those same people doing the work.

I wanted to direct this question, really, to the entire panel, just for your thoughts. And it is about workforce. I would like to start with you, Ms. Korsnick, because you

touched on the significance of nuclear power and job creation. Can you just expand on ways you have seen the private sector thoughtfully approach workforce development, where partnerships have been made, what lessons we can learn on the government side, and how we should prepare the next generation of leaders and thinkers in the nuclear industry?

*Ms. Korsnick. Sure, I am happy to begin and my colleagues, obviously, can jump in and add.

I think a recent DoE report came out as they looked ahead at potentially having 3 times the amount of nuclear power by 2050, and they estimated that we would need 375,000 additional workers. So just to give a sort of a volume, it is very significant.

But these aren't all nuclear engineers, right? These are -- they run the whole gamut. Some of them are engineers, mechanical, electrical, et cetera. But they are also, you know, plumbers, and pipefitters, and electricians, and I&C techs. And they are also, you know, folks that maybe have just a two-year degree, a chemistry technician, for example. There are some people right out of high school.

And so I think what we need to really look at, from a

workforce perspective, is literally K through 12, you know, and on. Like, don't just start at secondary education, you know, start from the very beginning. I know we have teamed several years ago -- I want to give credit to the American Nuclear Society, where they have built in programs about nuclear energy into K through 12 programs, because I think it starts that young that you get people sort of interested and engaged. And my hat is off to American Nuclear Society. They worked with the Department of Energy to get this established, and they are continuing to grow it.

When I was a site vice president back in the earlier age, maybe 2008, 2010 timeframe, there was the conversation around a nuclear renaissance. And what it caused the industry to do is partner with community colleges and partner with others to begin to get that supply chain of people, if you will, ready. And so I think that is really what needs to happen again today.

If there is this clear signal that we are absolutely focused on making nuclear thrive, then, if you will, a machine begins within the industry itself that says we want to invest in these people, we want a team with people that

have fossil fuel workers and encourage them to come over to nuclear. We want a team with universities. We want a team with high schools to have a natural pipeline. We work very well with the unions. They have fantastic apprenticeship programs. We are all in.

*Mr. Merrifield. Yes, I would like to reinforce that comment, and I chair an organization called E4 Carolinas, which is a North and South Carolina energy association -- plumbers, electricians, pipefitters, welders.

We identified a long time ago having nuclear-grade welders is going to be critically important. That is an area we are already challenged in the existing nuclear industry, let alone having the workforce available for these advanced reactors going forward.

We talked a lot about the issue of the bow wave of retirement at the NRC. It is the same in the nuclear industry, and particularly with the trades. So, you know, I think colleges and universities will respond to having the engineers that we need, but it is really the trades that are going to need more help, both from unions and otherwise.

*Ms. Schrier. Thank you. I appreciate those comments,

particularly touching on apprenticeship programs.

I yield back.

*Mr. Duncan. The gentlelady yields back. Thanks for mentioning the Carolinas and what we are doing. I will now go to Kentucky and recognize Mr. Guthrie.

*Mr. Guthrie. Thank you. Welcome to Kentucky again. Thank you. And I am sorry I missed some of the discussion. We have three subcommittee hearings going on today, so we are all kind of bouncing around. And I really wanted to be part of this discussion, but I was chairing one, so I couldn't be. So I will say that and get right to my point.

You know, Kentucky has been an energy-producing state. We are very famous for good Kentucky coal. And what we have seen is some of our coal plants, obviously, go out of existence and move forward. So, you know, my big concern and one of the things I would like to see and we are going to work on is turning these brownfield sites, the old coal plants, into nuclear sites. We are trying to continue our leadership, and our local -- state and local leaders.

So I guess my question -- and I know I used to work in transportation stuff when I was in previous committees, and

building in a right-of-way is a lot simpler when you have already done a lot of the work beforehand than just building a greenfield site. I know there is differences between -- it is not just completely 100 -- you are not just adding an extra lane, there are some differences between nuclear and other power generation, but there are a lot of similarities.

And so my question to each of you, if you kind of address them -- we will just start left and go right -- what are your views about the potential use of brownfield sites?

And then, can we use these sites to help expedite? Do you think it would make it quicker using a site that already existed for energy producing to make it quicker?

Mr. Nordhaus, if you will, start and --

*Mr. Nordhaus. Yes, I mean, there -- obviously, I think we have -- a number of conversations we have had already here, it is clear that there is huge potential there. I think that we will need to expedite and do any of that quickly. I think we are going to kind of need to take a hard look at a set of the existing rules and regulations associated with exclusion zones, emergency planning, a variety of other issues. I think the Commission has already

stumbled a bit on that issue and sort of trying to reset those rules already.

And, you know, obviously, when you are talking about a very different kind of advanced nuclear plant, often smaller that you are talking to sort of dropping into an existing coal site that is smaller than the historic, large, you know, 10-mile exclusion zones we have had around large, light-water plants, there is going to be a need to make pretty significant changes in the regulatory frameworks. Those changes are appropriate, given the differences in the technology, but that is just one example of the sort of kind of change that is going to have to happen. It is going to have to happen quickly in terms of modernizing regulation.

I think, you know, I see kind of a pretty broad bipartisan desire to kind of turn these sites into sites for nuclear generation. But that literally can't happen without pretty significant changes in how the NRC approaches a set of these questions around regulating sites.

*Mr. Guthrie. All right, thank you.

Ms. Korsnick?

*Ms. Korsnick. I think it is a wonderful idea, and I

think we should challenge the regulator to make it happen efficiently. These are a fantastic way to keep that workforce employed. Many towns are built, literally, around a fossil fuel plant. There is no reason for that town to go out of business just because that coal plant needs to transition to another source of energy. And nuclear is a wonderful opportunity.

I mentioned in answer to a previous question a study was done. We could use 75 percent of the workforce. I challenge it. I think it can be even more of a percentage of the workforce. I have worked at nuclear plants before. We brought coal folks down to help us with our refueling outages. We work hand in glove. It is a match made in heaven.

*Mr. Guthrie. Thank you.

Ms. Toth?

*Ms. Toth. Yes, thank you, Congressman.

So Good Energy Collective, you know, we have looked, we have started to look at quantifying some of the community-level benefits through our report, "Opportunities for Coal Closure Communities through Nuclear Energy,'' and, you know,

this year we will be conducting some on-the-ground engagements with prospective host communities facing coal plant retirements over, you know, what are your questions about nuclear? Maybe you have worked on some of the plants before to help with refueling outages.

But we anticipate that, you know, communities that are familiar with hosting large energy infrastructure like a coal facility may be among the most interested in hosting new nuclear, and we should be facilitating that as part of a just energy transition.

*Mr. Guthrie. Thank you.

And Mr. Merrifield?

*Mr. Merrifield. Yes, I think coal facilities, for all the reasons mentioned, make excellent sites for nuclear power plants. Much of the infrastructure can be reused.

I would say the same for other fossil plants that are retiring -- combined cycle gas units, for example -- or other brownfield communities. I think Congressman Tonko made some good points about the expansion there.

One thing I would say, you know, the NRC right now requires there to be an analysis of a need for power in the

environmental impact statement process. That seems to be pretty redundant, if you are talking about repowering a coal plant.

In addition, this requirement is really typically covered by state public utility commissions in terms of the for power, or has been evaluated by the applicant itself.

So I think the NRC's -- I know in the context of the modernization of Nuclear Reactor Environmental Reviews Act, one of the areas of strengthening, I would -- I believe, would be to drop the requirement for the NRC to do a need for power. It is one of the largest pieces of their review. Frankly, I think it is completely unnecessary.

*Mr. Guthrie. Thanks, I appreciate that.

And my time has expired, so I will yield back.

*Mr. Duncan. The gentleman's time has expired. I now go to Mr. Veasey from Texas for five minutes.

*Mr. Veasey. Mr. Chairman, thank you very much. And it is great that during this hearing -- that we are considering, in conjunction with -- just how important good jobs are as it relates to some of the improvements that the NRC's licensing of nuclear technologies are.

I know that, combined with targeted funding, that we can truly make nuclear energy a component of our cleaner energy plans. And so I am just -- great that we are here talking about this, because I really do think that we need to get this out more in front of the public.

One of the things that I am really -- I think is a really great project that is going on right now in Texas as it relates to nuclear technologies -- and I have mentioned it before in a previous committee hearing -- is that Abilene Christian University is experimenting with a nuclear energy experimental testing lab in conjunction with University of Texas and Texas A&M to experiment using molten salts, rather than water, as a coolant for nuclear reactors. And potential new additions of safe, reliable, affordable, and cleaner nuclear power like those at Abilene Christian, I think, are going to be very essential to the U.S. energy security and deployment of new advanced nuclear reactor technology that is going to be crucial for our ability to compete with China and Russia in the global nuclear industry.

For new nuclear technology to get to these goals, these reactors will need to be licensed quickly by the NRC at

scale, and be eligible for targeted Federal funding. That is clearly in our national interest. And on the latter point, I was pleased to hear that the Chip Act established a new program for new university research reactors, and last year's NDAA provided important access to fuel service for such new reactors.

Commissioner Merrifield, I know that you are helping at Abilene Christian, and that you are advising them on its research reactor project. Can you please describe how important it is that we ensure a steady funding stream to eligible new research reactor projects in the same way we have supported existing research reactors?

*Mr. Merrifield. Yes, thank you very much, Congressman, for that question.

And the Abilene Christian University program, with its partner, Natura, is an important one, and one that I think is very exciting. It is going to allow the development and deployment of a molten salt reactor for university research purposes. It will be the first new research reactor to be built in the United States for several decades.

And I think, if you go back to the early days of the

Atomic Energy Act, research reactors were really the leading technique used by the Eisenhower Administration in its Atoms for Peace program. So I think having a new, U.S.-based, designed research reactor could be a potential item that could be exported to countries that are seeking to get into the nuclear energy programs. So I think it is very exciting there.

The Chips Act, the recent legislation, was very helpful in that regard. The NDAA, there is still some appropriations language out there that says, you know, the appropriators don't want to build new research reactors. I think this is something there needs to be further dialogue. It is important for us to have a new generation of these reactors, to have a new generation of individuals who can be trained on them, and certainly appreciate your support and that of other Members of Congress to enable that activity.

*Mr. Veasey. Yes. No, thank you very much, and work with me a little bit on this question. It is more of a -- getting your opinion on something, but do you think that there is actually some benefit for people to be able to go to someplace like west Texas, and see so much traditional fossil

fuel energy being produced, then also see the country's leader when it comes to cleaner technologies like wind and solar, and then see this nuclear project, and kind of see it all come together in one space? How important is that for the public?

*Mr. Merrifield. I think it is important for a couple of different reasons.

Number one, we do not have a university-based molten salt reactor in the United States. So it would be a leader in that regard, and would draw people from all over the world to look at it. It is a consortium made up of four universities, three of which are in Texas, one of which is in Georgia. So it is a very collaborative, interactive program.

The other thing I think is important -- and I can't talk in detail -- but as a law firm we have talked with a number of folks in Texas and in west Texas who are really looking at trying to decarbonize various parts of the upstream part of oil production through the use of micro reactors and other advanced reactor technologies. So this is really an area Texas could take a lead, and we certainly think that Abilene and Natura could be part of that.

*Mr. Veasey. Yes, thank you very much. I appreciate that.

I yield back.

*Mr. Duncan. The gentleman yields back. We should talk about U-233 some time.

I now go to the chairwoman of the full committee, Mrs. Rodgers, for five minutes.

*The Chair. Thank you, Mr. Chairman.

On the first panel I raised concerns about the NRC's handling of its part 53 regulatory development -- so this is for the advanced nuclear reactors, some exciting technology in Washington State, too -- as outlined in the letter Members of Congress just sent to the Commission. And I believe all of you do not think that the current proposal is workable. I also believe many of you expressed this repeatedly to NRC staff.

So to Ms. Korsnick, Mr. Merrifield, Mr. Nordhaus, my first question is, "How do you instill within NRC a results-oriented culture, a culture that measures its work, shows progress, works to adhere to the laws that Congress has passed?'‘

And I am going to start with Ms. Korsnick.

*Ms. Korsnick. Thank you very much. Thanks for the question.

It has to start with leadership, honestly. If you want the organization to change, it has to be important to leadership. They have to talk about it.

And, you know, we have had previous working relationships with the NRC that have been very helpful, and have solved problems, and we have worked through things. Part 53 was not that experience. It has been one of the most frustrating interactions, I think, between the industry and the regulator that I have been associated with, and I have 35 years with this industry.

And again, to change that, I think it has to come from leadership. It is not about holding meetings, it is about listening to the feedback. They held a lot of meetings; they didn't listen.

*The Chair. Okay, thank you.

*Mr. Merrifield. I concur with Maria. As a former commissioner, I have to say this has been very disappointing to see how this has all panned out. I sat in a lot of those

meetings, and I will tell you there wasn't a whole lot of -- there was listening, but there wasn't engagement. And I think some of it was a bit of a kabuki dance, frankly.

I think the -- what they have come up with in terms of part 53 is not useful. I don't think it will be used. And frankly, they could do a whole lot better. The agency has been around for 50 years. They have got a lot of knowledge. They ought to be able to put together an efficient and streamlined licensing process for advanced reactors. And what we got is completely opposite of that.

Ultimately, when I was a commissioner we got held accountable by Congress. Former Senator Pete Domenici called us to the carpet. We had a similar situation that happened with the earlier iteration of part 52, the 2-step licensing process, and the Commission at that -- 1-step licensing process. And the Commission at that point went back to the staff and told them to start from scratch.

This piece in part 53 isn't workable, it is not going to be helpful, and it certainly is not what Congress intended by passing the law.

*The Chair. Thank you.

Mr. Nordhaus?

*Mr. Nordhaus. I will just agree with both of the prior comments. You know, just -- there is -- I don't think that this happens without greater leadership both from Congress and from the Commission itself.

And until, you know -- and as I mentioned in my opening comments, you know, it was very heartening to see 60 Members of Congress, bipartisan, saying, you know, to the Commission that this part 53 rule, we need to go back to the drawing board, it needs substantial changes, and being pretty explicit about a set of the major problems that need to be addressed before that rule moves forward.

I think that the Commission and the commissioners need to sort of take up that challenge, and send that message very clearly to the staff, that they need to go back to the drawing board. They need to go back and look at, you know -- as our organization, which was, I think, certainly on the sort of NGO, non-governmental, side, attended more of these meetings, submitted more extensive public comment than sort of almost anyone else participating, very little of it was actually kind of taken up. And I think that was generally

the stakeholder experience.

So I think until Congress, you know, makes it very clear that we need a substantially modernized and different framework for licensing advanced reactors, and then I think we need to expect that the commissioners kind of follow through on that --

*The Chair. Thank you.

*Mr. Nordhaus. -- and demand that of the staff.

*The Chair. Great, okay, thank you.

And to that point, Mr. Merrifield, you mentioned that there were lots of meetings. I wanted to ask, do you think the NRC licensing staff, in interactions with applicants, should not act as a consultant on agency rules and guidance, as they have been telling applicants I --

*Mr. Merrifield. I think what the agency staff can do is engage. They can have workshops where they actually engage in back-and-forth conversation to try to drive better understanding of where the licensees are coming from and where the agency positions are. Many of the meetings were not much more than listening sessions, where the utilities and other advanced reactor developers would explain their

concerns, which were met with, "Thank you very much, we will consider it.'‘

At the end of the day -- Dan Dorman was here earlier. Dan Dorman and his senior team are perfectly satisfied with the package they delivered to the Commission on part 53. That is troubling to me. Despite all of the concerns that have been raised by Congress and by folks on this side of the table, they have no -- they believe that they are completely in the right.

I think that there is -- and I put this into my -- the speech I gave at ANS earlier this year -- I think there is some fundamental issues at the agency. One of them is technical depth. I am a little concerned whether they have the technical capability to come back with a better product.

*The Chair. Thank you. It is very helpful for you all to be here and to tell us, from your perspective, what is going on. We are going to work on this with bipartisan support. Thank you.

*Mr. Duncan. The gentlelady yields back. I now go to Mr. Cardenas for five minutes.

*Mr. Cardenas. Thank you very much, Mr. Chairman and

Ranking Member. I appreciate this opportunity for -- to have this hearing, and thank you to the witnesses for giving us your perspectives and expertise.

While the NRC considers public opinion in their nuclear regulatory decisions, proceedings are often inaccessible and difficult to understand. Creating better, more accessible opportunities for public participation are necessary out of respect for potentially impacted communities to rebuild trust with the public, and because it will lead to better outcomes down the line. That is why I am pleased to see Congressman Levin's bill, H.R. 4530, which would establish the office of public engagement and participation within NRC included in today's hearing.

Ms. Toth, is that how you say your name? Toth, okay, thank you. Can you discuss how an office of public engagement and participation at the Nuclear Regulatory Commission would help communities better navigate proceedings before the Commission?

*Ms. Toth. Certainly. Thank you, Congressman.

As the ranking member of the full committee, Representative Pallone, mentioned on the previous panel, from

2021 to 2022, the NRC undertook a systematic assessment of how it addresses environmental justice across all of its programs and activities. And that review process revealed a lot of learnings about how the Commission can be doing better that extend beyond just how it implements environmental justice practices across the agency.

The staff made many recommendations to the Commission that are still sitting with the Commission for action. One of these, referencing the NRC's existing 1995 EJ strategy, flagged that the NRC has a goal to inspire stakeholder confidence through more comprehensive public outreach, engaging more transparently, providing information up front. And certainly, the staff had identified that, currently, NRC stakeholder outreach is very infrequent, and often only ever takes place when there is already a pending activity within the community.

Also that in its engagements with tribal and EJ communities, but also writ large, the NRC -- it is often incumbent on an individual project manager to take the initiative to conduct effective local engagement and outreach. And there is a lot of variability among the

project management of how they, you know, undertake that work.

So we see OPEP as potentially playing an important function not only in externally making itself accessible to the public and answering questions, but also internally, potentially being able to train project managers in effective strategies for public engagement.

*Mr. Cardenas. So an office of public engagement, do you think it potentially could help both project sponsors and potentially impacted communities, as well?

*Ms. Toth. Yes, absolutely. As I mentioned in my opening remarks, the OPEP would establish more capabilities to enable the public to engage with the regulator, which is an important democratizing function of any Federal agency.

But critically, having that office in place, the OPEP would also be able to engage with some of the developers, as well, or with communities where there is conversation around potentially hosting new nuclear infrastructure, and bringing those communities into the process early on to answer a lot of questions that they might have, bring them into the process. Because as we know, a lot of times, even with

environmental reviews under NEPA, some of the delays that are experienced are because of issues or concerns that the public has that aren't unearthed until much later in the infrastructure siting process. So OPEP could start to detangle that concern to the benefit of industry.

*Mr. Cardenas. I am the kind of average American before I got elected. Now I am just kind of messed up. I have been doing this for 27 years. I am in the inside looking out.

But before I got elected I had never gone to a community meeting when it came to the environmental issues impacting my community, the Northeast Valley, where I was born and raised. But when I got elected, it was brought to my attention that we had more dump sites and more particulate matter issues emanating out of our community that were actually coming from all over LA County, the largest populated county in the country.

And it wasn't until I became an elected official that I realized that somebody needed to do something to actually listen to the people who are affected by these things, not just look at it from the vantage point of somebody investing $1 million, $100 million, $1 billion into a facility. It is

about balance, about making sure that we listen to all sides.

And so with that, can you talk about how the NRC Office of Public Engagement and Participation Act would build on the NRC's environmental justice review team's recommendations?

*Ms. Toth. Yes, certainly, Congressman.

You know, with the systematic assessment of EJ that the Commission has identified, they held a lot of both public and private community meetings to understand how the public felt about the NRC's engagements, certainly found things like improvements in translation services, providing longer notice ahead of public meetings, the kinds of learnings that an office of public participation could learn and convey to NRC Commission staff to implement -- to improve that -- those functions.

*Mr. Cardenas. Thank you very much.

My time having expired, I yield back. Thank you very much, Mr. --

*Mr. Duncan. The gentleman yields back. I now go to Mr. Walberg from Michigan. Five minutes.

*Mr. Walberg. Thank you, Mr. Chairman, and thank you to our second panel. It has been a long wait for you.

Mr. Merrifield, it is good to see you again since COP 27.

*Mr. Merrifield. Thank you very much.

*Mr. Walberg. It is about as warm here as it was back then.

*Mr. Merrifield. Indeed.

*Mr. Walberg. Yes. I spoke to the first panel about my draft legislation, the Nuclear Advisory Committee Reform Act. Could you talk to us about why the reforms laid out in this legislation are needed?

And along with that, would these changes actually produce better outcomes because the Advisory Committee on Reactor Safeguards will be focused on new and novel projects?

*Mr. Merrifield. Yes, thank you very much for that question. And this is an issue I have been thinking about since the late 1990s, when I was a commissioner.

I interacted with the ACRS, and I engaged with them and used their work product in helping to make determinations as commissioner. I engaged -- and I had it read into the record -- with the Nuclear Innovation Alliance in a study of ACRS. We interviewed over 40 individuals, most of them former NRC

commissioners, senior staff, ACRS members, and others, and came up with a series of recommendations not to get rid of ACRS, not to take away from the work it does on behalf of the Commission and the public, but to really target them to the most important things that they needed to be doing in order to enable the commissioners to make sound decisions about the technologies that we are moving forward with, and to do so in a manner that was going to be efficient and effective.

And the recommendations that you have included in your legislation are consistent with what that attempted to achieve. We certainly -- you know, I certainly support the work that you are doing there. We would certainly be committed to working with the committee to see if there are some additional improvements to your legislation we could make.

But at the end of the day, I think the Commission needs to be granted the authority, which it currently doesn't have under the Atomic Energy Act, to have some flexibility about how it deploys the ACRS to really look at the most technically difficult issues, and free up some time for them to focus on that, and remove the current requirement that

they have to review, in some cases, relatively mundane licensing areas that don't -- where they don't, frankly, add value.

*Mr. Walberg. Good tools used by the right body ultimately help make the project work, doesn't it? Or we hope that is the case.

In addition to making sure that the NRC's regulatory requirements are appropriate, the right staff must be in place to do the work. There are some proposals to improve the NRC's ability to hire the right people, including one bill today, the Strengthening the NRC Workforce Act of 2023. However, I am concerned that we need a fix that provides certainty to companies that they would be working with a competent regulator in the long term.

And so, Mr. Merrifield, your testimony discusses this legislation, as well as the need for the NRC to have qualified staff and leadership. Can you expand on that?

And then, secondarily, how can the NRC incorporate some of the best practices of private industry to attract the right staff?

*Mr. Merrifield. The NRC -- thank you -- the NRC is

challenged right now. They have a retiring workforce. Frankly, as I mentioned, I think they have lost some of their technical capabilities as a result of that. And so having greater tools to make sure that they have got the right workforce makes sense.

I have looked at the Securities and Exchange Commission, FDIC, and others. There are other financial institutions which have been given greater flexibility to hire their workforce not simply at the entry level, but all the way up through senior management, to make sure that there is an appropriate workforce that is encouraged and employed. I think it is very important that they have diversity in that group, not just simply -- I think they ought to be considering people who do have industry experience, who do have experience in other departments and agencies, because that was the kind of diversity we had when I was a commissioner, and I think, frankly, the NRC needs more of it.

I do have a few concerns. I agree with the intent of the Strengthening the NRC Workforce Act. I am a little concerned about the authority is vested solely in the chairman. I think those decisions should be with the

Commission as a whole.

The limitations on the timing of that authority is somewhat limited. There may be reasons of which I am not aware. Maybe budgetary. I think those authorities should be given to the NRC for a longer period of time.

And I think, certainly, it would probably be worth considering having the Government Accountability Office and perhaps OMB engaged in dialogue about other tools that might be useful to enhance the ability of the agency to have what they need to attract a talented and capable workforce.

*Mr. Walberg. Okay. Thank you.

My time is expired. I yield back.

*Mr. Duncan. The gentleman yields back. I now go to Mr. Palmer for five minutes.

*Mr. Palmer. Thank you, Mr. Chairman.

In the previous panel we had a discussion about the fact that the U.S. needs to decouple from China and Russia and other foreign sources for nuclear fuel. And one of the things that I have really been pushing is the conversion to advanced nuclear, but specifically following the model utilized by France with their standard design, but more

specifically the model of what we would use with our nuclear fleet, our submarines and aircraft carriers.

And Mr. Merrifield, I just -- I want to ask you, what is your -- what are your thoughts about the ability to -- for the NRC to expeditiously permit small modular nuclear reactors?

*Mr. Merrifield. I have a couple of different views. The first one is, as we discussed, I don't think the part 53 process that you are coming up with is going to be helpful and useful. Having said that, I think there is an identification that the existing 2-step process in part 50 and the 1-step process that can be used under part 52 can be used to deploy these reactor designs.

What I think is going to be important going forward is having a framework that the agency can deploy in which after they have reviewed the first version of that design, whether it is TerraPower, X-energy, Terrestrial, Oklo, or others, that the -- that what is required to deploy the next version of that same design should really be only focused on site-specific factors, and make it as speedy as possible.

*Mr. Palmer. But isn't that one of the advantages of

the small modular reactors, is that because they can be constructed outside fabricated parts, that site location -- it is much easier to locate one of these than it is the traditional nuclear reactor?

Plus, they will fit into the grid where you have got all kind of grid issues with renewables, and with the traditional nuclear. Isn't that --

*Mr. Merrifield. That is completely the case. I used to be -- I used to work in the construction industry. We sold combined cycle gas units. Once you have got that design down, a nuclear reactor design down and licensed, it should be a very similar process.

In the 2000s we put in about 1000 gigawatts of gas, either combined cycle, simple cycle, or other combustion units. The goal ought to be able to get to a point where we can deploy nuclear reactors, advanced nuclear reactors, in a similar, efficient way.

*Mr. Palmer. You also use a lot less land space than you do with the renewables and the -- and what we normally have with traditional nuclear.

And the other thing I want to point out is -- because I

keep hearing concerns about the use of nuclear with the -- these are almost exactly the same. They have a little more generating capacity than a reactor on an aircraft carrier or a nuclear submarine, but the U.S. Navy has got 6,200 reactor years -- that is over a 50-year period -- with no accidents. This should be what, I think, the public should be pushing us toward. No emissions. These are modular units that are fabricated and located on a site connecting with the grid. It seems to me, in terms of eliminating emissions or reducing emissions, this is the best course to follow.

And the last thing is being able to recycle what we have always considered spent fuel rods, because my understanding is -- again, going back somewhat to the French design, but what we could design with these -- we could recover about 96 percent of the recoverable material from spent fuel rods. And that would decouple us to a certain extent from foreign supply.

*Mr. Merrifield. Yes. To your point, Congressman, we regularly park two aircraft carriers in San Diego, each of which contains two nuclear reactors. The public lives immediately in proximity to those reactors, and nobody thinks

anything about it because of their safety. And that is the goal that, in my view, we can have for advanced nuclear technologies.

On your second point, advanced reactors do bring with them the promise of re-utilizing what is considered now a waste, used nuclear fuel, and making it into a resource. And there are, from my count, probably at least four or five different companies out there today evaluating the potential of re-utilizing that fuel, and I think that is a very exciting thing going forward.

*Mr. Palmer. Mr. Chairman, I really appreciate the opportunity to have hearings like this. I think it is extremely helpful. And hopefully, if the public is paying attention to this, they got to -- they should get a sense that we have a good idea of where we need to go.

With that, I yield back.

*Mr. Duncan. The gentleman yields back. And now Mr. Balderson of Ohio is recognized for five minutes.

*Mr. Balderson. Thank you, Mr. Chairman, and thank you all for being here today.

Mr. Merrifield, before I get to my questions, would you

like to respond to some of the earlier comments regarding public participation?

Mary Martin from the committee just came back and asked me, "Mr. Merrifield, would you like to make some points?'' Would you like to have any response to that, or --

*Mr. Merrifield. Yes, I just -- I am firmly a firm believer that the NRC can do -- can and should do a better job of engaging with the public in two-way communication, and should also be leaning forward to provide information to communities that may host nuclear facilities. I fully agree with that, fully agree that more resources should be added there, fully agree that the agency staff should be more engaging with members of the public, should be providing them information about what is going on. All of that I am fully in agreement with.

I do have concerns about the creation of a new office in equal standing to the Office of Nuclear Reactor Regulation, but with a mandate that will assist in submitting contentions and hearing requests which are ultimately a challenge to the NRC staff licensing process. Challenges could -- would then be funded by taxpayer dollars, such that the NRC staff could

essentially use taxpayer dollars to come up with new and creative ways to legally challenge its own licensing decisions, potentially delaying those decisions in the process.

So I agree that the agency needs to be -- do more on engagement. I think that element of the agency funding a contentious process is not one I would support.

*Mr. Balderson. Thank you. I will follow up with some of my other questions.

As you know, the nuclear industry requires a predictable licensing process in order to secure financial support from investors to commercialize their technologies. Regulatory predictability allows financiers to estimate timelines and cost accurately. Draft bills such as the Nuclear Licensing Efficiency Act seek to address this. Mr. Merrifield, what are your thoughts on the approach taken by these bills?

*Mr. Merrifield. As a general matter, I think many of the bills that are before this committee today are beneficial. I think I would include within that the Nuclear Licensing Efficiency Act. The U.S. NIC is supportive of the expedited review timelines contained in the legislation, and

we would certainly be pleased to continue to work with the committee to enhance the legislation.

*Mr. Balderson. What else can be done to strengthen these bills to support more of these new technologies?

*Mr. Merrifield. I am sorry, Congressman.

*Mr. Balderson. I am sorry. What else can be done to strengthen these bills to support the commercialization of the new technologies?

*Mr. Merrifield. I think, well, frankly, one of the areas that was talked about earlier today was the process that is used to -- the fee-based process used to apply to these reactor designs. And I do think that whole process was driven by the Omnibus Budget and Reconciliation Act, which created the NRC as a fee-based agency. The current fleet of reactors did not have to go through that process. They had to pay a fee for licensing, but it was relatively modest in comparison.

I think there ought to be put into place some guidelines that would perhaps have a cost share requirement for advanced reactor developers -- you know, 80 percent of the regulatory costs paid for by the Federal Government, 20 percent by the

licensee, ability to perhaps waive fee requirements until after the reactors are built. I think there is a variety of things that could happen there that would be helpful.

I think also the agency should be held -- you know, once it has accepted the application for review, it should be held to the timeline, and perhaps be held to the amount of hours that it would spend on reviewing that application. And if it went beyond that time or beyond those hours, those would be borne by the Federal Fisc, rather than imposing those on an advanced reactor developer.

*Mr. Balderson. Okay. I would also like your thoughts, Ms. Korsnick and Mr. Nordhaus, on this particular subject. Would you like to add anything to that? What else can be done to strengthen the bills to support the commercialization of some of these technologies?

*Ms. Korsnick. Yes, I -- earlier I think there was some conversation around maybe additional metrics that could be put in place, and I think that would allow for some of the transparency for how long is it taking to review some of this information, et cetera, so that you could see a pattern of improvement as they do more of these reviews, instead of a

pattern of additional resources and more time, for example.

So I think some interesting metrics that would have to be reported back to Congress would be interesting.

*Mr. Balderson. Okay. Mr. Nordhaus, sir.

*Mr. Nordhaus. I would agree. I think that, you know, I will just sort of connect this a little bit to some of the discussion around staffing and workforce issues --

*Mr. Balderson. Okay.

*Mr. Nordhaus. -- which is I think there is reasonable concern that, if you don't have an accountable, streamlined, performance-based licensing process and you add additional staff, that you don't actually get additional efficiencies. So I think that the staffing and workforce issues at the NRC need to be much more explicitly tied to expectations of expeditious review, and --

*Mr. Balderson. Thank you very much, Mr. Chairman. I yield back.

*Mr. Duncan. The gentleman yields back. Now Mr. Pfluger is recognized for five minutes.

*Mr. Pfluger. Thank you, Mr. Chairman, and I thank the witnesses for being here.

You know, one of the things that we keep talking about in this committee is just the speed of relevancy, doing things in the regulatory process that allow us to compete. And, you know, nobody knows bureaucratic red tape better than this panel of witnesses. We appreciate you helping us push back on that.

And I also appreciate my colleague from Texas bringing up Abilene Christian, and the work that they are doing. This is the kind of innovation that we, as the government, we set the conditions and then get out of the way. And let's let either private industry or these partnerships or universities do what they do best.

Ms. Korsnick, one thing that you brought up -- and I appreciate it -- is a need for a -- not an interim storage, but a permanent repository. And so I couldn't agree more. And we actually have been pushing back fervently in Andrews, Texas against an interim storage facility that -- you know, we have got Yucca Mountain. It is the law of the land. And how do we, in your opinion, get to that permanent facility there, and what needs to be done either by the NRC or by Congress in order to get to that point?

*Ms. Korsnick. Well, thank you, and thanks for the question.

You know, I guess I would just step back for a minute and just recognize that the industry and ratepayers have done their part in establishing a fund to establish a long-term repository or a durable fuel solution. There is over $40 billion in that fund today. And it is really -- the government needs to get to yes on this. We need a long-term geologic repository. Whether or not we reprocess, whether or not we have, you know, interim storage, all of those can be pieces and parts. But at the end of the day, you are going to have to have a long-term repository, regardless.

You know, we can look around the world and say, well, let's see, Finland is doing it, Sweden is doing it, Switzerland is doing it, France is doing something, Canada is making some progress, so is the UK. I have a high level of confidence in the United States of America that we can figure this out. It is not a technical challenge.

We just need to move forward with it and, at the end of the day, act as we should and come up with a long-term repository. Because then things like interim storage, they

make sense. They make sense because people understand there is a long-term answer, and people have a view of being interim. Okay, I know I am interim because there is something long term. It is much harder to convince somebody they are interim when there is nothing else around.

*Mr. Pfluger. What a great point.

And I would like to thank the chairman for his leadership on this particular subject, which is helping get us -- get the government to yes. And there are many of us who are pushing for that. So thank you for your testimony there.

Mr. Nordhaus, I enjoyed your commentary on the modernization of our environmental review, NEPA process, and how we can get to -- have the speed of relevancy. And maybe can you spend a couple of minutes expanding on other areas outside of the EA, the EIS, the analysis and impact statement, about how we can actually compete and innovate and build and get to where we need to? Because I am worried about competing with China right now and other countries, that we are not doing things at the speed of relevancy.

*Mr. Merrifield. Was that --

*Mr. Pfluger. Sorry, I am looking at you, Mr. Merrifield, but I mean Mr. Nordhaus.

*Mr. Merrifield. Okay.

*Mr. Pfluger. Very confusing when you -- Mr. Merrifield is looking at me going, "Is that for me?'‘

[Laughter.]

*Mr. Nordhaus. I was a little -- could you briefly restate the question?

*Mr. Pfluger. Yes, just looking at environmental impact statements and analyses, the recent legislation that we passed to modernize those, to shorten them, to bring them into the speed of relevancy, can you just comment and summarize --

*Mr. Nordhaus. Yes --

*Mr. Pfluger. -- what needs to be done, either outside of that or in addition to that?

*Mr. Nordhaus. Well, you know, again, I think, you know, in your role providing oversight and accountability over the NRC, I mean, I think it needs to be clear that the NRC needs to move sort of quickly to comply with the new requirements in the Fiscal Responsibility Act.

I think that the NRC could also sort of remove new reactors as an automatic sort of trigger for EIS, for an EIS project. Our view is that it should be sort of based on whether there is significant impact associated. You know, a small factory-manufactured reactor shouldn't necessarily automatically have to kind of comply with an EIS in the way that we have historically required large reactors to do so.

So those are two things that I think would sort of make a big difference.

*Mr. Pfluger. Mr. Chairman, may I have 30 seconds for my snafu?

So what is the threat if we don't comply with the Fiscal Responsibility Act, if we don't actually implement what the reforms to NEPA have stated for us? What is the real threat to the country?

*Mr. Nordhaus. I just think we are likely to sort of end up what we have sort of had to date, which is just a lot more sort of automatic sort of deferral to an EIS process when it is not necessarily needed. So --

*Mr. Pfluger. So thank you very much.

Mr. Chairman, I yield back.

*Voice. Mr. Chairman, can I just --

*Mr. Duncan. The gentleman yields back, and I now go to Mr. Carter for five minutes.

*Mr. Carter. Thank you, Mr. Chairman, and thank you all for being here. I know it has been a long day for you, but we appreciate it because this is extremely important.

You know, according to the Department of Energy Strategy to Restore American Nuclear Energy Leadership -- and that is a mouthful. But according to this group, the U.S. is missing out on a nuclear reactor market that is valued between 500 and $750 billion a year -- over the next 10 years, I should say. I mean, economically, just economically speaking, and never mind that we are talking about baseload, reliable, clean energy. Just from an economic perspective, we ought to be pursuing this.

Not only that, but looking at it from a worldview, and looking at it from our allies, from our adversaries -- and I know this is preaching to the choir here, I know you all know this, but it is important that I repeat this because we know that China is providing over 80 percent of the financing for its nuclear power plants, and we know why they are doing it.

We know that they are, in some places, even 85 percent. I mean, that is practically giving it away. But what you have to take along with that, as we all know, is something that I think a lot of these countries, particularly these developing countries, are going to find out is very difficult.

But we have had some successes here in America, too. In fact, Romania canceled its plans to work on a -- work with China on a nuclear plant, and instead is working with a U.S. group. That is good news.

Also, Westinghouse building in Poland and the Czech Republic, and excluded Russia and Chinese from bidding on these. So we have got the ability, we have got the knowledge, we have got everything we need, we just need to utilize it and we need to take it.

I want to ask you this question. I will start with you, Ms. Korsnick. Did I get it right? Okay. Let me ask you. With China and Russia rapidly expanding their nuclear reach around the globe, have we already ceded that opportunity to our adversaries?

*Ms. Korsnick. Well, thanks for the question. I think we should be incredibly proud of the innovation that we do

here in the United States. And our innovation pipeline is chock a block full, ready to come out with several different designs.

So, no, I don't think we have ceded our leadership. I think China and Russia -- and Russia, specifically, with their bad behavior in Ukraine -- I think have given a lot of people an opportunity to stand up and take notice. We have watched them cut off the gas supply to Europe, and so they wouldn't do anything different if you -- if they owned all the nuclear plants. They would shut them down, too. Right?

*Mr. Carter. Absolutely.

*Ms. Korsnick. So it matters who you do business with. It matters who you want to form a 100-year relationship with.

*Mr. Carter. And it matters that we should be pursuing that.

*Ms. Korsnick. Absolutely. It should be a strategic imperative of this country --

*Mr. Carter. Absolutely, thank you.

*Ms. Korsnick. -- to absolutely want to make sure that this happens.

*Mr. Carter. Mr. Merrifield, do you want to comment on

that?

*Mr. Merrifield. Yes, I want to give kudos. I think the Ex-Im Bank has been working hard to partner with Westinghouse and others to allow those to be deployed. I concur with Maria. We have got the technologies. We have the ability to get out there and win those markets.

I would say the Development Finance Corporation has been given tools to do more, including having some authorities in equity participation. I think that needs to be encouraged. I think DFC has got to do more in that area.

I would also say it is appalling, as the largest contributor to the World Bank, the United States nonetheless is burdened with the fact, as are others, that a small number of anti-nuclear countries, including Germany, Austria, and Ireland are keeping us from allowing to tap into World Bank funding to enable these technologies to deploy to countries in Africa and elsewhere. That is appalling to me, and I think the United States Government --

*Mr. Carter. That is a great point. I had the opportunity to visit Europe with the Conservative Climate Caucus, and I will tell you that they have allowed --

particularly in Germany, they have allowed their policies to get ahead of their innovation, and closing all their nuclear plants, relying on wind and solar, and now they are having to go back to fire -- to coal power. And that is just inexcusable.

Now, granted, some of it was due to what happened in Ukraine and Russia, but still, it was shortsighted on their part.

Nevertheless, we understand our natural allies, that we can have some success with them. What about the developing countries? What can we do to better position ourselves with those countries?

*Mr. Merrifield. We engage a lot as a law firm with countries in Africa and in Asia that are developing.

*Mr. Carter. But they are just looking for the cheapest thing.

*Mr. Merrifield. They --

*Mr. Carter. They just want energy, period.

*Mr. Merrifield. I will tell you, they -- and when it comes to nuclear, given their choices, they know what the situation is with China. They know what the situation is

with Russia. They would prefer to have U.S. technologies. We, as a government, need to find the tools to help them achieve that choice.

*Mr. Carter. Great. Thank you. Thank you all again.

And I yield back.

*Mr. Duncan. I thank the gentleman, his time has expired. I will go to -- now to Mr. Allen for five minutes.

*Mr. Allen. Thank you, Chair Duncan. This is an important hearing.

Our energy demand is continuing to grow across the world. We saw that play out last winter, and particularly in Germany, where they, unfortunately, had a lot of folks that, you know, didn't have heat, and a lot of lives were lost.

I want to thank you all for being here today and talking about this process. Advancing nuclear energy legislation in our country is critical, in my mind, not only for energy security, but national security. And we should continue to dominate this market.

You know, we talked, I think, a lot about China today and what they are doing. In my district Plant Vogtle, home to units 3 and 4, will be the first two nuclear power plants

built to come online in the United States in over three decades. Unit 3 is projected to be in service at the end of this month, and unit 4 is projected to be in service the first of the year. You know, this is -- and I have been through this with Southern Company, and it has been a tremendous accomplishment. Lots of things, there were lots of headwinds, regulatory changes, and things like that which they experienced on 1 and 2.

But, you know, they persevered, and the accomplishment also highlights the importance of investing in critical infrastructure to enable the next generation of nuclear technologies. What I was told is, you know, these are the new Westinghouse units. There was a learning curve. But guess what? We have the people now that know how to build these things.

And so what I would like to get to here today is to find out how do we go -- I know there is the new module reactors and things like that, but it is going to be a while for those to -- you know, because once you get these things built, it costs very little to operate them. And it is still less than a penny a kilowatt hour. But as we look forward, you know,

what can we do?

And I know that, you know, it is part of the Administration. And, of course, you know, Congress has its role in this. But as Congressman Carter mentioned, it gets to the point where you can't afford to build these things. I mean, it is just too much risk. And even on units 3 and 4, the government had to back those bonds and -- which changed a lot of how it was constructed.

But I am proud to work on a version of the Nuclear Licensing Efficiency Act.

And I would say -- I would ask this question to Mr. Nordhaus, and Mr. Merrifield, and Ms. Korsnick. Could you share your thoughts on this and the -- and, you know, what do we need to do to, one -- I mean, you see countries like France developing these technologies. What have we got to do here in our nation to understand nuclear and use it to our benefit?

*Mr. Merrifield. I think Congress has taken a number of steps over the last several years to incentivize the deployment of advanced nuclear, whether it is through changes such as envisioned in this legislation to improve the

licensing process, or certain funding.

To deploy those internationally, I think the AP-1000 is a good example. Lessons have been learned. We have got potential markets in Poland, Ukraine, Czech Republic, and others in Eastern Europe. And I think having the government tools used by Ex-Im Bank, Development Finance Corporation, and others could be very helpful in getting those designs deployed.

Similarly, GE, TerraPower, other -- X-energy, other designs which are out there certainly could use those same tools, as well.

*Ms. Korsnick. I guess I would add quickly that we need to build it here first. And I really commend the work that has happened at Plant Vogtle, and I commend the fact that the companies, you know, stuck to it even when times got tough. I know that was hard, but we should be very proud of that advanced technology that is now going to be in operation here in the United States.

And in that same way, we have to build the SMRs and build the micro reactors, because if you are going to build it in Romania and Poland and Ghana and all these other

places, you know what? They want to see it here first. They want to see that you built it. They want to know that you did it well. They want to know that your regulator approved it.

And so, you know, I look at this and say, oh, my gosh, we just have to move quickly, not only quickly to help ourselves, we need to move quickly so we can demonstrate to our allies that we can build it in their place, too.

*Mr. Allen. Okay. I am out of time. But, sir, would you like -- Mr. Nordhaus, would you like to comment?

*Mr. Nordhaus. I will just say that the advantage of the smaller reactors is that I think there is more likelihood that we can do it with project finance without these huge sort of government backstops. And it doesn't sort of require the same kind of huge, you know, 60-year, $20 billion --

*Mr. Allen. Right.

*Mr. Nordhaus. -- bet on future electricity production that a big plant like the Vogtle plant costs.

So hopefully, we start to see some AP-300s and some NuScale reactors, and some TerraPower reactors, and some smaller reactors, where we can sort of start to scale and get

some of that learning without necessarily needing to make the same kind of one-off sort of bet-the-farm on a gigawatt scale reactor.

*Mr. Allen. Okay, Mr. Chairman, I apologize, I am over my time.

*Mr. Duncan. That is okay.

*Mr. Allen. But I yield back.

*Mr. Duncan. You were at the end, and we needed to hear the answer.

I want to thank all of our witnesses for being here today. You all have been great. Both panels, really.

Members have additional written questions for you, I am sure. I do, as well.

[The information follows:]

**********COMMITTEE INSERT**********

*Mr. Duncan. And I will remind members they have 10 business days to submit additional questions for the record. I ask the witnesses do their best to submit responses within 10 business days upon receipt of the questions.

I ask unanimous consent to insert in the record documents included on the staff hearing document list, other documents that were provided today.

Without objection, that will be the order.

[The information follows:]

**********COMMITTEE INSERT**********

*Mr. Duncan. And without objection, the subcommittee will be adjourned.

[Whereupon, at 3:16 p.m., the subcommittee was adjourned.]